

National Drinking Water Advisory Council

Meeting Notes

July 21 – 22, 2011

EPA Region 9  
75 Hawthorne Street  
San Francisco, CA, 94105

Prepared for:

United States Environmental Protection Agency  
Office of Ground Water and Drinking Water  
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## **Attendees**

### **National Drinking Water Advisory Council (NDWAC)**

Olga Morales, Chair, Rural Development Specialist-Environmental, Rural Community Assistance Corporation, Dona Ana, NM

Maria Kennedy, Executive Director, Quail Valley Environmental Coalition, Rancho Cucamonga, California

Sonja Massey, Chief, Groundwater Branch, Alabama Department of Environmental Management, Montgomery, Alabama

Dennis Diemer, General Manager, East Bay Municipal Utility District, Oakland, CA

Jessica Godreau, Chief, Public Water Supply Section, North Carolina Department of Environment and Natural Resources, Raleigh, North Carolina

Jennie Ward-Robinson, President/Executive Director, Institute for Public Health and Water Research, Spokie, Illinois

Douglas Owen, Vice President and Chief Technology Officer, Malcolm Pirnie, Inc., White Plains, NY

David Saddler, Manager, Water/Wastewater and Propane Dept., Tohono O'odham Utility Authority, Sells, AZ

Marcia St. Martin, Executive Director, Sewerage and Water Board of New Orleans, New Orleans, Louisiana

June Weintraub, Senior Epidemiologist, San Francisco Department of Public Health, San Francisco, California

Lisa Sparrow, President, Utilities, Inc., Northbrook, IL

Craig Woolard, Treatment Division Director, Anchorage Water and Wastewater Utility, Anchorage, Alaska

Hope Taylor, Executive Director, Clean Water for North Carolina, Durham, North Carolina

Robert Vincent, Environmental Administrator, Bureau of Water Programs, Florida Department of Health, Tallahassee, Florida

### **Centers for Disease Control and Prevention (CDC) Liaison**

Dr. Max Zarate-Bermudez, Division of Emergency and Environmental Health Services, National Center for Environmental Health (NCEH), CDC, Atlanta, GA

### **U.S. Environmental Protection Agency (EPA) Attendees**

Cynthia Dougherty, Director, OGWDW

Ronald Bergman, Acting Deputy Director, OGWDW

Pamela Barr, Director, Standards and Risk Management Division (SRMD), Office of Ground Water and Drinking Water (OGWDW)

Sonam Gill, Intern, Region 9

Jill Korte, Drinking Water Office, Region 9

Michelle Moustakas, Drinking Water Office, Region 9

Jennifer Orme-Zavaleta, Office of Research and Development (ORD)

Jovita Pajarillo, Water Division, Region 9

Everette Pringle, Drinking Water Enforcement Officer, Region 9

Jackie Springer, Assistant DFO, OGWDW

Alexis Strauss, Director, Water Division, Region 9

**Designated Federal Officer (DFO)**

Suzanne Kelly, OGWDW

**Members of the Public**

Manouchehr Boozarpour, San Francisco Public Utilities Commission, Water Quality Division

Jennifer Clary, Clean Water Action

Eric Cole, Pine Point Commodities Group

Daneen Farrow-Collier, NCEH, CDC

Peter Gleick, President, Pacific Institute

Larry Ladd, Community Advisory Group for Aerojet Superfund Site Issues

Karen McBride, Rural Community Assistance Corporation (RCAC)

Rick Sakaji, East Bay Municipal Utility District (EBMUD)

Alice Tripp, Clean Water Action

Andria Ventura, Clean Water Action

Steve Via, American Water Works Association (AWWA)

Leah Walker, California Department of Public Health

## Meeting Summary: Thursday, July 21, 2011

### WELCOME

**Suzanne Kelly**, Designated Federal Officer (DFO), and **Olga Morales**, Chair, opened the meeting and provided an overview of the agenda. One Council member, Elston Johnson, was not in attendance.

### OPENING REMARKS

**Cynthia Dougherty**, Director, Office of Ground Water and Drinking Water (OGWDW)

Cynthia Dougherty, Director, Office of Groundwater and Drinking Water (OGWDW) provided the opening remarks and charge for the meeting. She expressed that the fundamental goal of the Drinking Water Program is to make sure every American has access to safe drinking water, and that there is a lot to do to make sure that happens, including significant coordination between EPA, the States and the public. She mentioned that later in the day, Ms. Barr would discuss ongoing efforts related to drinking water regulations, rule revisions, and the Drinking Water Strategy, which was discussed at the last meeting. Mr. Bergman would also be briefing the NDWAC on a number of EPA efforts, including sustainability.

Ms. Dougherty expressed that EPA is committed to sustainability, and a lot is being done to promote sustainability as an Agency. Some of these efforts were discussed at the last meeting, and a set of recommendations on the Climate Ready Water Utilities (CRWU) Report was provided by the NDWAC to the Administrator. Ms. Dougherty stated that although the Agency has not formally responded to the NDWAC's submission, there have been two draft versions of responses developed. Unfortunately, a final version has yet to be completed, because just after completion of each of the drafts, there have been new developments requiring additional follow-up. For example, EPA recently created the CRWU toolbox, which helps utilities prepare for quick and efficient response actions. EPA has also developed the Climate Resilience Evaluation and Awareness Tool (CREAT), which allows utilities to evaluate adaptation and threats. The first version of CREAT is currently available online for free download at: <http://water.epa.gov/infrastructure/watersecurity/climate/creat.cfm>. In the fall of 2010, there were web-based trainings provided on CREAT. She described that EPA has also developed an Adaptation Strategy Guide for utilities.

At the last meeting, the NDWAC discussed the Adaptive Response Framework, and how implementation might proceed. There are a number of Water Sector associations that are working through numerous follow-up actions from this Report, and looking at how to build resilience. This will support where the Agency is going with regards to all-hazards water security. She stated that EPA's formal response to the NDWAC's recommendations, incorporating these activities, will be coming soon.

Ms. Dougherty also indicated that there have been developments with the Underground Injection Control (UIC) program and hydraulic fracturing. An update was provided to the NDWAC at the

December meeting. Since then, EPA has been continuing to assess the impacts of hydraulic fracturing on water resources, as requested by Congress. There has been extensive outreach to the public, and EPA has continued to go to the Science Advisory Board (SAB) for advice and guidance. Ms. Dougherty stated that the Agency is in the process of finalizing a plan, including case studies. EPA has also been looking at issues related to the way that the Safe Drinking Water Act (SDWA) applies to this issue. There is an exclusion to the definition of UIC for fluids used to conduct hydraulic fracturing. Diesel fuels are used in these fluids; this is an exception to the exclusion. There have been numerous meetings with different Water Sector associations, as well as a webinar about this issue. EPA originally thought that diesel fuel was not used in the hydraulic fracturing process, but now that the Agency is aware of its use, it is preparing its response in terms of a regulatory process. Information is being shared with the public in an effort to gain a comprehensive evaluation of existing practices. There is a lot of work going on in this area.

The EPA is also anticipating significant increases in shale gas extraction. Ms. Dougherty indicated that the Agency is investigating the process of injection wells being used for flow back water in Pennsylvania. Some water is being taken to publicly owned treatment works for disposal. Pennsylvania is a unique situation and EPA has been working with the State.

Ms. Dougherty stated that the Agency is also looking at whether the Clean Water Act (CWA) is working properly with regard to these issues, and to shale gas extraction especially. She indicated that an overlay to all of this is the President's Blueprint for a Secure Energy Future. The Agency needs to ensure that extraction is done in a way that does not cause environmental harm. The EPA, Department of Energy (DOE), and Department of the Interior (DOI) were asked to look at this. DOE was asked to look at the issue of best practices, and provide a report of recommendations within a relatively short timeframe. There have been meetings over the last few months, and a report is anticipated in mid-August. EPA has worked with DOE, as well as a number of others on this issue.

Ms. Dougherty also discussed the Agency's anticipated fiscal year (FY) 2012 budget. This budget will start on October 1, 2011. She indicated that currently Congress is talking about a debt ceiling and appropriations for FY 2012. This would cover EPA and DOI among other agencies. According to the current budget that was reported out by the full Appropriations Committee, there were \$2 billion in overall reductions, which included a reduction of \$1.5 billion in EPA's budget. A large portion of this would be taken from the Clean Water State Revolving Fund (CWSRF). These reductions would bring those programs down to FY 2008 budget levels. The Drinking Water Program could see a \$150 million reduction. Historically, the program funding has ranged from \$820 to \$830 million. The Clean Water Program could see a more significant reduction of \$600 million. There would also be a number of reductions across the Agency, including some of the State grants and EPA regulatory program areas. The regulatory program cut backs, which could be \$7.8 million, are partly a result of public perception that EPA has been too intrusive with regulations. The regulatory program cutbacks reduce the budget to 2006 levels. She explained that EPA does not know what will happen in the Senate. The language in the bill itself already restricts regulations. It is not specific to drinking water, but to water in general. The definition of Waters of the U.S., Section 316(b), Cooling Water Intake Structures, and the Air Quality Program are also seeing restrictions. She indicated

that there is a lot of discussion in Washington about what will happen with all of these requirements. There are not just changes to reporting language, but to legislative issues and risk assessment restrictions; EPA is not yet sure what this all means for the Agency.

Although the FY 2012 budget is still undecided, it is expected that the Senate will be moving quickly. The Nation is operating at a time when Congress is looking to reduce spending, and EPA, like any other Agency, needs to sort through the impacts. The Agency underwent significant funding decreases in FY 2011, and reduced travel for all Agency staff by 40% through three-fourths of the year. She indicated that one of the reasons why this NDWAC meeting is on the West Coast is because it reduced travel needs for many of the Council members.

Ms. Dougherty stated that the U.S. Government Accountability Office (GAO) recently put out a number of reports, two of which she highlighted. The first one looks at the process of how the Agency determines whether to regulate additional contaminants, and makes recommendations under three key areas: criteria for identifying contaminants that pose the greatest health risk; monitoring of unregulated contaminants; and Regulatory Determinations. The report concluded that the EPA does not have a transparent and clear process, and has not published criteria for how Regulatory Determinations are made. The report included 17 recommendations, including criteria for making decisions. EPA responded that the work being done on the Contaminant Candidate List – third edition (CCL3) and with the NDWAC is addressing some of these recommendations. The EPA also stated that it would more explicitly outline the process for how Regulatory Determinations are made, and ensure scientific peer review on that process.

The second report Ms. Dougherty discussed was just released this week, and concerns data quality for enforcement decision making. The GAO Report concluded that EPA's current system is not working. The EPA also feels that this has been a significant issue for a number of years: to make sure states have all the necessary data on violations, as well as linking federal and state systems.

*Discussion:*

**Mr. Bergman** stated that, among other recommendations, it was recommended that the Agency go back to the number of State audits that were conducted a few years ago; they had been cut back due to budget constraints. He followed that he could send the GAO report out to the Council.

Ms. Dougherty indicated that Mr. Bergman would be talking later in the day about EPA's efforts to ensure that states have better information. One of the topics will be improvements to the Safe Drinking Water Information System (SDWIS) over the next few years, which would help states with electronic reporting.

Ms. Dougherty also mentioned that the EPA went through a review of State regulations in the spring of 2011 to make sure that they were cost effective. She indicated that Mr. Bergman would

be discussing the primary drinking water standards evaluation that takes place every six years. This wouldn't replace anything that is already in place, but would be looking at how the six year review meets the Agency's requirements. The Agency is also looking at the effectiveness of Consumer Confidence Reports. The statute was written 15 years ago, and the way people communicate has changed since then. A lot of people now use the internet, email, etc. to communicate, but not everyone has access to these tools. This is an issue that is being looked at in the review.

Ms. Kennedy asked what process was being used for the regulatory review.

Ms. Dougherty indicated that there is a lot of discussion in Congress, and many feel that there is too much regulation, and that it is not useful and effective. As a result, the President decided it was appropriate to take a step back and assess the effectiveness of the regulations that are on the books today across the government.

## REGULATORY ACTIVITIES UPDATE

Pamela Barr, Director, Standards and Risk Management Division (SRMD), Office of Ground Water and Drinking Water (OGWDW)

Ms. Barr provided an overview of EPA's regulatory activities. Her presentation included the Drinking Water Strategy Update, SDWA Regulatory Processes, Unregulated Contaminants, Existing Standards, Regulatory and Implementation Assistance Tools, and Research. The update to the Drinking Water Strategy focuses on four goals: (1) address contaminants as groups rather than one at a time; (2) foster development of new drinking water treatment technologies; (3) use the authority of multiple statutes to help protect drinking water; and (4) partner with states to share more complete data from monitoring at public water systems. With regard to (3), Ms. Barr noted that there was a focus on the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA).

Ms. Barr indicated that the first goal of addressing contaminants as groups would be less time consuming and resource intensive, account for risks from multiple contaminants, deal more effectively with an increasing number of emerging contaminants, and provide water systems with an opportunity to make best long-term decisions on capital investments. Two potential groups that she identified were carcinogenic volatile organic compounds (VOCs) and nitrosamines. She then went through each of the potential groups to discuss whether they meet the four Drinking Water Standard factors:

Common end point;

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Common analytical method;

Common treatment/control processes; and Co-occurrence of data.

Ms. Barr briefly discussed the second goal of fostering new drinking water technologies, and the formation of the Regional Water Technology Innovation Cluster (WTIC) in January 2011 to

bring together public and private partners to focus on finding new ways to simultaneously treat multiple contaminants in drinking water. She then went into the third goal of using multiple statutes to protect drinking water. The EPA is identifying regulatory authorities under TSCA and FIFRA that may provide opportunities for better protecting drinking water. The Agency is currently developing Human Health Benchmarks on Pesticides (HHBPs) that can be used as tools in assessing the occurrence of contaminants in drinking water (when regulatory values are not available). They are not enforceable, but are for advisory purposes. These have also not been formally published yet. The fourth goal is to partner with states to share more complete data from monitoring at public water systems. She indicated that a State-EPA Data Sharing Committee, made up of the EPA, Environmental Council of the States (ECOS), Association of State Drinking Water Administrators (ASDWA), and Association of State and Territorial Health Officials (ASTHO) representatives, signed a Data Sharing Memorandum of Understanding (MOU).

Ms. Barr discussed the SDWA regulatory processes for the Contaminant Candidate List (CCL), Regulatory Determinations, Unregulated Contaminant Monitoring, Regulation Development, and the Six Year Review. The CCL is published every five years. Decisions on whether to regulate CCL contaminants with a drinking water standard are made on at least five contaminants every five years. Also, every six years, the standards are reviewed and (if appropriate) revised. Every revision must maintain or improve public health protection. If they are revised, EPA goes through the regulation development process again and evaluates a number of factors.

Ms. Barr explained that perchlorate is the first positive Regulatory Determination that has been made under this framework. The Regulatory Determinations for CCL3 are going on now. A more robust data set is needed for many contaminants in order to determine if they should be regulated. A total of 32 of the 116 contaminants on the CCL3 are expected to have health effects assessments conducted this year. For these, there is national occurrence data or sub-national occurrence data demonstrating that the level of occurrence may be on a national level.

Ms. Barr summarized the Unregulated Contaminant Monitoring Rule 2 (UCMR-2) results to date. There were a total of 25 contaminants, 13 of which have not been detected. The results are posted on the web-based National Contaminant Occurrence Database (NCOD). The UCMR-3 was proposed in March of 2011, and the final is expected by March of 2012. Monitoring is planned for 2013 to 2015, and is proposed to include 28 chemicals and two pathogens. The comment period for UCMR-3 closed May 2, 2011, and comments were submitted by 53 stakeholders.

Ms. Barr discussed the Endocrine Disrupter Screening Program (EDSP). The second EDSP list was published in November 2010 and contained 134 chemicals. After considering comments and information submitted, the EPA plans to refine the list and develop a schedule for issuing test orders (late 2011).

Ms. Barr mentioned that the Total Coliform Rule (TCR) and Lead and Copper Rule (LCR) revisions would be discussed in a separate presentation, but she mentioned the TCR Method Evaluation. The TCR Advisory Committee recommended evaluation of all currently approved coliform analytical methods to determine appropriateness. Stakeholder meetings and

teleconferences were held from May to November, 2010. The Water Environment Research Foundation (WERF) is leading the development of a library of known coliform, E. coli, and non-coliform strains to be used for comparison. The EPA is following the library progress and evaluating next steps.

Ms. Barr also discussed EPA's work on fluoride and chromium. EPA sets the maximum allowable concentration of fluoride in drinking water, and the Centers for Disease Control and Prevention (CDC) recommends a level of fluoride to be put in water to help prevent tooth decay. It has been identified that the public gets confused by these two standards. In January 2011, EPA and the U.S. Department of Health and Human Services (HHS) announced steps to ensure that standards/guidelines for fluoride continue to provide the maximum protection to Americans, especially children. The actions are intended to maximize health benefits of water fluoridation while reducing overexposure in children. A date for the finalized review has not been set.

Ms. Barr then discussed chromium, saying the drinking water standard is currently 0.1 mg/L for Total Chromium. EPA released an Integrated Risk Information System (IRIS) toxicological review of Chromium-6 health effects, and when the toxicological review is final, EPA will determine if a new/revised chromium standard is needed. EPA is working with state and local officials to determine prevalence of Chromium-6, and issued guidance to water systems on enhanced monitoring and analysis of Chromium-6. There are now answers to frequently asked questions about Chromium-6 available on EPA's website.

Ms. Barr discussed the Agency's Optimization Program compliance/implementation assistance. Area-Wide Optimization Programs (AWOPs) are active in 21 states, and there have been collaborative efforts between EPA, States, and ASDWA. EPA has been developing new technical tools and implementation approaches. EPA and states are including optimization of Distribution Systems and Groundwater Systems in AWOP. The Partnership for Safe Water has recently introduced a Distribution Systems Optimization (DSO) component to its program. The AWOP meeting held on July 19 – 20, 2011 in Cincinnati was designed to enhance networking and collaboration between EPA and AWOP states.

Ms. Barr concluded with a brief summary of the EPA Office of Research and Development's (ORD's) recent restructuring. ORD's new program will include six programs: (1) Safe and Sustainable Resources; (2) Chemical Safety and Sustainability; (3) Air, Climate, Energy; (4) Sustainable and Healthy Communities; (5) Human Health Assessment; and (6) Homeland Security.

*Discussion:*

Ms. Sparrow asked how many states require fluoridation.

Ms. Weintraub stated that this is done at the local level in some places.

Ms. Sparrow asked if chromium changes between Chromium-3 and Chromium-6 during the Drinking Water treatment process.

Ms. Barr stated that yes, they do.

Ms. Sparrow asked how you could then test adequately for one or the other.

Ms. Barr suggested that systems could test for both Chromium-6 and Chromium-3. EPA is currently trying to get a better understanding of the relationship between the two at the various points of the treatment process.

Mr. Zarate-Bermudez thanked Ms. Barr for the presentation. He stated that on behalf of the CDC, there has been a good working relationship between CDC and EPA on the efforts regarding fluoride. He further stated that tomorrow he would be talking about CDC's efforts related to drinking water. He then asked whether nitrosamines were assessed equally.

Ms. Barr answered that six or seven were assessed in UCMR 2. The same systems were assessed at the same time. There were just fewer than 4,000 systems.

**Mr. Zarate-Bermudez** asked whether there were any details that could be provided regarding the development of the library.

Ms. Barr answered that she could not provide many details. A researcher from the University of Illinois received a grant from WERF to work on that. She stated that she could put Mr. Zarate-Bermudez in contact with a staff person who may know more.

Mr. Vincent referenced the Human Health Benchmarks on Pesticides (HHBPs) in drinking water. He stated that his constituency has been monitoring for pesticides at a number of their wells, and have collected a lot of data. He asked whether EPA's information on HHBPs was publicly available yet.

Ms. Barr answered that this information was not publicly available yet, but that it hopefully would be soon.

Mr. Vincent stated that he could send his data to Ms. Barr.

Mr. Woolard stated that there was some discussion on carcinogenic VOCs, and that he would like to hear more about how this was going to work.

Ms. Barr answered that there are eight regulated contaminants. Any changes will have to maintain or improve the public health benefit. Some of these have been considered in the past. One approach is to monitor them as a group.

Mr. Woolard asked how this would be sorted out.

Ms. Barr indicated that EPA was currently working on the health risk assessment. Once the Agency has that completed, the various health effects will be understood more fully. Then, EPA will be looking at analytical methods. The Agency is looking at treatment feasibility, and the cost/benefit analysis to see whether the costs justify the benefits.

Mr. Woolard stated that he understood an attempt was being made to allow all of them to be tested with the same analytical method, but if not, then he asked whether they would need to be put into a separate group.

Ms. Barr stated that they are working around that. She indicated that it may be possible to adjust the method to include more contaminants.

Mr. Owen stated that he recognized this was a relatively active agenda as opposed to the past couple of years. Reflecting on the comments Ms. Dougherty brought up regarding the regulatory mandates, and having the process more transparent, he was curious about whether there was enough budget to manage these goals within the proposed timeframe, or if the Agency was planning to borrow resources from somewhere else.

Ms. Barr answered that if the budget cut that was discussed during Ms. Dougherty's opening remarks came to fruition, then yes, this would become a problem. She explained that there would still be the EPA personnel to support the goals, but that the technical work is often given to the contractors, and there would no longer be funding for this.

Ms. Dougherty followed that the activities presented by Ms. Barr were planned based on the existing budget. If there are budget cuts, then the Agency would have to go back and revise the Strategy.

Ms. Weintraub thanked Ms. Barr for the presentation. She said that it is important to learn about the Office's activities and their schedule for completion. It appears that there exists the same enthusiasm as a year ago, and there will be opportunities for the Council to support the good work that is being done.

Ms. Godreau referenced Goal 3, Use Multiple Statutes to Protect Drinking Water, and asked, from a source water protection standpoint, whether it would make sense for EPA to protect drinking water at the source water level, and look at where they are introduced into the environment. She mentioned FIFRA, and asked how much involvement EPA had in that. She asked whether EPA had identified anyone to work with, or whether to amend some of their requirements.

Ms. Barr stated that the Agency is receptive to this. They haven't talked too much about amending the Rules, but there is flexibility in the existing Rules. She stated that at the Federal level there are not many data collection opportunities, but that at the State level there are. It is a lot of work at the Federal level to get the same information. The States have a much easier process of collecting data. EPA does not want to put extra burden on the States, but if they are already in the process of collecting the data, this is a way that EPA can obtain the data. One of the criteria specified by the SDWA for a determination to regulate a contaminant is that it must be based on a finding that the contaminant is known to occur or that there is substantial likelihood that the contaminant will occur in public water systems with a frequency and at levels of public health concern. The Agency is looking at whether this supplemental data can build that case. The EPA is also looking at how the Office of Water (OW) can better collaborate with the

Office of Chemical Safety and Pollution Prevention (OCSPP). The OCSPP has a tremendous amount of data on the perfluorinated chemicals, perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). There is a lot of receptivity on both sides for working together to protect drinking water. Staff at OCSPP are very excited about protecting drinking water. There is also some interaction with the Food and Drug Administration (FDA).

Mr. Woolard asked about EPA's conversations with the FDA on pharmaceuticals, and the process for including those. He noted that there were quite a few on CCL3.

Ms. Barr stated that this is not done through the OGWDW, but through the Office of Science and Technology (OST), who has had a lot of discussions with the FDA. This is still ongoing.

### **CONSULTATION: TOTAL COLIFORM RULE REVISIONS**

**Pamela Barr**, Director, SRMD, OGWDW

**Wynne Miller**, Chief, Standards and Risk Reduction Branch, SRMD, OGWDW

**Julie Javier**, SRMD, OGWDW

**Karl Anderson**, SRMD, OGWDW

**Sean Conley**, SRMD, OGWDW

Ms. Barr provided a presentation regarding the revised TCR (RTCR). The objectives of the consultation were to provide background on the TCR, to summarize the proposed RTCR, to summarize the NDWAC recommendations on the proposed RTCR from the 2009 consultation, to discuss public comments received on other issues, and to discuss EPA actions to address NDWAC recommendations and comments received.

She reiterated, as discussed in the earlier presentation, that the SDWA requires EPA to review and revise as appropriate, each National Primary Drinking Water Regulation no less than every six years. Any revision must maintain or improve public health protection. Through the six year review, EPA decided to review and revise the TCR.

EPA convened the TCR Distribution System Advisory Committee (TCRDSAC), consisting of 15 organizations in 2007. TCRDSAC deliberations concluded within a signed Agreement in Principle (AIP) that included recommended revisions to the TCR in 2008. EPA proposed the RTCR, which has the same substance and effect as the TCRDSAC recommendations in 2010. The Final Rule is expected in spring/summer 2012.

EPA presented a summary of the AIP to NDWAC at a November 2008 NDWAC meeting. EPA also consulted with NDWAC on May 27 – 28, 2009 in Seattle, Washington. The consultation questions concerned implementation challenges, guidance, and public notification language. EPA then met with a group of NDWAC members to further discuss public notification requirements in 2009. The SDWA requires consultation again before publishing the final RTCR.

The proposed RTCR emphasizes investigation and corrective action based on monitoring results, rewards well operated systems with reduced monitoring, and reduces public notification (PN) where there is no imminent health threat. There is an overall shift in focus for the RTCR from

monitoring results informing public notification to monitoring results informing investigation and corrective action. The benefits are that it is a more proactive approach to public health protection and there is a reduction in confusion associated with PN for TC violations.

The RTCR construct uses Total Coliform (TC) as part of an overall Treatment Technique (TT), and that there is no maximum contaminant level goal (MCLG) or maximum contaminant level (MCL) for TC. She also identified the changes in monitoring and assessments.

Ms. Barr then talked about the NDWAC comments. She first reviewed the comments related to education. The comment was that EPA should provide utilities and States with tools to help them understand the revised rule provisions and assist with providing public education. To address this comment, EPA actions included: hosting a stakeholder meeting in Washington, DC in May, 2010, which included plans for RTCR guidance as a topic area; holding public information meetings and a webcast in August 2010, which included core elements of the proposed RTCR, Assessments and Corrective Action, and plans for guidance as topic areas; and developing the Assessment and Corrective Action (A/CA) Guidance and posting the draft for public comment in August to December, 2010. The final A/CA guidance and other final technical and implementation guidance will be completed through work with stakeholders representing States and PWSs. Planned education, training and guidance on RTCR will include those activities and products typically prepared for final rules, including: presentations about rule requirements at conferences and meetings; training for EPA regions and State trainers; small systems guidance materials; fact sheets and quick reference guides; sampling guidance; and primacy, implementation, and sanitary survey guidance for States.

The NDWAC comments related to monitoring and public notification (PN) were highlighted. The NDWAC expressed concern that the changes to monitoring requirements could lessen the opportunity for systems to identify violations. EPA is addressing comments received as the final RTCR is being developed.

Ms. Barr discussed environmental justice (EJ) considerations and small systems. EPA has made efforts to assure consideration of EJ and small systems; for example, the TCR Advisory Committee included groups that represent the perspective of public health and/or the rights of minority, low income, or indigenous populations.

There were also comments on storage tank inspection and cleaning. The TCR Advisory Committee recommended additional research and information collection on drinking storage issues. EPA and the WERF convened a Research Partnership that identified storage as a high priority issue with some information and research needs. EPA requested comment on tank conditions, costs, state requirements, and how to better protect public health. Some strongly suggested cleaning and inspection requirements based on outbreak histories and conditions found in tanks. There are long periods without cleaning, which sometimes results in large amounts of sediment and dead animals found in tanks. In some states, surveyors are restricted from climbing tanks, and there are limits on what can be seen from the ground and from the outside. Ms. Barr suggested that she could provide photos and other information related to the public comments on the RTCR, particularly on tank inspections.

Ms. Barr indicated that the next steps for the RTCR are to continue to evaluate comments and that EPA expects to publish the final rule in mid-2012.

*Discussion:*

Ms. Weintraub referenced changes in monitoring, cleaning and inspection. Systems serving 1,000 people or less have new criteria to require a reduction in monitoring if they show they are well-operated. She asked what was in the rule, and whether there was flexibility within the rule to define “well-operated.” She asked whether other criteria were also considered. Related to cleaning and inspection, she asked whether EPA would be able to include well-operated criteria for cleaning and inspection.

Ms. Barr read what was in the proposed rule. She summarized that generally for reduced monitoring at a non-community water system (NCWS) serving 1,000 or fewer customers, the system would need an annual review by the State, to be in compliance within the past 12 months, free of sanitary defects, have a protected source, and meet construction standards. Other criteria are encouraged for NCWSs, such as cross connection control, certified operator, meet disinfection criteria, and other equivalent enhancements. For a community water system (CWS) serving 1,000 or fewer customers, the monitoring is reduced from monthly to quarterly. To be eligible for reduced monitoring, a CWS serving 1,000 or fewer customers must be free of sanitary defects, have a clean compliance history, have a protected source, certified operator, and also must meet at least one of the other additional criteria, e.g., cross-connection control program.

Ms. Weintraub asked what is required in an annual inspection.

Ms. Barr answered that the rule is not specific on what is actually required for an annual site visit.

Ms. Morales asked if states have the authority to require what a site visit entails.

Ms. Javier answered that it is comparable in comprehensiveness to a Level 2 Assessment.

Ms. Barr stated that for a CWS, the system needs to have a clean compliance history, no sanitary defects, a protected water source, be built to construction standards, and use a certified operator.

Mr. Vincent asked whether a Level 2 Assessment also includes a storage tank assessment.

Mr. Anderson stated that whether it is conducted by State personnel or another party, the entity typically doesn't have the necessary insurance to conduct a comprehensive evaluation, including climbing up the tank and entering it.

Ms. Morales stated that right now there are no existing or recommended regulations that require tanks to be assessed, and asked whether this is something being considered.

**Ms. Barr** responded that EPA could make a regulation, or seek more comments to eventually enact a Rule.

**Ms. Morales** indicated that in her experience 90% of the contamination events end up having to do with an issue relating to storage tanks. This is also where a contamination event can affect the largest volume of water. She noted that she sees value in having something more solid in the regulations regarding tank inspections.

**Ms. St. Martin** asked whether there were an equal number of comments on the pipeline portion of the distribution system as there were on the assessment of storage tanks.

**Ms. Javier** stated that there were not many comments about other parts of the distribution system.

Mr. Vincent noted that cross-connections are another significant issue, and asked whether there were comments in this regard.

**Mr. Anderson** stated that there were not many comments, and that this issue was added as part of best available technologies. The comments stemmed from that.

Mr. Vincent asked whether there were any comments on cross-connection control.

Mr. Anderson stated that there were not, and that comments were not specifically sought for this issue.

Mr. Vincent noted that in the past the NDWAC had thought it pre-mature to consider cross-connections, because there wasn't enough data or policy research on the topic to effectively regulate.

Ms. Barr stated that there was a recommendation to conduct more research. There is AWWA guidance that has been around for about 20 years, which recommends cleaning and inspections of tanks every three to five years. EPA conducted a survey and asked questions regarding tanks. The information that was received from this effort indicated that tanks were generally cleaned every three to five years.

Mr. Woolard mentioned that he thought he recalled that an investigation was required after a positive TC hit. He asked whether there were provisions on what would be an adequate response, and whether the rule or guidance would address this. He noted that there could be lots of problems.

Ms. Barr indicated that the rule and preamble talk about the requirements of the assessment. The assessment form has to go to the State within 30 days, and needs to indicate what was done for the assessment and also what corrective action was taken. If it cannot be finished within 30 days, then a local utility would need to negotiate regarding allowing more time. The State can determine that the assessment is not sufficient.

Ms. Miller stated that the manual that EPA is developing includes guidance on assessments and corrective actions. The TCR talks about common corrective actions.

Mr. Woolard stated that he understood that the rule is general in defining assessment and corrective action, and that every state would need to create their own forms.

Ms. Barr concurred with this, and indicated that the States did not want EPA to give them forms.

Mr. Woolard stated that he would speak against a blanket requirement on tank inspections. He said that there are too many variables: state of distribution system, water quality conditions, etc. Also, the burden would fall onto the State for many systems. He suggested that it constrains utilities, and places the burden on them to pay for the inspections. He stated that he is not suggesting that this is not an issue, but that he did not believe it should be a blanket rule.

Mr. Owen stated that in his opinion, whenever a regulation is made specifically around one element, that element becomes the focus of what people do or monitor. State agencies are already indicating that costs are going to be high for smaller systems. He indicated that he thought it would be counterproductive for EPA to put in requirements specifically for storage tanks. If money is tight, then the only element that systems will look at is tanks, and other components of the system will not be monitored. He suggested including language that if data support that the most common contamination source is tanks, then it is important to include this in the inspection, but this should not be in the regulation.

Ms. Morales stated that she agreed. A lot of times tanks are the problem, but they are not the only problem. The tank inspections can be difficult, because of access issues. If there is something included in the regulations for tank inspections, then that needs to be weighed with all other aspects of the system.

Ms. Sparrow indicated that she felt the estimate that was provided regarding tank cleaning was low, and that better research was needed.

Ms. Barr stated that in her experience, the numbers can really vary, based on water quality, sediment, etc.

Ms. Kennedy referenced the discussion about the dead animals in the tank, and specifically the dead horse. If the public saw the images of a dead horse in the water tank, there would be a public outcry. She stated that this is a concern of hers as a member of the public. Disadvantaged communities have no other way of getting water then depending on public water. Also, it was mentioned that there were no comments from EJ communities. The requests for comments may need to be more culturally appropriate. EPA has an EJ office that regularly communicates with EJ communities. If OGWDW had worked with them, then maybe there would have been a better response rate.

Ms. Barr stated that there was some confusion. The Agency put in a request for comment to all audiences regarding special EJ considerations. This discussion was not stating that EPA didn't

get any comments from EJ communities. It was that EPA didn't receive any comments regarding special EJ considerations.

Mr. Saddler suggested that regulations need to be driven by need and kept in perspective. For example, for cross connection control there needs to be an alternative water source, and some areas do not have that. He stated that if you try to regulate too much, you are going to open up affordability issues and nothing will get done. He further asked what the challenges were to mandate increased monitoring for systems. He indicated that a good number, if not the majority, of systems lack resources for this. He asked whether these aspects have been considered.

Ms. Barr indicated that these certainly were considered, and that only NCWSs would be affected. Systems would be going from annual or quarterly to monthly. There would be an increased cost for the monthly monitoring and increased responsibility for the State to oversee and conduct monitoring for those over which they have responsibility. The Agency did its best to factor cost into these decisions.

Ms. Godreau asked whether this was better than requiring the five routine samples.

Ms. Barr stated that yes it was. This is a reduction of four from what they would have had to do.

Ms. Sparrow stated that although there is no doubt that people across the country have different experiences, she has never heard of horses in tanks. She indicated that she has looked at thousands of tanks, and has never seen or heard of anything like that. She suggested that people be careful in how this is used. She stated that she wanted to reemphasize what Mr. Woolard said: that the tank inspection should not be a requirement. Essentially what is being checked is the TC issue. It is the operator's responsibility to identify whether the tank has been inspected, and he/she will think to look to the tank as the source. It is not necessary to force systems down that path.

Ms. Morales agreed and stated that tanks should be looked at as part of the system along with the other components.

Ms. Sparrow stated that operators will go through the critical path, and look to the component that is problematic.

Ms. Dougherty agreed and suggested that systems know the vulnerable components of their own systems.

Ms. Weintraub noted that in San Francisco, they are proud of their TCR compliance, but that there was one issue with E. coli. The issue was related to roof top tanks, not utility tanks. It was a cross-connection and tank problem. This type of tank inspection and compliance issue could be relevant for larger systems even if they are not under utility jurisdiction. With the State implementation comments, cross-over compliance with the Ground Water Rule (GWR) was mentioned. She asked whether there were any examples of conflicts.

Ms. Javier stated that some commenters said that EPA should let the GWR take its course, and then after that, overlay the TCR. The GWR only applies to groundwater systems. The universe of other systems is not covered, and this is where TCR comes in. Corrective actions are already in the GWR, but, again, this only covers groundwater systems.

Mr. Vincent asked whether the guidance would address the GWR and TCR overlap.

Ms. Barr stated, yes.

Ms. Javier also said yes.

Mr. Vincent brought up the plumbing code discussion. He said he wasn't sure who would be involved with this issue, whether it would be the folks working on the International Energy Conservation Code (IECC), or others. The roof-based storage tanks that Ms. Weintraub brought up earlier are not under the control of the utility, but are important. For example, the legionella outbreak in Miami was a plumbing code issue.

He asked whether there was any discussion about the link to the plumbing code.

Ms. Barr stated that there hasn't been much discussion around this. The Agency has compiled as much information as possible about States' plumbing codes and cross-connections.

Ms. Morales asked the Council whether there was a formal proposal they would like to make to the Agency.

Mr. Saddler put to motion a vote that the Council follow the recommendations of the TCRDSAC, while continuing to evaluate comments. Ms. Weintraub provided a second motion. All were in favor, and none opposed.

#### CONSULTATION: LEAD AND COPPER RULE REVISIONS

Pamela Barr, Director, Standards and Risk Management Division (SRMD), Office of Ground Water and Drinking Water (OGWDW)

Eric Burneson, Chief, Targeting & Analysis Branch, SRMD, OGWDW

Jeffrey Kempic, SRMD, OGWDW

Ms. Barr provided a presentation on the Lead and Copper Rule (LCR) revisions. She indicated that the purpose of the consultation was to obtain input on key areas of the LCR long-term Rule revisions. She then discussed the LCR background.

Ms. Barr explained that if a system's lead or copper sampling results exceed the action level (AL), then the system must optimize corrosion control treatment and conduct public education. If a system with optimal corrosion control treatment (OCCT) exceeds the lead AL, then the system must perform lead service line (LSL) replacement. The utility replaces the portion of the LSL, which the system owns, and offers to replace the customer's portion of the LSL at cost. Lines

that are below the AL are considered replaced. The system must replace 7% of the LSLs each year.

Ms. Barr summarized the key areas for the LCR revisions: sample site selection criteria, lead sampling protocol, public education for copper, measures to ensure OCCT, and LSL replacement requirements. She then went through each of these key areas, summarizing the existing Rule requirements and the key questions for the Council. She stated that currently the Rule is based more on lead, and not as much on copper.

Ms. Barr discussed sample site selection criteria. She clarified that it is not a random sampling; sampling is targeted toward the highest risk sites. She stated that EPA is investigating whether the site selection process developed about 20 years ago best addresses the sites of concern for lead today. The key questions related to this are:

Do the current tiering criteria for lead accurately represent the highest risk sites? If not, what needs to change?

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How should copper be addressed if there are tiering changes?

Ms. Barr then went through the LCR sampling protocol. The goal is to sample sites that are likely to have the highest lead levels. The samples are to be taken as first draw samples (one liter) from the cold water kitchen or bathroom tap, after the water has been standing in the pipes for at least six hours. She noted that the water that would have the highest concentration of lead is that coming from the LSL, and this would not necessarily be captured by the first draw. She further explained that under the current Rule, residents may take samples if instructions are provided by the water system; however, water systems cannot challenge results based on sampling collection errors. She also highlighted that sensitive life stages are not considered in site selection. Sites are selected to assess performance of corrosion control treatment, not to assess impacts of adverse exposure. The key questions related to this are:

Should EPA change the sampling protocols at LSL sites to address these issues?

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What implementation issues will arise from sampling changes?

Public education for copper was discussed. Currently, there are no educational or exposure mitigation materials provided for copper. Key questions for this are:

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Should systems send educational materials to consumers?

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If so, should it be limited to new connections or should the information be distributed system-wide?

Ms. Barr summarized OCCT. Large systems must provide OCCT, and small/medium systems must provide OCCT if they exceed the AL. Key questions for this are:

Should EPA require systems to re-optimize after an AL exceedence?

Should the LCR be more prescriptive on evaluating treatment options and monitoring key water quality parameters?

LSL replacement requirements under the current Rule were explained. Key questions for this are:

Should the requirement for partial LSL replacement continue?

Should the requirement for partial LSL replacement be eliminated in favor of full replacement?

Ms. Barr also discussed voluntary/infrastructure partial LSL replacement. She indicated that the majority of LSL replacements are actually outside of the Rule, and occur as replacement of the system's portion of the line as either part of a planned maintenance or emergency repair. Key questions related to this are:

Should there be notification and sampling requirements for these instances?

How would these requirements be imposed and enforced when the systems are in compliance with the Rule?

Ms. Barr went over the Science Advisory Board (SAB) Review and the charge to the Drinking Water Committee of the SAB. She stated that the draft SAB report was completed on July 1, 2011. The key findings included:

Partial LSL replacement has not been shown to reliably reduce drinking water lead levels in the short term, ranging from days to months, and potentially even longer.

Partial LSL replacement is associated with elevated drinking water levels for some period of time after replacement, suggesting the potential for harm, rather than benefit.

Available data suggest that elevated tap water lead levels tend to stabilize over time following partial LSL replacement, sometimes at levels below and sometimes at levels similar to those observed prior to partial LSL replacement.

Ms. Barr cautioned that only one study was used for this assessment. She stated that the short-term study did not support partial LSL replacement, and that there were not enough data to make any conclusions regarding long-term effects.

Ms. Barr discussed the LCR EJ Stakeholder Meeting, which was held on March 3, 2011 in Washington, D.C. Phone connections were provided for those that couldn't be in D.C. for the meeting. EPA didn't have as much participation as hoped, but they did receive feedback from those participating, e.g., EPA needs more information on the location of LSLs and whether they are associated with disadvantaged communities.

Ms. Barr concluded by summarizing the next steps, indicating that the proposed Rule was expected to be published in Spring/Summer 2012.

*Discussion:*

*Background*

Ms. Sparrow asked what the procedure was if a LSL is partially replaced, and then the test comes back positive for lead.

Ms. Dougherty stated that in 2007, it was clarified that if the homeowner opts out, and then there is a future positive result, then the system must retest, and ask the homeowner again about full LSL replacement.

Ms. Godreau asked for the procedure when there aren't LSLs, and the system has already optimized.

Ms. Barr stated that the requirements call for public education and re-testing.

Ms. Taylor stated that for the purposes of providing a case study, she is aware that D.C. has LSLs. She asked whether there has been partial or complete LSL replacement.

Ms. Barr stated that she believes it has been a mixture.

*Key Area #1: Sample Site Selection*

Ms. Weintraub asked for a hydrologic explanation for why partial LSL replacement leads to spikes in lead levels.

Ms. Barr explained that the partial LSL replacement leads to a fair amount of disturbance of the pipe partway down the service line, which directs more lead into the system.

Mr. Woolard stated that he understands it takes a while for the corrosion products / biofilm to form on the pipe.

Mr. Zarate-Bermudez asked whether the spikes in lead caused by the partial LSL replacement were attributed to soluble or particulate lead.

Mr. Burneson indicated that he didn't know if there was definitive evidence, but that it should be particulate lead, which is dislodged by disturbance of the LSL. This could also potentially release soluble lead as well, but the concern is more for the particulate lead.

Ms. Taylor noted that recent data also suggest that there is an elevation in lead with full LSL replacement. She asked how this can be the case, unless there is soluble lead in household pipes.

Mr. Burneson stated that more recent data have been compiled in the study by HDR Engineering, particularly looking at (no longer) galvanized iron pipe, which results in iron oxide in household pipes. Over time, lead adheres to the iron oxide. The full LSL replacement leads to disturbance of the household pipes, dislodging the lead.

Ms. Taylor asked whether temporary filtration systems were a solution.

Ms. Barr stated that they could be, yes.

Ms. St. Martin referenced partial LSL replacement, and asked how this health risk is communicated – whether it is the utility’s responsibility, and how it is written into the Rule. She also asked whether there was a difference in communication for a partial LSL replacement versus a full LSL replacement.

Mr. Burneson said that they are not substantially different. The utility must offer to replace the homeowner’s portion and also alert them to the potential of increased lead levels. The other requirement is that within 72 hours, the system has to try to get another LSL sample. This helps motivate the homeowner to flush the system and alert them to any high levels they may experience. She stated that these are the existing requirements, and the Agency is looking at a wide array of new options now.

Ms. Sparrow referenced the increased health risks of copper to those with Wilson’s Disease, and asked if this was based on statistical evidence.

Ms. Barr stated that yes it was.

Ms. Weintraub asked about the process for the LCR revisions in comparison to the TCR process. For the TCR process, the EPA had a committee that made specific recommendations, and she asked whether this would be the case for LCR.

Ms. Barr stated that the process used for the TCR has been done for a number of Rules, but not every Rule. She indicated that it is a very time consuming and expensive process. There are benefits, including information sharing, but this is not the process that EPA has taken for LCR so far. There is a workgroup for the LCR revisions, however, which includes EPA offices and some states.

Ms. Dougherty added that in the 2004 – 2005 timeframe, EPA tried to conduct a full review of the LCR partly because of what was happening in D.C., and to prevent this from happening in other places. The Agency held public meetings in other parts of country, and discussed issues related to LSL replacement, public education, etc. EPA invited experts, from an array of stakeholders. Based on the information that was received, EPA proposed revisions to the LCR in 2007. It was determined that these could not be addressed at that time, but there was a very broad open discussion, which is supporting the revisions now.

Mr. Bergman stated that there was a sub-group of the NDWAC that provided recommendations on public education for the 2007 review.

Ms. Barr indicated that the two public meetings are intended to determine whether the 2007 recommendations are still appropriate for the long-term revisions.

Mr. Zarate-Bermudez asked, in reference to site selection criteria, whether the school sampling bill was passed by Congress.

Mr. Burneson stated that he was not aware of any Congressional actions on school water sampling; however monitoring at schools is a different topic. For sample site selection, sites are considered and evaluated depending on the risk of exposure, not based on sensitive life stages.

Mr. Vincent referenced the issue of copper exposure on those suffering from Wilson's Disease, and asked what percentage of the population suffered from the disease.

A Public Participant stated that the white paper referenced about one in 40,000 people suffered from Wilson's Disease, but that does not include the carriers.

Ms. Sparrow asked what the occurrence was for lead after partial LSL replacement. She stated that assuming that the data are gathered, and there is a temporary spike, and assuming that there exist data to put into a curve to determine frequency, she wondered whether it would be 90% after one day, 5% after one month, or something else.

Ms. Barr stated that there has been some sampling of homes over time, but that there isn't a tremendous amount of data.

Mr. Burneson stated that the SAB struggled with whether the data they had were even sufficient enough to draw the conclusions that they did. They also stressed that they couldn't draw any conclusions on long-term effects, because the data were so limited.

Ms. Godreau stated that this is an important discussion point: homeowner sampling and the difficulty in collecting samples. This is an issue that needs to be addressed.

Mr. Burneson stated that he understood Ms. Godreau's concern. He indicated that the State can verify that the samples were collected and analyzed in accordance with the procedures outlined in the regulations. There needs to be a balance between allowing systems the flexibility to collect the data they need and not enabling them to misrepresent the data. He stated that he believed the workgroup had been talking about these issues, and are aware of them. It would be appropriate for the NDWAC to make recommendations on this issue.

Ms. Weintraub asked whether there was any information regarding how well residents follow the sampling instructions.

Ms. Barr stated that her impression was that most utilities ask residents to sample, and she was not aware of any information on how correctly they sample.

Mr. Burneson suggested that he was not aware of any studies on how volunteer samplers follow instructions. However, he has heard from utilities that it is often very difficult to retain samplers.

Ms. Taylor referenced an EJ issue related to sampling for lead in Durham, NC. She said that the City had offered a free service to residents to sample for lead; however, they needed to pick up and drop off the kits between 9:00 AM and 2:00 PM. This left many families, particularly those with one parent or both working parents, at a significant disadvantage. It was found that those that took advantage of the service were selectively in higher income areas.

Mr. Vincent referenced the lead sampling protocol, and particularly the requirement to capture the first draw. He said that if this does not capture the water in the LSL, then the sampling protocol should be changed.

Ms. Barr stated that the first draw contains the water that has been sitting in the pipe that is just leading up to the faucet. Typically the sampler would need to go several liters in to get to the LSL portion. This is the issue. It is much easier to ask people to do the first draw, but this does not capture the LSL. There are ways to determine how many liters are needed to discard before taking the sample, but this adds complication to the home owner.

Mr. Vincent asked whether it is inappropriate for utility staff to take samples in their own homes if they happen to be in the right tier.

Ms. Barr indicated that for site selection, you are looking for the highest risk homes, so often this doesn't work, but if the utility staff happen to be in the right tier, then she did not believe there was a prohibition.

Ms. Taylor referenced the problems that the State of North Carolina has been having with regard to setting State-specific water quality parameters. She said that philosophically it made sense, but that the regulating community does not know how to set the parameters. She asked if anyone knew how to determine the best prescriptive water quality parameters.

Mr. Woolard explained that it is different every time. His experience was that when agencies try to deal with simple indices, and small sets of parameters, they end up with the wrong answer, and can make situations worse. He stated that at the end of day, it is a complicated water chemistry problem. He said that he suspected that there could be improvements on what is collected, and that guidelines would be useful, but cautioned against using a simple set of water quality parameters.

Mr. Diemer stated that he agreed with Mr. Woolard, and that it is very complicated, and is dependent on time, season, etc.

Ms. Sparrow said that there were tools and resources to get homeowners to replace LSLs. She mentioned that she had started thinking about how to sample for lead, and how much water she needed to flush in order to take the sample of the LSL. She indicated that if she had difficulty with this, and she is in the industry, it could be very difficult for the general public who do not have the background knowledge.

Ms. Barr stated that there are calculations available based on the length of the service line.

Mr. Burneson indicated that there is a range of calculations, including simple calculations based on the typical diameter of the pipes, building setback distances, flow, etc.

Ms. Sparrow asked whether the Agency had guidance.

Mr. Burneson stated that these calculations are not best made at the federal level, because there are so many variables, and plumbing varies substantially from house to house. One solution would be for water systems to calculate the appropriate flushing times for their communities.

Ms. Sparrow asked whether there were any standards based on the type of house, type of service line, etc. She asked that if there is so much uncertainty in the calculation, then how the Agency could propose an alternative sampling approach that would capture the LSL.

Mr. Burneson suggested that it is possible to develop guidance for homeowners to sample the LSL. He had thought that the question was more about how to calculate the right flushing time to avoid exposure of lead as a mitigation measure. He said that the Agency believes it will vary based on location, but that based on general guidance, systems should be able to come up with their own protocol.

Ms. Morales stated that a few more comments could be taken, but that the NDWAC needed to make a formal recommendation.

Ms. Godreau indicated that she understands there have been recent changes to what lead-free means. She also asked whether there was discussion about conducting the testing for lead at the distribution system, or at the plant when conducting LSL replacement.

Mr. Burneson stated that that has been something that has been put forward as a potential way to address this concern; however, small systems would not have the ability to do so. Also, getting something that is truly representative is difficult, but it has been an option that has been discussed.

Ms. Weintraub referenced the key questions under optimal corrosion control. She asked if there was any way to combine the required site visit with the assessment of optimal corrosion control.

Ms. Barr indicated that the annual site visit only applies to CWSs and non-transient non-community water systems (NTNCWSs). The optimal corrosion control applies to NCWSs, so the only overlap is for NTNCWSs. Schools could be captured by this. Mr. Burneson stated that Congress took action in the past several months to change the definition of lead free. Congress adopted that as of 2014, pipes and other materials must be less than 0.25% lead to now be referred to as lead free for potable water. The Agency believes that we must get lead out of materials, but there is the reality that a great majority of products still contain lead. Continuing to control the corrosivity of water is the focus of the Rule, and the question is whether this can be further optimized and improved.

Ms. Morales asked whether the NDWAC was ready to make recommendations to the Agency regarding the key questions for sample site selection criteria:

Do the current tiering criteria for lead accurately represent the highest risk sites? If not, what needs to change?

How should copper be addressed if there are tiering changes?

Ms. Sparrow stated that for both questions, the decision should be made based on statistics, and then written accordingly. The Council agreed with this recommendation.

#### Key Area #2: Lead Sampling Protocol at LSL Sites

Mr. Vincent asked if there was any research regarding whether there is a difference between the first draw, second draw, third draw, etc.

Ms. Barr stated that one study revealed that samples that captured the LSL contained statistically higher concentrations of lead than the others.

Mr. Vincent stated that if this was the case, then he would change the requirement to capture the LSL.

Ms. Weintraub agreed. She said that she would support the Council recommending a change. She further indicated that she was surprised to learn that there is flexibility. He stated that she thinks there should be set standards for each situation, e.g., if the house is set back 60 feet from the street, or second floor versus kitchen sink. He indicated that she thinks there should be more than one set of instructions.

Mr. Owen stated that he agreed, and in order to reach the goal, the sampling protocol should be different. However, there are other variables, such as differences in water chemistry and equilibrium. He suggested that it was worth discussing these issues with those focused on them. He said he would suggest leaving it to the SAB Drinking Water Committee to determine if it is possible.

Mr. Woolard indicated that there is a standard out there already, and that it is hard enough to get the customer to sample the first draw. He said that it is not realistic to think that the homeowner will be able to take more complex samples. He further stated that all kinds of complexity could be added to the sampling protocol, and you still would not get the result you are looking for.

Ms. Dougherty stated that she appreciated the feedback, and asked if anyone had specific recommendations on how the sampling protocol should be changed.

Mr. Woolard stated that he did not believe the extra layer of complexity needed for the more sophisticated techniques would provide more useful data.

Ms. Taylor agreed. She suggested that an improved protocol may be to collect a sequence of samples, which would increase the chances of a hit, at which time the utility could go out and re-sample.

Ms. Dougherty stated that what she was hearing is that the NDWAC agrees that the sampling protocols should be changed, but that it is not necessarily clear how they should change.

Ms. Sparrow agreed with Ms. Dougherty and suggested she would also add that if anything is changed it should be based on statistical data, which supports that the new protocol will add value.

Mr. Woolard agreed, and further stated that unless there is a data driven method to change the protocol, then it shouldn't be changed.

Ms. Weintraub disagreed, saying that the data being collected through the existing sampling protocol are wrong, and that any change would be an improvement.

Ms. Sparrow stated that she disagreed with Ms. Weintraub's statement.

Ms. Ward-Robinson indicated that what she was hearing from the discussion was that the homeowners shouldn't be those collecting the samples.

Ms. Taylor again stated that the protocol could start with a household sample with the first draw and time sequence, which would increase the chance of detection, and then this could be followed up with a utility sample.

Ms. Sparrow asked if there was a study suggesting that there was a statistically significant higher lead concentration in the LSL over the first draw.

Ms. Barr stated that there is a study showing that the samples that captured the LSL had higher levels of lead than the first draw.

Ms. Massey indicated that, based on the information that there is a definitive difference between first draw and LSL. Time would be better spent not expecting the customer to take the sample, and alternatively developing a protocol for the system to go out and collect the sample. She stated that she understood that there are different circumstances across the country, and guidance would need to be tailored as such describing how the utility could collect the best sample. She summarized that the only way the situation can be improved is by injecting site specific data and having the utility collect the sample.

Ms. Barr requested clarification on Ms. Massey's statements, and asked if she meant that the utilities should collect samples in the homes or if the utilities should conduct the calculations to determine a protocol for achieving the best representative samples for the homeowner to collect?

Ms. Massey stated that if the homeowner collects the samples, then at the least the utility should provide guidance on how to collect the samples.

Ms. Kennedy asked whether or not the onus was on the homeowner to collect the sample.

Ms. Barr stated that the utility asks for volunteers, and the homeowner has to volunteer.

Ms. Kennedy stated that she thought there was a flaw with this concept, especially in California and in disadvantaged communities. She asked what was typically done when

there was a language barrier. She indicated that she felt this approach placed an undue burden on disadvantaged communities.

Ms. Barr explained that the program was voluntary.

Ms. Kennedy asked what happened if there weren't any volunteers. She indicated that it would be difficult to get volunteers in a lot of the southern California communities that she works in.

Mr. Saddler asked whether there has been any new data since the changes to the Rule in 2007.

Ms. Barr indicated that the 2007 changes are just being implemented as of 2010. She suggested that there is good amount of data regarding lead levels in children, although it is hard to decipher whether the source is water, paint, etc. These data suggest that overall, lead levels have gone down significantly.

Mr. Saddler stated that it didn't make sense to him to modify something where the data have yet to be seen.

Ms. Sparrow stated that she believed the NDWAC agreed that the current method is imperfect at best, and it is not providing representative results. She further stated that she believed the NDWAC could agree that the method can be changed if there are supportive data. However, she did not feel that the NDWAC agreed as to what the proper method should be.

Ms. Dougherty indicated that the NDWAC's recommendation could not be held for the next meeting; if the NDWAC would like to provide a recommendation, then it needed to happen at this meeting. She stated that she interpreted Ms. Sparrow's statement to be that the NDWAC recognizes that the current sampling protocol is imperfect and significantly flawed and that EPA should look for new methods so long as they are better than the current approach.

Ms. Weintraub suggested that it is more than people improperly collecting samples, since in many situations the public is unable to implement the instructions to collect samples, e.g., in disadvantaged communities.

Ms. Morales stated that this issue needs to be front and center. Disadvantaged communities need to be at the heart of this discussion.

Ms. Kennedy stated that the Agency needs to ensure that disadvantaged communities are not burdened by this.

Ms. Dougherty indicated that what needs to be determined is whether corrosion control is working throughout the community.

Ms. Kennedy stated the population affected needs to be taken into consideration in order to make sure that disadvantaged communities are not disproportionately affected. She stated that anecdotally lead is found in higher proportions in children in disadvantaged communities. She further suggested that more research should be conducted in this area.

Ms. Dougherty stated that the Agency wants to ensure that sampling will confirm whether corrosion control is working across the community regardless of whether it is a disadvantaged community.

Ms. Godreau indicated that she didn't disagree with anything that had been said, but that the ease of implementation needs to be a part of this also.

Ms. Sparrow put to motion a vote that the Council make the following recommendations:

The current sampling system is imperfect; A new sampling system should be provided if proved to be better; Sampling needs to be representative of the entire system; and , It needs to be easy to implement.

Mr. Saddler provided a second motion. All were in favor, and none opposed.

### Key Area #3: Public Education for Copper

Mr. Diemer asked whether there were good data on the amount of copper leaching into the system, and how much?

Mr. Burneson stated that the predominant plumbing material is copper. He also indicated that there have been studies suggesting that it has been leaching into systems, although the frequency is not known. He stated that there is a lack of national data.

Mr. Diemer suggested that given the lack of information, it would be too confusing for the homeowner, and that the NDWAC should not recommend sending out public educational materials.

Ms. Godreau asked whether the public education applied to any new connection.

Mr. Burneson answered yes, and said that also, if the system could discern, then maybe only based on the type of pipes.

Mr. Diemer stated that utilities are not prepared, and that he doesn't think it is productive to go down that path.

Ms. Kennedy said that she didn't see a problem with at least educating new homeowners of what problems may exist. She stated that this could be seen as a disclosure, and that the utility doesn't have to say it is a problem, but that it could be a potential problem.

Ms. Morales stated that small systems already have enough burdens, and that it is not up to them to have to deal with materials used in new construction.

Ms. Kennedy clarified that she did not feel it had to be the utilities providing the education; it could be the developer.

Ms. Sparrow put to motion a vote that the Council recommends that educational materials should not be sent out. Mr. Diemer provided a second motion. Most were in favor; Ms. Taylor abstained.

#### Key Area #4: Measures to Ensure Optimal Corrosion Control Treatment

Mr. Owen asked for clarification that the current Rule does not require systems to re-optimize. He stated that based on others' comments earlier regarding the system complexities, there could be a worse situation after the system re-optimizes. EPA could recommend that utilities re-evaluate their optimization approach, but they shouldn't be required to change. The second element is being more prescriptive on evaluating water quality parameters. If we put those into a regulation, systems are so unique, it is going to drive non-optimal situations.

Ms. Dougherty stated that if a system exceeds the AL, then public education is needed as well as LSL replacement. What happens in reality is that the systems need to figure out how to re-optimize so that they don't have to do LSL replacement. She stated that the NDWAC would be discussing LSL replacement shortly, and that this discussion goes with that discussion. She said that if LSL replacement requirements change, then there is nothing but public education for this requirement. She stated that it is important to look at these two issues together.

Ms. Barr further stated that as she mentioned earlier, any changes have to ensure that there is at least the same level of public health protection.

Ms. Godreau suggested that the regulations could maintain the six month monitoring requirement.

Ms. Barr stated that this is true, but it is not the same as replacing 1/7 of the service line.

Ms. Weintraub indicated that everyone is ideally starting from a default of what they think is optimum corrosion control. The next step is to assess this, but she suggested that she agreed with Mr. Owen that it doesn't need to be called re-optimization, depending on whether it is called prescriptive or not. She stated that she didn't think it was useful for EPA to just recommend that the pH should be X or additive X needs to go in at a certain level. She suggested that if there was a way to change the guidance, she would support that.

Ms. Sparrow explained that treatment technologies change so quickly, and she didn't think they should be based on EPA guidance, because this gets stale quickly.

Ms. Barr stated that the Rules do not include guidance and vice versa.

Ms. Sparrow indicated that she didn't like the word re-optimize.

Mr. Owen suggested the word re-evaluation.

Mr. Woolard asked what would constitute a re-evaluation.

Mr. Owen suggested leaving this up to EPA.

Ms. Weintraub put to motion a vote that the Council recommend that EPA includes a requirement for systems to re-evaluate corrosion control treatment after an AL exceedence.

Mr. Vincent provided a second motion. All were in favor, and none opposed.

#### Key Area #5: LSL Replacement Requirements

Ms. Weintraub put to motion a vote that the Council recommend that EPA eliminate partial LSL replacement in favor of full LSL replacement. Ms. Kennedy provided a second motion.

Mr. Diemer asked what was meant by "in favor of full replacement." He suggested that the current system is set up that way, because the portion beyond the property line is the homeowner's responsibility. He asked that if there is full replacement, then what is the utility's responsibility, and what is the homeowner's responsibility.

Ms. Barr provided a few ideas of how this could be implemented. One approach was to change the definition of the word "control," so that the utility would control the portion now controlled by the homeowner, and then require the utility to do full LSL replacement. This was proposed in the past, but was defeated as a result of a legal challenge; however, it was not defeated based on substance, it was procedural. Another approach would be to find people who are willing to pay for full LSL replacement.

Ms. Weintraub stated that she would like to revise her original motion to state that partial LSLs should not be allowed. Secondly, she stated that EPA should write the Rule so that it incentivizes full replacement.

Mr. Diemer agreed that it should be all or nothing, but that the NDWAC should not underestimate the difficulty of full LSL replacement, particularly requiring homeowners to pay for replacement. He suggested that if it were a voluntary program, that would work a lot better.

Mr. Woolard stated that if the utility is required to conduct full LSL replacement, then essentially the definition of what the utility owns is being changed. This would offer an additional host of issues, and bigger problems than the one at hand. However, if it is allowed to be voluntary, then there is the problem of what percentage needs to be replaced each year. It could be very

expensive to homeowners and/or a significant cost to the utilities. If there is a set percentage, then there needs to be allowances for when the utility cannot reach this. There should be an incentive to get there, but utilities shouldn't be punished if they do not reach it.

Ms. Barr clarified that the definition would not need to be changed regarding what utilities own, but instead what they control.

Ms. Sparrow suggested that utilities cannot control what they do not own. She further indicated that there are not sufficient data related to partial LSL replacement and spikes in lead levels. She suggested that there needs to be better data before EPA and NDWAC can make decisions. She stated that she didn't think anyone should be required to pay for the portion of the LSL replacement that is within the homeowner's property. It is not the actual LSL replacement that is the most costly; it is replacing the landscaping, driveways, etc. She further stated that she didn't think the definition of what a utility owns should be changed. She said this could get very complicated very fast.

Ms. Barr stated that one comment she would like to make is that getting volunteers to conduct the sampling is one of the biggest problems. She said that the Agency has made serious efforts in this area.

Ms. Taylor suggested that she saw this as potentially being an EJ issue in the absence of reimbursing homeowners to replace their portion of the LSL.

Ms. Dougherty stated that the SRF could help fund this.

Ms. Kennedy stated that she had done this successfully with disadvantaged communities, and that the SRF will pay for the connection fee.

Ms. Dougherty indicated that the State has to determine that this is a priority.

Ms. Kennedy stated that she could only speak from her experiences in California, but that EPA Region 9 and the State of California bend over backwards to help with disadvantaged communities.

Ms. St. Martin asked that if there is a change to what is owned by the utility, how that would relate to nexus with the Clean Water Act (CWA).

Ms. Dougherty mentioned that this was a good point.

Ms. Weintraub stated that the Rule could be developed in a way so that it encourages full LSL replacement, and if the homeowner declines to do their portion of the LSL replacement, that there is some way that they are made aware of the increased risk, as well as mitigation measures they can take, e.g., flushing. The only change she recommended was a mandatory approach for addressing increased homeowner risk.

Ms. Sparrow suggested that the data do not exist to prove that the full and/or partial LSL replacement helps the homeowner, but we're talking about a lot of financial implications, especially for those who can't afford the replacement, e.g., those in disadvantaged communities.

Ms. Barr clarified that the data do exist, but that they are sparse. She quoted language from the SAB Evaluation of the Effectiveness of Partial Lead Service Line Replacements, stating that in studies pertaining to comparisons between full and partial LSL replacements, the evaluation periods have been too short to fully assess differential reductions in lead drinking water levels. Nevertheless, for the time periods reported in the studies, in water distribution systems optimized for corrosion control, full LSL replacement has been shown to be effective and partial LSL replacement has not been shown to be effective in reducing drinking water lead levels. Both full and partial LSL replacement generally result in elevated lead levels for a variable period of time after replacement, but the duration and magnitude of the elevations are generally greater with partial LSL replacement than with full LSL replacement.

Mr. Vincent stated that he did not care for the word encourage as part of the recommendation, but that he didn't have an alternative.

Ms. Sparrow asked who specifically is being encouraged to replace the LSL on the homeowner's property. It could be the homeowner that owns the property or it could be all of the homeowners as part of their fees toward the water system.

Ms. Barr suggested the one homeowner, and then the System can apply for SRF funding.

Ms. Sparrow asked, regarding the motion as proposed right now, what happens to partial LSL replacement.

Ms. Morales suggested that if partial LSL replacement remains as an option, it should be the responsibility of the utility to educate the homeowner.

Ms. Weintraub suggested that full LSL replacement should be required unless the utility cannot meet the 7% requirement. However, she wasn't sure how this could be implemented. She suggested that one option could be for the regulations to state that if the utility is able to find 5% to do the full LSL replacement, then there is a compliance incentive. She noted that this could have implications, because then you may be setting up a socioeconomic justice issue, because only those homeowners that have the resources to do the replacement would actually be included.

Mr. Owen stated that EPA has been looking at a lot of data to help them think through this issue, and he didn't know if he had enough information to make a statement. He said that it didn't sound like partial LSL replacement is a good idea.

Mr. Owen made a motion that the Council recommend that EPA should look at the data and decide whether partial LSL replacement has any benefits, and if it does not then it should not be included in the Rule.

Ms. Barr stated that the data currently available only looks at the time right after the replacement has taken place. It demonstrates a spike in concentration, and then a decrease. There are no data for what happens years after a replacement.

Ms. Dougherty suggested that she had two thoughts for the NDWAC. The first option could be that the NDWAC decides to let EPA look at what the SAB recommends. The second option could be that the NDWAC reviews what the SAB recommends, and then checks in with EPA off-cycle as soon as possible regarding any recommendations based on the SAB report. She stated that the NDWAC did not have to weigh in on this now, and that it may make sense to have the SAB look at the data and use what they recommend as a basis for the NDWAC's decision.

Ms. Morales asked if the NDWAC had a different approach now based on what Ms. Dougherty has said.

Mr. Owen withdrew his motion.

Mr. Saddler suggested that the NDWAC wait until the next meeting.

Ms. Barr stated that six months was too long, and that any review and recommendations would need to be done off-cycle.

Ms. Dougherty stated that the NDWAC did not need a formal motion for this decision; they could say that they would like to wait to have information from the SAB before making a recommendation and that any recommendations will be made off-cycle as soon as they are able to review the SAB report.

Mr. Vincent stated that the NDWAC is interested in this issue, but will wait to hear from the SAB.

#### *SDWA COMMUNICATION*

*Ronald Bergman, Acting Deputy Director, OGWDW*

Mr. Bergman provided an overview of SDWA communication, and consumer confidence reports (CCRs). He stated that the Rule where EPA received the most comments was the CCR Rule. He suggested that he would like the NDWAC's feedback on how EPA should review it. He suggested that starting in October, EPA should agree to a procedure for the review.

He stated that CCRs are the centerpiece of transparency and accountability for the Water program. He said the annual report was delivered to each consumer of a CWS starting in 1999. The CCR goal is to provide the consumer with local water quality information that allows for informed choices and increased dialogue between water systems and their customers. Content requirements include: water system information; sources of water; potential sources of contamination; detected contaminants; violation information; and educational information. He stated that the original look and feel of the CCRs were developed with support from the NDWAC. Under the CCR Retrospective Review Draft Plan, and 12-month review period, which

starts in October 2011, EPA will look for opportunities to improve the effectiveness of communicating drinking water information to the public, while lowering the burden of water systems and states.

There have been a fair amount of systems complaining that the CCRs don't provide the value that EPA has intended. Other systems have stated that they think that the CCRs are an unnecessary burden. What is indisputable is that the way people receive information today is very different from what it was 10 years ago. For the revisions, EPA wants to consider ideas for how to provide consumers with a better understanding of what is in the water, where it comes from, and connect them to the source of their water.

Mr. Bergman summarized the SDWA and CCR language, including waivers. He also discussed the CCR Review chronology. He then summarized some of the public comments on the CCR. Some members of the public felt that electronic delivery methods would reduce cost and burden on systems. Some stated that State certification puts too much of a burden on states. Others stated that CCR and Tier 3 PN requirements are repetitive. Many members stated that the requirement for using whole numbers in the CCRs is burdensome on small water utilities and misleads the public.

The CCR Retrospective Review Draft Plan includes a comparison of CCR regulation and the SDWA, which has been completed, as well as public meetings, an alternative delivery pilot testing in partnership with AWWA and ASDWA, a response to public comments, and an evaluation of findings. Additional review considerations include environmental justice impacts, environmental steward promotion (CCR "greening"), protecting consumer access to information from shift-of-burden, an examination of whether alternative delivery would improve readership, and primacy agency and system management of alternative delivery methods.

Mr. Bergman concluded with the following NDWAC discussion questions:

Proposed review process?

o Thoughts on additional information needed to support EPA's review?

How can Rule implementation make use of new technology?

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How best to use pilot study findings?

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How to characterize environmental justice impacts?

*Discussion:*

The discussion for SDWA Communication was conducted on Day 2, and is included in the Friday, July 22nd summary.

**OPEN PUBLIC COMMENTS**

Larry Ladd, Community Advisory Group for Aerojet Superfund Site Issues, and Andria Ventura, Clean Water Action (CWA), made public comments on behalf of their respective organizations.

**Larry Ladd** introduced himself and his organization, Community Advisory Group for Aerojet Superfund Site Issues. He discussed issues related to perchlorate. He explained how the contaminant emerges, and how it is used in the production of rockets, rocket fuel and fireworks. He described how perchlorate leached from Aerojet's California-based missile plant and led to a toxic plume containing perchlorate contaminating groundwater. He discussed studies being done on the population impacted by the plume and the significantly high thyroid cancer rates. He said that they are now working on how to treat the contaminant. He said that they meet with regulators on a monthly basis to discuss these issues. He thanked EPA for taking this issue seriously and for making the determination to regulate perchlorate.

**Andria Ventura** introduced herself and her organization, CWA. She explained that CWA is a national environmental advocacy organization, and that there are about 1,000 members in the San Francisco Bay area. She stated that a big part of CWA's mission is to address local community water issues. She stated that, surprisingly enough, on any given day tens of thousands of Californians do not have access to clean drinking water. She mentioned that this is particularly important in rural communities with small systems that do not have a substantial customer base or infrastructure system. Consolidation of these water systems is a possible solution. She indicated that EPA is behind this concept, but that the State of California is not optimizing this as a strategy. She said that she would really urge EPA to promote consolidation to the states. She stated that these communities are under-represented. She indicated that the other issue she wanted to discuss is related to what Mr. Ladd talked about. She said that she works on drinking water standards, and hexavalent chromium and perchlorate are two contaminants of high concern. She said that she applauds that EPA is looking to regulate them, and that she urged EPA to move forward with regulating these contaminants. She said that she understands that this is hard, but that these are serious contaminants that affect real people. She stated that she knows there will be resistance, but that CWA will support this decision with its one million members. She urged EPA to make the most stringent standards for these contaminants as possible. She stated that a MCLG of 0.02 parts per billion is necessary for perchlorate in order to protect public health.

#### THE SFPUC'S WATER SECURITY INITIATIVE CONTAMINANT WARNING SYSTEM – PILOT PROJECT

**Manouchehr Boozarpour**, San Francisco Public Utilities Commission (SFPUC), Water Quality Division

**June Weintraub**, Senior Epidemiologist, San Francisco Department of Public Health, San Francisco, California

**Mr. Boozarpour** introduced the SFPUC Water Security Initiative and EPA Security Grant Pilot Project. He gave some background on the SFPUC, and then discussed the EPA Water Security Grant Project. San Francisco was selected through a competitive selection process by EPA for

the Water Security Initiative (WSi) program. The purpose of the project was to implement a pilot water security project addressing prevention, monitoring, and response elements.

**Mr. Boozarpour** noted that the grant project complements the existing SFPUC efforts. The SFPUC existing water security program was formally initiated in 2004. Overall over \$2 million have been spent, excluding physical security enhancements. On-line monitoring instruments have been operational since 2007.

The project focuses on the City of San Francisco, and addresses six critical components: on-line water quality monitoring, sampling and analysis, consumer complaint surveillance, public health surveillance, enhanced security monitoring, and consequence management. The project started in June 2008, and the plan was based on performing the design and installation in the first year, and two years for operation, data collection, and evaluation. An additional six months was proposed for report preparation and close out. The schedule was extended by about six months to account for equipment purchasing delays. He suggested that he anticipated the project to be completed by the middle of 2012.

Mr. Boozarpour then went over each of the project components, discussing the objective, details and status of each. Ms. Weintraub provided details on the public health surveillance component.

Mr. Boozarpour summarized some of the lessons learned from the project. He stated that because of the aggressive schedule they were working under, they decided to reduce the scope to available technologies that had been around for awhile. He said another major issue was related to information sharing and protection. He said that they wanted to share a lot of their information through the project, but they had to be careful, because it was sensitive.

The project has achieved numerous successes. Despite the aggressive schedule, it has stayed very close to the schedule as well as the budget. The project included implementation of numerous useful water security tools. Also, the lessons learned from the project will be very useful for other utilities and for EPA in determining how to evolve the WSi.

*Discussion:*

Mr. Owen stated that the project contained many components, and asked whether an integrated platform was used.

Mr. Boozarpour indicated that this was the goal, and that they are working towards that.

Mr. Owen asked with regard to the instrument and sensitivity, what is the best “canary in the coal mine.”

Mr. Boozarpour stated that based on the study, so far the best cost/benefit by far is with consumer complaint monitoring.

Ms. Weintraub added that they focused on the over-the-counter drug sales. She stated that it was almost explicit that this needed to be included. She said that they didn't include poison control

lines, but that in Cincinnati, they found that to be the most effective. She indicated that this goes hand in hand with consumer complaints, because it is a direct link to water quality complaints. It doesn't require a delay; it begins immediately with the affected individual making the phone call.

Ms. Dougherty asked, following up on dual use/dual benefits, whether any of the components were helping with day-to-day management of the system.

Mr. Boozarpour stated that yes, especially the online water quality monitoring. He said that they hadn't focused on that very much, and that a lot of that is surprising to them. They are monitoring the water every second, and it has been very eye opening. This opens a whole new knowledge base.

Mr. Zarate-Bermudez referenced the 311 consumer complaint call-in system. He stated that consumer complaints can be very helpful to surveillance, and asked how this system is working.

Mr. Boozarpour stated that they haven't gotten a huge number of complaints, and that most of them are related to dirty water due to flushing, or milky water. He explained that one of the treatment plants has a high flow rate, and entraps air causing milky water in the system. There are sometimes complaints regarding pipe breaks. He indicated that interestingly enough, the system has been in place for one and one-half months, and they expected to get a lot of calls, but they haven't. He suggested that they want to see which route of communication is the best, e.g., radio, T.V., telephone, etc. He stated that this is the next step of the campaign. So far, even with the billboards and newspaper advertisements of the 311 system, they still haven't seen much use. However, he stated that they do receive a lot of compliments on the billboards and other advertisements by email.

Mr. Vincent asked if the 311 system was available 24 hours per day, seven days per week.

Mr. Boozarpour answered that yes it was, and that they also have water quality inspectors on 24 hours per day, seven days per week.

Meeting Summary: Friday, July 22, 2011

#### CONTINUATION OF SDWA COMMUNICATION

Ronald Bergman, Acting Deputy Director, OGWDW

Mr. Bergman continued the discussion from Thursday. To recap, he summarized the Retrospective Review Process. Starting in October, there will be a 12-month review process with stakeholders regarding the CCRs to determine what is or isn't working. Discussions with states and utilities indicate that there is an expressed burden associated with developing the CCRs and the cost of distribution. AWWA and ASDWA were helpful in facilitating the discussion.

Mr. Bergman asked the Council what kinds of things EPA should be asking and who they should be trying to reach.

*Discussion:*

Mr. Woolard asked if the fundamental questions are focused on deliverables, or on format and content.

Mr. Bergman responded that the main issue that has been raised to EPA is that CCRs should not be required. Others focused on the time it requires to put them together and the cost of delivery. There is a concern that customers are not reading them; some of this relates to form and content. He indicated that he would take comments on anything, but noted that EPA went through a two-year process with a NDWAC group and other consultation on content. At the next NDWAC meeting he expects to talk about posting data on the web, which would be the same information that is in the CCR. He suggested that his preference would be to not open up the debate on content right now.

Ms. Weintraub asked if the AWWA pilot study was focused solely on delivery methods.

Mr. Bergman responded that it focused on email delivery.

Ms. Weintraub stated that electronic delivery should not be the only method. EPA needs to consider language barriers and asked if that issue would be included in the pilot.

Mr. Bergman responded that the scope of the review is part of today's discussion. The regulations require water systems to identify any non-native speaking populations in their service area and they are required to put a paragraph in the report in the appropriate language.

Ms. Weintraub stated that the Public Utilities Commission (PUC) translates the CCR in multiple languages. It makes the CCR a cumbersome document for those who do not care about the different languages, but it is really helpful for those that do. Further, she suggested that an alternative delivery method is important, but that it needs to identify who will get missed. Besides content, she states format is a way to address why people are not reading CCRs. They can look complicated and uninteresting. In some ways this is a tertiary problem. Utilities want to be able to communicate the safety of their water effectively. They have already come to an agreement what needs to be out there, and that's important.

Mr. Bergman stated that the fundamental issue is to try to identify why the CCRs are not being read. He indicated that he is looking for comments on how to make this an effective tool.

Ms. Kennedy stated that Ms. Weintraub had made some valid points. She does not dispute the content; it is very valuable. However, she noted that she works in the Water Sector and often does not read the CCR she receives from her local utility. She does feel there are different ways to send it. Particularly in California, information needs to be in different language. Utilities need to know their service areas. This is especially important with EJ; it is important to make sure that the delivery is in a way that disadvantaged communities receive it. Most do not have access to the internet; therefore, the website is not the most effective way. She realized that it is cumbersome and costs money, but that these people invest in utilities also and they are owed

information in a way that they can understand. She suggested that if she is not reading it, then the average person isn't reading it.

Mr. Zarate-Bermudez asked if there were data to support that CCRs are not being read. He also asked if they have an email delivery, will it be read and how many customers have provided an email address. He felt that Ms. Kennedy and Ms. Weintraub made good points to address those that do not have access to the internet.

Mr. Bergman responded that the systems in the pilot have e-billing and they would send the CCR with the e-bill. The challenge is how to track what is being sent through e-billing and through the mail. Questions relate to how much time is associated with each and is it saving them money on postage.

Mr. Bergman then asked the Counsel how they define success in the CCR. He felt that looking for universal reading is a pretty high bar and asked if there were any thoughts on how to set measures of success. Alternatively, simply the fact that the water system goes through the process to pull the data and put it in one place is a measure of success. There are two ends to the spectrum.

Ms. Massey asked about the notification requirement. She asked if there is a requirement as to the level of technical data that should be included in the CCR or could there be a quantitative statement that could be sent with an e-statement. Examples would be "your water system did or did not have a water quality issue" and "your water system did or did not take corrective action." It could then direct the customer to a website for more information or to ask for more information to be mailed.

Mr. Bergman responded that many CCRs begin with such a statement. In the first round of CCRs, most utilities stated "your water is safe." Clean Water Action did a study of these CCRs and complained of these types of statements in their review. CCR requires other data, including a list of contaminants, the levels, how they stack up next to the national standards, and corrective actions, if done.

Ms. St. Martin stated that as they talk about delivery methods, they should be flexible enough to meet new changes in technology so they do not have to keep changing legislation to add new methods. Secondly, no matter how many CCRs go out, only one quarter of them are read. Those are the people that will reach out and ask questions to hold the utility accountable. She suggested that reaching this core group of customers could be considered a measure of success.

Ms. Weintraub asked for clarification on how the term customer is defined. Her organization interprets it as anyone using the water. It is not just the rate payer, but also renters.

Mr. Bergman replied that the statute defines customer as the bill payer.

Mr. Diemer stated that it is the mailing address for the water service.

Ms. Morales responded that it is who receives the bill, which is not necessarily the end user.

Ms. Weintraub suggested that the Council figure out how to address this issue universally. Some of these EJ issues are related to renters versus rate payers. She then asked if the waiver situation for systems serving 10,000 or fewer customers could be clarified.

Mr. Bergman stated that if a state makes such a determination, those systems serving 10,000 or fewer customers do not have to mail CCRs. Systems from 501 to 10,000 customers do have to actively announce that the CCR is available.

Ms. Weintraub stated that for follow-up, this is something that should be addressed. The CCR Rule already does not reach small system users and she expressed a concern that they will not receive electronic delivery. Requiring electronic delivery will not impact those that are not receiving the CCR in the first place.

Mr. Bergman stated that 20% of CWSs doing CCRs are serving 40 homes or less. If they get a waiver, they can put the CCR in a central location that is not too far away from customers.

Ms. Weintraub stated that maybe that is something the pilot can investigate: what is the actual population they are talking about. There may be some communities that go to a local location, like a recreation center, rather than reading it in the mail.

Mr. Bergman responded that this is one of his questions to the Council: what questions should we be trying to answer and where should we go to try to answer them.

Ms. Morales stated that the population in general is a challenge. You cannot get people to read something they are not interested in reading. She noted that many small systems have limited resources. If the state provides a template, they are just going to fill it out and at the end of the day it is more about compliance. She asked if utilities will be comfortable translating CCRs for customers. It is not necessarily content, but getting them to read it and she is not sure how to help this situation. She asked if they are trying to limit the burden of mailing by sending them electronically.

Ms. Ward-Robinson asked what is the target or goal: to define success based on compliance or on whether or not the customer will read it. It is about trust between customer and utility. This has very serious implications. Issues are followed, but misunderstood. She provided an example of what she looks for in her mail, focusing on the summary and what is up front, and if there is any new information, that is given. She suggested a similar approach for the CCRs with technical information categorized: issues identified and listed against the national standard/level, pass/fail, and a summary statement. For those that would like more information, she suggested providing them with a number to call or a website to view. She thinks that in order to get to the style, they have to be clear about what they are trying to do and how to categorize information. It cannot be just a question of burden. It's not that simple.

Mr. Bergman paraphrased Ms. Ward-Robinson's question: just because they have not heard from customers, doesn't mean that the CCRs are not being read. EPA's comments during the

Retrospective Review indicate that they believe that CCRs are not being read by customers. They are trying to figure out a review process to find out the validity of that statement.

Ms. Ward-Robinson suggested a sampling of customers to test validity, maybe a cross-section of customers. A survey can be put in the bill with incentives to respond and track responses as indicators of whether or not they are being read. Questions need to be subjective as well, e.g., are you reading the CCR, and if not, why not.

Ms. Godreau stated that they first need to remember the SDWA and public health requirements. Statutes are statutes. She states that this is a diversion of resources to a program and Rule that address a national apathy about their drinking water. You are not going to get most people to read the CCR because they do not need it. There are public notification requirements to notify if there is a problem. EPA should consider if CCR should address all Tier 3 issues and not just issues within the last 12 months. On the green issue, EPA should consider allowing systems to put notification in billing. Allow large systems to put something in every bill stating that information is available online. It might be more meaningful rather than once a year and it plugs customers into the process. She also feels they need a way to find out whether there is a benefit to wide-distribution through focus groups or surveys. They do need to have some kind of way to measure success, but surveys may have the same non-response.

Mr. Woolard believes that it is a good document to communicate with customers. The requirements for the minimum amount of information are appropriate and there is enough flexibility if a utility wants to expand on this. His utility sent out 55,000 and got five calls. This does not mean that only five read it, just that five took the time to call. He thinks it is an effective way to communicate. The content works. It is a question of making delivery more effective. It needs to have more flexibility for different means of delivery but utilities should not be required to maintain multiple databases, such as email, Facebook, or mailing addresses. There needs to be some flexibility to communicate in the future because mailing is not the future.

Ms. Sparrow stated that it sounds like this discussion is about marketing and marketing research. Marketing researchers know the best way to communicate, whether through bill stuffers or calls. Having the right information and improving the packaging is also about marketing. For the average reader, the standard language can be alarming. Marketers may want to pull back, and health experts want to push, so there may be some negotiating, but both parties should be involved.

Ms. Weintraub suggested the pilot study should do a comparison of distributing electronically to one group, and paper to another group or same group. The comparison could be a reference point.

Ms. St. Martin stated that if the requirement is the actual numerical data, then you have to let the public know that up-front, e.g. "Your water did or did not have quality issues last year, and the utility did or did not address them." If they want to read further, provide a location and/or contact where more information can be found.

Ms. Kennedy state that she appreciated Ms. Sparrow's comments on marketing, but also wanted to point out that the majority of marketing firms do not understand how to market to disadvantaged communities. The idea of handing this over to a marketing company without public input is not feasible.

Ms. Morales asked Mr. Bergman if he had enough direction from the Council.

Mr. Bergman stated that EPA would come back at the next NDWAC meeting to report on progress, and request more information if needed at that time.

## HUMAN COSTS OF NITRATE-CONTAMINATED DRINKING WATER IN THE SAN JOAQUIN VALLEY

Peter Gleick, President, Pacific Institute  
Alexis Strauss, Director, Water Division, Region 9

Ms. Strauss introduced Mr. Gleick to the Council. They were fortunate to have him in the San Francisco Bay Area. He is able to share his thoughtful analysis and recommendations on water quality and water supply. His work on Central Valley issues, such as agricultural water uses and efficiency has had a profound influence.

Mr. Gleick introduced the Pacific Institute (PI) as an independent non-profit research institute that does science-based work but has a policy side also. About 90% of their work is on water, 50% of which is international. Mr. Gleick summarized some of PI's work, which included Western issues, water availability, and climate change. Last year PI won an EPA Region 9 excellence award.

Mr. Gleick explained that the presentation focuses on nitrate contamination in central California, specifically the San Joaquin Valley (SJV). The study had many authors and a number of groups working on it, though Mr. Gleick noted that he was not the author. This was a small study that did not look at how much contamination exists, but at the economic costs to communities exposed to nitrate-contaminated drinking water. The focus was on nitrate because concentrations are persistently rising in the Central Valley. Groundwater use is not monitored very well, but some wells are monitored and monitoring results show a very steady increase in nitrate concentration. Levels are heading toward the MCL limit. While the average has not exceeded state and federal standards, it is rising.

Mr. Gleick continued by stating that significant human sources of nitrate contamination are dairy and animal food industries as well as nonpoint source pollution from fertilizers, which is a problem throughout the US. In the SJV, most are using groundwater for their drinking water. It is home to 10% of the state's population but has two thirds of the population that are served by water systems that exceed water quality standards. It also contains the majority of the state's agriculture. Further, mapping of domestic wells contaminated with high levels of nitrate in the Valley demonstrate an EJ issue.

From the regulatory perspective, Mr. Gleick stated that there have been a series of studies stating that nitrate is a priority for California. Water quality waivers for agriculture exclude groundwater at the regional level and regional water boards issuing the waivers continue to be a challenge.

Mr. Gleick noted that researchers looked at household water users and their perception of water contamination. The overall study goals were to:

Get a perspective on household water users' actions to avoid nitrate-contaminated water, their perception of water quality, and their means of obtaining water quality information;

·  
Evaluate costs to households for water service, purchasing water from alternative sources, and treating tap water;

·  
Evaluate costs of existing and proposed measures by CWSs to mitigate contamination; and

·  
Facilitate a community-based research process to involve affected water users in setting goals, devising methods, interpreting results, and developing recommendations.

Mr. Gleick stated that the study documented household costs and system level costs, considering the kinds of projects being proposed to deal with nitrate contamination. To evaluate the household costs, a small, focused survey attempted to talk to every household. They looked at three or four of the poorest communities with the worst water quality. Researchers found that not all of the population understood that the water was not safe. Despite the mailed notices and television reports, 30% of the population did not understand or believe that their water was not safe. Less than half of the population knew that the problem was nitrate.

Mr. Gleick continued by stating that the study also looked at the source of water used for drinking and cooking. This was an important distinction. Research found that more people surveyed did not use contaminated water for drinking, but did not understand that they could be affected by nitrate contaminated water used for cooking.

Additional findings were associated with the actions that were undertaken to avoid exposure. Some used alternative sources of water (such as vended or bottled water), others used manipulated tap water (boiled, frozen, purified, letting the water run before using, etc.), and a small number of people used reverse osmosis. Some people thought that if they boiled the water, it would remove the nitrate, but this is not the case. Another indicator of economic impact is the amount of income spent on trying to have safe drinking water. EPA recommends 1.5% of median household income. One household in the survey was spending 4.9% of their household income. Those spending the greatest percentages were found to be living in the poorer communities.

Findings of the system level cost analysis indicated that it is unknown how many communities or people are drinking nitrate contaminated water. There is a sense of where they might be, but the extent of the problem is not known. There are 100 systems in the SJV with priority needs for improvement related to nitrate contamination. Part of a much bigger problem is that most are in the smaller systems that serve less than 1,000. These system operators do not have the economic

resources to address water quality problems. Therefore, researchers asked if consolidating smaller systems with the larger systems will address the costs of running systems. In California consolidation is happening slowly.

It was estimated that the average cost for developing a water system was \$1 million. To address nitrate and other water quality issues more broadly would cost an estimated \$1.5 million. In summary, a broad estimate for addressing nitrate issue in the SJV is \$150 million. Funding is a problem and many of these systems have known for a long time that nitrate levels are too high. Communities were notified five to six years ago. Residents have no recourse and continue to drink water with high concentrations of nitrate. Regulators know there is a problem, but because of limited financial resources, the issue has not been adequately addressed.

There were five major conclusions of the study. First, residents are at high risk of health problems resulting from nitrate exposure. Second, the average cost of water for households exceeds affordability standards and adds substantial economic burden. Third, the health and economic burden disproportionately impacts low-income households and Spanish-speaking residents. Fourth, groundwater nitrate levels are increasing. Finally, public funding for nitrate mitigation in CWSs is inadequate and projects funded may not be providing sustainable solutions.

The study also recommends new or revised policies. There should be more detailed studies in a wider area in more communities. Nitrate-affected communities need to be well-informed about their water quality and appropriate measures to protect their health. There needs to be sufficient and targeted funding for short and long term solutions to ensure that drinking water is safe. Political barriers need to be removed in order to consolidate small CWSs. Finally, sources of contamination need to be prioritized to reduce current exposure and prevent new contamination.

The study has also identified directions for further research. The impact of existing water-quality notification systems on water-user awareness and behavior should be assessed. An epidemiological study on the health effects of nitrate exposure in the SJV should be conducted. There should be a more comprehensive economic study of the costs of nitrate contamination. Finally, the study suggests a review of effects on groundwater quality of nitrate source control efforts in California.

Mr. Gleick concluded his presentation by acknowledging the many partners and funders associated with the study as well as the technical reviewers.

#### *Discussion:*

Ms. Morales thanked Mr. Gleick for a wonderful presentation. She asked if the costs presented are capital infrastructure costs or whether they include operating costs as well.

Mr. Gleick responded that they were primarily capital costs. Operating costs are a long-term problem. He noted that people in general, even in low income communities, are willing to pay more for quality drinking water.

Ms. Morales then asked if he had information on the average depth of the wells. He had mentioned that some do not have nitrate contamination and was this because of different depths.

Mr. Gleick stated that they have good information on all wells monitored. Most are more shallow, but not all of them. There are good mapping efforts to understand nitrate concentration contours and determine where nitrate concentrations are more severe. It is possible to have two wells next to each other with one contaminated and the other not. He stated that sometimes it is a depth issue, but sometimes it is not.

Ms. Kennedy stated that they did a very modest survey similar to the one he presented in the Santa Ana Watershed. They came to similar conclusions regarding bottled water. There are a lot of myths in the community. They don't worry about water supply. She stated that they were fortunate to not have a drinking water issue, but in the watershed, the runoff from the septic tanks is creating a water quality issue. Children are running through raw sewage. She asked whether this issue has been investigated. She said that nitrate is not a problem in the Santa Ana Watershed, but that surface runoff is creating an equal problem.

Mr. Gleick stated that nitrate contamination has many sources, e.g., septic systems, animal feeding, inorganic fertilizers, etc. Septic systems are important. He stated that what is unknown is the relative contribution of those different sources. In their study, it varied throughout the Valley. It would be great to do a detailed source analysis to know which source dominates.

Mr. Saddler commented on that there is little regulation regarding private wells and ranches. He asked how much of the study dealt with private wells.

Mr. Gleick replied that the study did not address that issue. He stated that the PI does a lot of work in California, and one of the problems is how California manages groundwater withdrawals. Part of the problem is surface water runoff, but also how groundwater is used and recharged. He stated that there is an enormous overdraft of water. The State is not using groundwater in a sustainable way, and over-usage contributes to contamination.

Ms. Weintraub thanked Mr. Gleick for sharing his work. As she was reading the report, she was trying to think about the health implication of nitrate, as an indicator similar to coliform. She stated that it is known that agriculture is a source. She asked whether communities are also measuring for pesticides, fertilizers, and bacteria, and what his thoughts are about using nitrate as an indicator of this broader problem. She stated that these communities may have dietary sources of nitrate that far exceed drinking water consumption.

Mr. Gleick replied that he did not know the answer to the second question; he had not thought about the nutrition piece. The first question is a great one. Nitrate is an indicator to some degree. It is one of many water quality problems. He said that they measure more than just nitrate. All of the communities are trying to measure for all regulated contaminants. When there are high levels of nitrate, you have other contaminant concerns. He said he didn't mean to minimize other issues, but in these communities, the biggest concern is nitrate, and it is an indicator of a bigger set of problems. If nitrate is addressed without the others, that would be a mistake.

Ms. Weintraub asked that if someone could clarify how frequently small systems test for pesticides.

Ms. Morales responded that VOCs are tested annually.

Mr. Diemer stated that his question was related to agriculture waivers and the problems with respect to impacts on surface water. Waivers do not require monitoring. Mr. Diemer asked if Mr. Gleick could speak to waivers and their impact on obtaining data and what can be done about this issue.

Mr. Gleick stated that he did not know much about the agriculture waiver system, but there is pressure to change the system.

Ms. Clary stated that the Central Valley Water Board will include groundwater monitoring, but they have not decided what level it will be. The agricultural businesses are not comfortable with having information available. It is yet to be determined how the public will receive this information.

Mr. Diemer stated it has been a struggle to get non-point sources to conduct monitoring. It seems that a little more focus in that area could get the data needed.

Ms. Pajarillo stated that in addition to the conditional agriculture waiver, the sheer cost of monitoring prevents data collection. The dairy industry is now coming up with a representative groundwater monitoring plan.

Mr. Gleick indicated that small CWSs do not have the funds to take care of these water quality issues. The technology can be put in place, but there are also political barriers. This plays out all over the country for small systems. Often it is known that they are in violation, but what is not known is how to finance the improvements.

Ms. Walker indicated that these water systems are under compliance orders and have requirements for public notification. They are on the priority list for funding. However, there has been insufficient funding. In the meantime, the same communities are being penalized.

Mr. Zarate-Bermudez thanked Mr. Gleick for his presentation. He stated that for his doctoral dissertation, he studied the fate of selenium in an algal-bacterial selenium removal system treating agricultural drainage water in the SJV. He was interested in learning more about monitoring programs.

Mr. Gleick stated they did not conduct monitoring. There are monitoring systems in place. Some are annual and not able to provide seasonal fluctuations, which could be a problem in some areas. He stated that someone else might know more about monitoring data.

Ms. Walker stated that their requirement is annual monitoring. If levels exceed the MCL, than quarterly monitoring is required, unless results show it goes back below MCL. This is the same whether it is state or county regulated.

Mr. Gleick suggested that this brought up a great point: the less monitoring is done, the less that is known about the true exposure of a contaminant in drinking water.

Mr. Zarate-Bermudez stated that it is important for the sampling to be taken in the dry season, because it would be less variable.

Mr. Gleick stated that the public is worried about the quality of their tap water. They don't understand the difference between a one-time violation versus an overall exposure problem.

Mr. Vincent asked whether there were private law suits pending, or if the community was suing the agriculture community.

Ms. Clary stated that they are not aware of any yet, but that may change over the next few years.

Mr. Gleick stated that it is hard to target a specific source for the contamination.

Ms. Weintraub asked Mr. Vincent if they have had any law suits in Florida.

Mr. Vincent stated that they had a lot of pesticide use in the 1980s. They passed a tax and put filters in all of the wells and tested 200,000 wells. There is a strong agriculture water board that has best management practices (BMPs) and restrictions that have resolved a lot of the issues, but they are still dealing with the legacy of pesticides use.

A Public participant referenced the study's conclusion that Latino populations were disproportionately affected, and asked whether other minority communities were identified to have issues with nitrate in the water.

Mr. Gleick stated that their focus was not just the Latino community, but that this was the dominant population where the study took place.

Ms. Morales thanked Mr. Gleick for his presentation.

## NUTRIENTS AND DRINKING WATER PROTECTION

Ronald Bergman, Acting Deputy Director, OGWDW

Ephraim King, Director, Office of Science and Technology, OW

Mr. Bergman opened the presentation by laying out why they had this session before the Council and what they hoped to get out of it. Mr. King talked with the Council a year ago. EPA wanted to get back to the Council to have a discussion regarding nutrient contamination in water, solicit feedback, and talk about how the Council wants to be involved in the future. He stated that Mr. King would be discussing new developments from the EPA; Mr. Wall would talk about data linkages between the CWA and SDWA; and finally, Ms. Strauss would provide a more in-depth presentation on drinking water issues in California.

Mr. King began his presentation by stating that in the summer of 2010, EPA talked to NDWAC about program implementation. He wanted to provide a brief update on the new science issues. He wanted to look at the problem implementation and offer a more effective way to collaborate.

In December of 2010, the US Geological Survey (USGS) released a report summarizing nutrients in streams and groundwater across the country. It was an analysis of nitrate occurrence from 1992 to 2004, which found that the nitrate MCL was exceeded in a significant proportion of the drinking water wells sampled. The highest concentrations were generally in agriculture streams in the Northeast, Midwest and Northwest. This is cause for a public health concern. The USGS conclusion was not dissimilar to the task force conclusion; however, despite collaboration among state, federal, and local governments, progress has been limited. From a drinking water perspective, nitrate is migrating into the groundwater system and into larger aquifers.

EPA is looking at human health research and where to proceed from there. The current MCL for nitrate and nitrite was set in 1991 with methemoglobinemia as an endpoint. More recent studies show other health concerns, including cancer, diabetes and thyroid-related diseases. Canada posted draft drinking water guidelines and endpoints tracking. These are all end points EPA is looking at as it tries to determine health impacts of pollution. Additionally, EPA is looking at harmful algal blooms around drinking water intakes, which require treatment of organic material and increased production of disinfection byproducts (DBPs), in addition to the toxins that result from the blooms. The link between these algal blooms and human health impacts is not as evident as the vegetative blooms on the edges of lakes and streams, and EPA is not sure if there is a causal link to skin, respiratory, liver, and neurological health problems from algal blooms around drinking water intakes. This is being tracked carefully, and is another indication for focusing on nitrogen and phosphorus pollution.

The causal links and the assessment of nutrients and water quality are addressed in nine major reports since 2006 as well as a large body of additional peer reviewed literature. There are millions of tons of animal manure generated each year. Not only are nitrogen and phosphorous issues, but also pharmaceuticals and antimicrobials. Also, there are not just impacts to humans, but also wild animals and domestic herds.

#### Empirical Approaches for Nutrient Criteria Derivation

Coming into better focus and broad consensus is the development of numeric nutrient criteria. EPA issued its Empirical Approaches for Nutrient Criteria Derivation guidance document in November, 2010. The SAB review supports the use of statistical tools as part of the weight of evidence for the approach. SAB's review of the Florida Coastal Methodologies concluded that nitrogen and phosphorous need to be considered at the same time. It encourages EPA to continue to develop three approaches (reference, stressor-response, and numerical water quality models). Also, for the first time, EPA is considering satellite imagery to identify chlorophyll a concentrations in coastal waters.

By example, Mr. King stated that in the Mississippi River Basin, OST is preparing a series of white papers and a series of discussions on hydrodynamic modeling and is looking at

maintaining coastal levels of dissolved oxygen concentrations. These models will allow them to calculate nutrient loadings and identify targets for given waterways. They expect that the findings will undergo peer review sometime this fall and will be available for public comment. This will help further inform and distill available data between US Department of Agriculture (USDA), National Oceanic and Atmospheric Administration (NOAA), and EPA.

There is a general perception and consensus that advanced technology can reduce nitrogen and phosphorous levels, but existing municipalities will have a difficult time reaching existing numeric values. EPA is relying on pollution prevention and reasonable and cost effective measures for non-point sources. The National Resource Conservation Service (NRCS) has recommendations for reducing sources. In terms of greater water quality monitoring, the EPA needs to find ways to be as responsive as possible and have adaptive management for different sources. The Agency will look at a toolbox of different tools for point and non-point sources.

Nancy Stoner issued a memo in March of 2011 that outlined “Recommended Elements of a State Framework for Managing Nitrogen and Phosphorus Pollution.” These elements included near-term lowering of levels and long-term commitment to developing numeric criteria. In the near-term, EPA is focused on work, such as stormwater monitoring and BMPs. Permitting will also get near-term reductions. EPA is also looking at states that have prioritized the issue and are obtaining those reductions. In the long-term, emphasis will continue to focus on numeric criteria, but EPA will design an approach to address states’ specific conditions to give them the flexibility they need to be effective.

The recommended framework elements include a state-wide assessment of all major loadings of major watersheds and prioritizing a subset of watersheds where significant reductions can be made. States will be encouraged to look at numeric criteria, municipal programs, and non-point sources and identify BMPs. Areas of high opportunity for significant reductions will be targeted. A final point of the framework is that it needs transparency and some system of accountability. Questions to ask are: are the BMPs being implemented, are they working, and what are the monitoring results? The framework continues to focus on numeric criteria, but it should not be a barrier for immediate results.

The framework has relevance to the drinking water community. It is important to ask where groundwater suppliers are most vulnerable and what actions can be taken to reduce nutrient pollution. It is a way to engage and focus resources.

The next steps will focus on pharmaceuticals, microbials, and harmful alga blooms. This framework could become an important tool for drinking water issues and protecting drinking water supplies. EPA is looking at flexibility in implementation and pragmatic, smart ways to make adaptive measures move forward.

#### *Discussion:*

Ms. Massey asked if there has been any discussion regarding the potential input of UIC impacts beyond septic tanks and decentralized wastewater concepts. These have to be managed. She stated that in Alabama, they know from their inventory that there are some systems that are not

achieving the nitrogen level. She can anticipate from the reduced regulations on Class 5 wells, compared to the National Pollution Discharge Elimination System (NPDES) Program, and from the increased use of the decentralized concept that this will be an increasing source of nitrate.

Mr. King responded that when you take a look at your high priority watersheds, this will give you a chance to look at those systems and review permits, follow up, and determine what is allowed. This might be something the Council would like to think about with regard to recommendations and next steps. He does not represent the Office of Wastewater Management and others might want to follow up with that office.

Ms. Weintraub stated that Mr. King mentioned an ongoing review of animal manure, pharmaceuticals, and microbials. She asked if he thought about how the presence of antimicrobials will impact the bacteriological indicators relied on for safety.

Mr. King stated that he had not thought about this, but that it is an interesting thought. He reiterated her question: Will the antimicrobials impact the indicator bacteria? He stated that he would look into this further. He said that they do expect that a certain concentration of antimicrobials will affect ecosystems and human health.

Mr. Woolard asked if Mr. King could comment on the regulatory tools that the Agency had to address nitrogen and phosphorous loading.

Mr. King responded that they look to the states, but are partnering with USDA to focus NRCS technical support and grant conditions and how they are enforced. They are looking at how effectively BMPs are implemented across the country. That is one tool. Beyond that, the framework envisions working with State agriculture departments to identify specific BMPs and impacts on watersheds, ensuring there is follow up on a regular basis. There is also the assessment tool that Mr. Wall will present. It doesn't distinguish between primary and secondary sources. They'll need to think further about the Section 319 Grant Program funding, and Mr. Wall may be able to talk further about that. The question is: What is the best suite of tools, motivations, and incentives to bring farmers to the table?

## NITROGEN AND PHOSPHOROUS POLLUTION DATA ACCESS TOOL

Tom Wall, Director, Assessment and Watershed Protection Division, Office of Wetlands, Oceans, and Watersheds

Rosaura Conde, Assessment and Watershed Protection Division, Office of Wetlands, Oceans, and Watersheds

Mr. Wall thanked the Council for the opportunity to speak. His Office has been working with states to come up with lists of waters that are not meeting standards. For each impacted waterway, the states make a remediation plan. They also have the Section 319 Grant Program, but this may be reduced. They've developed an important tool to help address runoff pollution. Rosaura Conde is here to present it to you.

He also stated that EPA is very interested in helping states develop strategies to address a nitrogen solution. It requires a lot of face-to-face work with communities and states to determine where to focus efforts. This will take resources including the Section 319 Grant Program, and the Water Pollution Control Program. USDA is working hard with them to target resources towards their efforts where they are most needed and applying a suite of comprehensive strategies. This tool is one of them.

The tool will help states move forward. There is a lot of information already available in Federal databases, but it is hard to access if you don't have geographic information systems (GIS) staff and other resources. EPA has compiled the data to make it available in one place in an easy-to-use format via a geospatial view. It was released on July 15, 2011. It will help communities and stakeholders have access and more participation. It will also help set priorities. EPA is in the process of receiving feedback. So far it has been good, but there are some technical issues, as seen with anything.

Ms. Conde presented the GIS tool and its many features through a live presentation.

Mr. Wall stated that they are working hard to come up with strategies to reduce nitrogen and phosphorus. They want to make it easy for users and provide a tool where the information is available. Those concerned about drinking water supplies can see where priorities are. The Council is in the public health sector and that is very important. Hopefully this is a great opportunity to use this tool and keep water protected.

*Discussion:*

Ms. Massey asked about the data layers; she did not see decentralized wastewater systems listed. She realizes it is a new category and they are classified injection wells, but that they can represent 100 homes. States are required to do a Class 5 well inventory. Even though this is difficult, they are required to do so. She would think that this would be an important data layer. Even with secondary treatment, you could still have an impact if you are not paying attention, particularly from those that are not properly managed.

Mr. Wall responded that this is a good comment and he would see if they could incorporate it.

Mr. Bergman asked how easy it is for states to add their own layers.

Mr. Wall responded that the data can be downloaded and used with their own systems.

## DRINKING WATER AND NITRATES IN THE CENTRAL VALLEY

Alexis Strauss, Director, Water Division, Region 9

Ms. Strauss reported that Region 9 oversees three territories and over 300 tribes. As seen from the discussion today, there is significant groundwater contamination in the Central Valley that is a result of overdraft problems, competing uses, and drought fluctuations. This affects

disadvantaged and rural communities more so. She noted that Ms. Leah Walker is present from the California Department of Health. She is from the enforcement side, but does much more than that, including funding, technical assistance, and guidance.

There are about 118 public systems statewide that exceed standards and the majority is in the SJV. The majority of the systems are nitrate-contaminated. An important area of focus arose as they looked at the data. From the population served, Tulare County is of great concern. The Tulare and Salinas watershed basins are comprised of six million acres of agriculture, and, of that, four million acres are irrigated. The basins are being studied to find sources of contamination and perform source control. These are large physical areas to study and encompass 50% of the agriculture product and dairy for the State of California; therefore, this is not an easy economic engine to address or change in an easy way.

Region 9 is looking at options to reduce loadings and options for drinking water supplies. EPA understands that this is not a problem to solve in the near term. Because there is a federal sole source designated aquifer and the loadings are continuing to increase, options are expensive. Many of the small communities draw on groundwater. Despite the challenges, this is a worthy challenge. While many options have been exhausted, they need to continue to find others.

Ms. Walker thanked the Council for the opportunity to talk and for their interest in the topic. When you look at the sources of contaminants, it will take more than just working on a system-by-system basis. For example, they are looking at the effectiveness of point of entry treatment both in the short- and long-term. The California Department of Health (DOH) is working to increase the number of small CWSs to be in compliance. Disadvantaged communities are impacted the most and this becomes an equity issue.

Ms. Strauss continued by saying that it is important to look at how they can integrate the CWA and SDWA and make progress on how to distinguish numeric criteria and numeric endpoints. California has done a great job in permitting confined feeding and the dairy industry. As a Federal agency, EPA does not have control over these uses unless they discharge to waters of the U.S. The State of California helps with that. Also in California, total maximum daily loads (TMDLs) have been met in urban areas and the state has done a good job in translating the TMDLs in permitting.

#### *Discussion:*

Ms. Dougherty asked how these issues can be examined nationally, and then at the state level, especially with small and medium drinking water systems. It is another issue with CWSs. Small systems have other contaminants other than nutrients, some of which are occurring naturally. There needs to be continued interest from Congress and others on how they are dealing with this issue and the burden this puts on these communities. For the long-term, they will be looking to the Council for help on these issues. This is also partially tied to arsenic. When the Council thinks about these issues and how they want to respond, look again at the types of small systems and what they are doing.

Mr. Owen stated that he is trying to get his head around how all the different agencies connect in the broader picture. This strikes him as a system problem and how optimizing each individual sub-system does not give an overall result. They've been regulating nitrogen and phosphorous on the wastewater side, and know agriculture is a big contributor. The fundamental underpinning is that they cannot reuse fertilizers because users are thousands of miles apart. So, how do they figure out how to concentrate end users? How do they stop that chain and change, addressing technology that can reuse phosphorous? These are economics issues. There are some graphics and cycles that attempt to identify all of the inputs and outputs of the system. What would be helpful is to see all of the agencies that have control over the elements of that cycle and to what extent they can affect that cycle. He further asked what are the kinds of relationships that are critical to those agencies and how do they manage those nutrients given that interplay. If they go to small systems with a nitrate problem and remove it, it has to go somewhere. How do they manage it so that it does not become a problem somewhere else? It will be helpful to the Agency and to what Nancy Stoner is trying to do if they look at the big picture and see how all agencies are mapped and work together to connect the dots.

Ms. Kennedy stated that she really liked what Mr. Owen was discussing. There is a vast separation between the farming side and the livestock side. California is a great place to explore this issue because of the "foodie" movement. There is also political will. She believes that California could be a model for the rest of the country.

Ms. St. Martin responded to Mr. Owen. She stated that the Interagency Task Force is trying to wrap its arms around the CWA data as it relates to the Dead Zone in the Gulf of Mexico. They have had very productive conversations and outputs. They could help them in this effort.

Ms. Massey stated that she thinks they need to use the framework in place from the UIC program and Class 5 well inventory requirement to factor in the wastewater treatment systems. They are not being integrated into the equation. They need to actively start looking at them as a strong contributor to nitrate concentrations. Her region experienced growth to more than a factor of 10 in the past decade. The new technologies that treat small flows for secondary treatment has lead to more systems and pushed residential growth to a rate they had not seen before. They need to account for this trend over the last 10 to 15 years.

Ms. Dougherty suggested that they need to determine a more effective way to focus discussions to the NDWAC other than through presentations. There is a lot of work in the OW to look at this whole issue and the connection between the CWA and SDWA. EPA will look at how to better focus this for the next session.

## ORD SAFE AND SUSTAINABLE WATER RESOURCES RESEARCH PROGRAM

Jennifer Orme-Zavaleta, Office of Research and Development, EPA

Ms. Orme-Zavaleta stated that she spoke with the Council last December, when EPA was launching an effort to realign their research program within EPA. There were a couple of drivers of how they plan their research and program, and the SAB made recommendations as well. They wanted EPA to take a different look at how they do work and provide the Agency with

information, taking an integrative, interagency perspective that brought in others. The Administrator asked if the Office of Research and Development (ORD) could assist the Agency in taking a better role of looking down the road.

This process allowed EPA to take a step back and look at the challenges of the program over the years. EPA evaluated how to redesign their programs to better face research in this century given the complexity of issues and challenges. The overarching goal is to protect public health and the environment. Taking a sustainability approach requires looking at societal, economic and environmental issues. Therefore, EPA is taking an integrated approach for research and helping the OW make decisions in the future.

In evaluating Safe and Sustainable Water Resources (SSWR), they asked the Administrator what the needs were, what are the kinds of problems were being faced, and what problems and needs were anticipated over the next decade. Can they look at these contaminants in different ways?

When they looked at the sustainable water resource systems, EPA looked at problems related to agriculture, chemical processes, built infrastructure, watershed protection, climate, etc. and found two overarching themes:

1. Flows and uses of water in a sustainable system; and
2. How to manage water resources within the system.

EPA needs to recognize that to get to the problem they need to look at its origins, including land use management and practices, industrial processes, aging and neglected infrastructure, non-point sources, and agriculture. They evaluate how the origins manifest into problems in water resources. These two points lead to a systems approach to solutions. This conceptual theme will guide research and focus on the three areas of sustainability: economy, environment and equity (public health and community).

Theme 1 relates to flows and uses of water. It has three research questions and all will benefit drinking water: what factors are most significant and effective in ensuring the sustainability and integrity of water resources and watersheds; what approaches are most effective in minimizing the environmental impacts of naturally occurring contaminants and different land use practices leading to sustainable surface and subsurface water resources; and, what are the impacts of climate variability and changing human demographics on water quality and quantity and what approaches will mitigate these impacts.

Theme 2 focuses on the management of water flows. Research questions ask: what are the most effective and sustainable approaches to maintain and improve natural and engineered water systems in a manner that protects water quality and quantity; how do they effectively manage water infrastructure to ensure safe and sustainable resources from the source to the tap; and what effective systems-based approaches identify and manage the causes of degraded water.

She stated that the next steps will include efforts across all regional offices. They will finalize the framework, which provides strategic direction, and then develop the action plan, which gets at the issues and needs. Then, the research portfolio will be populated.

*Discussion:*

Mr. Woolard stated that it struck him that the research agenda relates to the topic the Council was just talking about. The agenda sets up what the Council will need in the long term, combining the CWA and the SDWA. However, in the short term, the agenda outpaces where the CWA and SDWA are right now. There are some research needs now. He asked whether they are still going to have resources to address the regulatory framework now.

Ms. Orme-Zavaleta stated that they are committed to provide the Agency with what it needs now. The development research plan includes work needed now, so EPA is still working on the near term while looking down the road. They are going back and forth to make sure things do not fall through the cracks.

Ms. Dougherty stated that they mentioned yesterday that this part of the research program is not the only part where work is to be done. There still is the human health part and risk assessment. She asked whether the six areas are still being addressed.

Ms. Orme-Zavaleta stated that all six programs are interrelated and research will benefit drinking water resources.

Ms. Weintraub thanked Ms. Orme-Zavaleta for her presentation. She said it was nice to hear how things are being thought of in a holistic way. In conjunction with the previous conversations yesterday and today, she asked whether there is a role for NDWAC to think about using lower quality water sources for non-drinking uses. She asked if the Council wants to explicitly address that in Theme 2 (of the presentation) or opportunities to provide less treatment and use degraded sources. What implications does this have for prevention and source control? They don't want to encourage the lack of attention on cleaning up contamination.

Ms. Orme-Zavaleta said that is a consideration, and she referenced that a National Academy of Sciences (NAS) report would be coming out this fall. They have talked with AWWA, WERF and other groups. They are also talking with Australia and Singapore on their efforts on reclaimed water and how it is working. Regarding the second question on Theme 2, they do see that as part of that question. Does it make sense to have a dual delivery system and the use of gray water? It is worth exploring and the Agency will be identifying whether it makes sense.

Ms. Weintraub stated that in San Francisco they are developing a strong non-potable water program. There is on-site water reuse and they are developing sources for other uses. In addition, they are thinking about how to use groundwater supplies that are a lower quality and would require significant treatment to be used for drinking, but could be used for other uses.

Ms. Orme-Zavaleta stated she would be interested in talking with Ms. Weintraub on how to approach this topic.

Mr. Zarate-Bermudez said he was glad to see EPA have commonalities with CDC involving resources management and protection of public health, taking a systems approach. CDC has developed an independent study in the last year. The findings of the water reuse study can be made available in June. He said that they are working in San Francisco as well as New York, North Carolina, and Texas. CDC also has interest in onsite wastewater systems and working with EPA on decentralized wastewater management. CDC was invited to write sections related to the public approach in the National Water Reuse Guidelines. A collaboration of agencies is needed not only at the Federal level, but on all levels, including the private sector.

Mr. Zarate-Bermudez further stated that the agenda they've laid out is far more than one agency can do. He noted that an upcoming workshop with research foundations in September will determine opportunities to leverage resources, work together and not duplicate efforts. CDC is also looking to work with associations and other agencies such as DOE, USGS, and USDA. He remarked that he would like to hear more about what Ms. Orme-Zavaleta is doing.

Ms. Morales, as chair of the Council, thanked Ms. Orme-Zavaleta. She stated that the last time they talked their budget was limited and challenging. It is reassuring to see that they are taking an integrated approach. Priorities seem to be lining up pretty well.

Mr. Vincent distributed a handout (§ 62-555.350 Operation and Maintenance of Public Water Systems; See Appendix III). He wanted to follow up with the many questions yesterday on requiring storage tank maintenance. Although the SDWA does not require specifically that storage tanks be addressed, the State of Florida regulates storage tanks.

#### CDC'S DOMESTIC WATER ACTIVITIES: EHS-NET WATER PROGRAM

Max A. Zarate-Bermudez, Division of Emergency and Environmental Health Services, National Center for Environmental Health, CDC

Daneen Farrow-Collier, Division of Emergency and Environmental Health Services, National Center for Environmental Health, CDC

**Ms. Farrow-Collier** thanked the Council for expressing an interest in what CDC does. There are many centers within the CDC framework that work on water, and she noted that this presentation would focus on the National Center for Emerging and Zoonotic Infectious Diseases (NCEZID), National Center for Immunization and Respiratory Diseases (NCIRD), and the National Center for Environmental Health (NCEH).

NCEZID looks at building national surveillance capacity for waterborne disease and outbreaks, improving parasitic and waterborne disease outbreak investigations, and developing and improving access to water-related health and prevention information. The latter has led to the development of the Healthy Water website. CDC is updating the drinking water website also and that should be up at the end of year.

NCIRD looks at preventing disease, disability, and death from enteric viral diseases; responding outbreaks of enteric viral disease, including those involving drinking water sources; improving local, state, and global capacity to prevent disease and respond to outbreaks; and providing

laboratory support to internal and external partners. Ongoing research at CDC relates to legionella, particularly the link between distribution systems and legionella. CDC is responsible for environmental policy around environmental health, and they are responsible for providing resources and technical outreach.

NCEH develops environmental health policy and prevention programs; provides resources and technical assistance; conducts surveillance and epidemiologic investigations; collects, integrates, and interprets data through CDC's Environmental Public Health Tracking Network, the Unregulated Drinking Water Initiative (UDWI) and the Environmental Health Specialists Network (EHS-net); develops and applies advanced laboratory technology to improve the diagnosis, treatment, and prevention of water-related disease.

The UDWI has a provision to provide drinking water to people on private drinking water wells. The current phase of this initiative is the collection and analysis of all data for private wells. There currently isn't one place to get all the information so they are trying to catalog the data in one location. It is a relatively new program and CDC is working with seven states starting last June, 2010. It will close in August, 2011.

The Environmental Health Services (EHS) Branch provides direct support to state and local programs and technical assistance within four areas: recreational water, drought, emergency drinking water, and EHS-net. They work together to look at contributing factors and environmental links to waterborne diseases.

There have been a lot of the waterborne diseases connected to recreational waters. Over the past two to three years, the CDC has been working on a national model aquatic health code. The outcomes have been reduced recreational water illnesses (RWIs), improved standards, training, improved surveillance programs, data-based decision making and system-based approaches to facility design, operation and maintenance. The Branch also has collaborated with EPA, AWWA and NOAA to assist in drought preparation and response.

The Branch has prepared advisory materials and guidance for various groups. The Drinking Water Advisory Toolbox will be available in August, 2011. She noted that communication about drinking water advisories has not been what CDC hoped it could be. The Toolbox provides materials and guidance to help advise the public. It will be available soon. There is also the Emergency Water Supply Planning Guide for hospitals and healthcare facilities, which was available in June. The Guide has information on how to ensure these facilities understand emergency planning and maintain water supplies during emergencies.

**Mr. Zarate-Bermudez** presented specific research activities of EHS-net. The framework for conducting research is similar to the framework EPA has proposed. CDC collaborated with environmental health divisions of local and state health departments. Their goal is to provide capacity building at the local/state level. They are the first responders.

The baseline for EHS-net is systems-based. The first component is a tool developed to help mediate problems with impaired waters (303(d) List). Almost 50% of streams are contaminated

or impaired. Not only is this an indicator of the watershed health, it can be used to identify potential sources of contamination. It integrates all components into outbreak notices.

The systems approach allows a holistic view of the problem. The outcome of contamination is an outbreak. For water-related disease outbreaks, CDC reacts first with the epidemiologist, then the lab, and finally environmental compliance and assessment. The last is currently the weakest link for CDC to determine the outbreak, and he mentioned that they are working very hard to enhance the work of CDC in environmental assessments. The system approach for food will be launched in January, and water is currently under development.

EHS-net activities are using the principles of community participation to conduct work at the local level. They are doing a multi-state study with environmental health departments. They do not have much data to help health departments in developing policies or changing policy, and need to build that capacity at the local level to address these issues. CDC decided to develop a methodology to support this. In collaboration with the environmental health departments, they have completed the first objective and are working on the second. At the end of the second year, CDC will develop an assessment to see if the methodology is being implemented in the same way. In the final year, a scoring system will be developed. It will be very useful for prioritizing interventions.

Internal research activities focus on onsite wastewater systems and decentralized water reuse. The Onsite Wastewater Systems project helped to evaluate the fate of microbial contaminants by looking at a wastewater plume and characterizing the aquifer. The findings were presented in Cincinnati in June, 2011. They are now validating the methodology. The Decentralized Water Reuse project evaluated seven systems with less than 500 gallons per day (gpd).

*Discussion:*

Ms. Morales asked if the Council would hold questions until the next meeting.

AGENDA ITEMS FOR FALL 2011 MEETING AND WRAP UP

*Olga Morales, Rural Development Specialist, Rural Community Assistance Corporation, Dona Ana, NM*

*Cynthia Dougherty, Director, OGWDW*

**Ms. Dougherty** thanked EPA Region 9 for hosting the meeting and assisting with the logistics. She also thanked Ms. Springer and Ms. Kelly for all the work they did to prepare for the meeting.

**Ms. Kelly** also thanked EPA Region 9 for their support. She had two items to wrap up the meeting. First, they needed to discuss the date of the next meeting, either for January or February. Second, they needed to discuss potential agenda items for the next meeting.

**Mr. Owen** stated that the Council discussed a lot of important activities, and referenced that they are pressing up against a Congressional deadline on the budget. He requested that at the beginning of the next meeting there needs to be a summary of what has happened to EPA's budget, priorities as a result, and how this is being managed. This will give the Council some background for the Consultations.

**Ms. Taylor** invited the Council to have their next meeting in North Carolina. She stated there were two issues in her state. The first is the nutrient issue and agriculture. There have been discussions within the state. Like California, this is a big economic driver. The second is related to hydraulic fracturing.

**Ms. Morales** stated that there was one presentation on this meeting's agenda that they did not get to: Small Systems Capacity Development / Sustainability Update to be provided by Mr. Bergman. This should be prioritized for the next agenda.

**Ms. Kennedy** suggested asking the Office of Environmental Justice to talk about what they do. If not at the next meeting, then they should be invited sometime in the near future.

**Ms. Massey** stated she would like to hear an update on the further development of ORD's research action plan.

**Ms. Dougherty** stated that there would be one or two more things for formal consultation. Once they have received comments from the SAB on the full or partial LSL replacement issue, there will be a meeting by phone. It will be scheduled within the next two months. Also, when the NDWAC discusses small system issues, it may be good to have a more interactive full discussion where they hear from the NDWAC members. This was done a few years ago, and it was a much more interactive discussion.

**Ms. Weintraub** asked how the upcoming expiration of some members' terms would impact a meeting in January.

**Ms. Dougherty** stated that this could be an issue. The NDWAC is no longer on a spring – fall schedule as it was in the past, so this could now affect some members.

**Ms. Morales** asked whether they should set a date with this unknown factor.

**Ms. Dougherty** said that it may be better if Ms. Kelly send out possible dates to the members and then go from there. EPA will identify those with terms that are going to expire.

**Ms. Morales** encouraged getting the date as soon as possible.

**Ms. Dougherty** stated that they would pin down two dates in the next couple of weeks. Travel logistics in January might be difficult. Dates in March will be considered if needed.

**Ms. Morales** thanked the EPA Region 9 staff again for their support in hosting the meeting.

**Mr. Woolard** asked if SRF funds could be included in the budget update for the next meeting.

**Ms. Dougherty** stated that if anything happens on the budget end, Ms. Kelly can send a summary.

**Ms. Kelly** stated that she would put together a list of major action items and major decisions. She will coordinate with Ms. Morales and they will come in advance of the meeting notes.

**Ms. Morales** adjourned the meeting.

Respectfully Submitted:  
*/Signed/*

Certified as accurate:  
*/Signed/*

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Suzanne Kelly  
DFO

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Olga Morales  
Chair