Western States
Source Water and Ground Water
Protection Forum

May 5-7, 2009

Asilomar Conference Grounds
Pacific Grove, California

Forum Theme:
Working Towards Solutions in the West
Challenges and Opportunities

Overview and Summary of Forum

The Western States Source Water and Ground Water Protection Forum was held on May 5-7, 2009 at the Asilomar Conference Grounds in Pacific Grove, California. Approximately fifty source-water professionals[1] and partners attended. The purpose of the Forum was to bring together Western States, EPA, and source water protection professionals and partners to share and discuss solutions to source water and ground water protection challenges in the West.

FORUM OBJECTIVES:

- Share technical information about threats to source water and ground water quality.
- Share innovative success stories that may be emulated by others.
- Build working relationships between the participants.
- Encourage innovative problem-solving discussions.
- Inspire participants to go back to their jobs and apply ideas taken from the meeting.

The day opened with Alexis Strauss, USEPA Region 9 Water Division Director welcoming everyone and providing opening comments. After participant introductions Lori Lewis, the facilitator, reviewed the agenda. Tuesday's sessions consisted of a series of presentations (listed below) which provided information on overarching issues, e.g. Climate change; specific regional programs and other water-related information. These presentations allowed participants to gather information about a variety of topics.

PRESENTATIONS

CLIMATE CHANGE: WHAT WE KNOW AND DON'T KNOW, AND IMPLICATIONS FOR WATER RESOURCES AND SOURCE WATER PROTECTION, Bob Raucher, Stratus Consulting Inc.

RECYCLED WATER, INNOVATIVE RECHARGE PROJECTS, AND SOURCE WATER IMPLICATIONS, Ted Johnson, Water Replenishment District of Southern California

WILDFIRES AND WATER QUALITY PROTECTION ON NATIONAL FORESTS IN CALIFORNIA, Barry Hill, United States Forest Service

INTEGRATING SOURCE WATER PROTECTION AND WILDFIRE RISK IN COLORADO, John Duggan, Colorado Department of Public Health and Environment

DAIRIES, IRRIGATED AGRICULTURE, AND GROUND WATER, Thomas Harter, University of California - Davis

[1] The list of attendees can be found on pages 45-48.

FIELDS TO FAUCETS: SACRAMENTO RIVER JOINT SOURCE WATER PROTECTION, Belinda Arthurs, City of West Sacramento and Elissa Callman, City of Sacramento

STORM WATER, LOW IMPACT DEVELOPMENT, AND SOURCE WATER IMPLICATIONS, Darla Inglis, Low Impact Development Center

BUILDING SUCCESSFUL STAKEHOLDER GROUPS AND IMPLEMENTING PROTECTION PLANS, Colleen Williams, Colorado Rural Water Association

IDAHO NITRATE INITIATIVE, Ed Hagan, Idaho Department of Environmental Quality

BOULDER COUNTY'S SEPTIC SMART PROGRAM, Mark Williams, Boulder County, Colorado

NITRATE CONTAMINATION: TOOLS, INSIGHTS, AND POTENTIAL SOLUTIONS, Christian Kropf, Washoe County, Nevada

SOURCE WATER PROTECTION ISSUES MONTEREY BAY AREA, Jan Sweigert, California Department of Public Health and

CARMEL RIVER WATERSHED: WATER SUPPLY PERSPECTIVE**,** Joe Oliver, Monterey Peninsula Water Management District

On Wednesday morning, the forum reconvened and Day 2 discussion sessions were identified using the OPEN SPACE process (i.e., every participant had an opportunity to convene a session on a topic that they were interested in discussing). Nineteen topics were identified and convened (see Table 1 on pages 7-8). The day ended with Afternoon

News where announcements were made. Many of the attendees participated in the field trip which visited sites in the Carmel River Watershed.

On Thursday morning, the group reconvened and reviewed the notes[2] from the previous day's sessions. They used the multi-voting process to identify the top three topics (i.e., the topics that it made sense for this group to pay attention to and focus on over the next 12-18 months). The voting results are found in Table 1. The top three topics identified were as follows:

1. *How to Involve Local Governments in Source Water Protection (Session C-15 on pages 35-38)*

2. *Nitrates: Finding Projects for Wellhead Protection/Source Water Protection (Session A-5 on pages 15-17)*

3. *Is Source Water Protection Done "to, for or by" Source Area Residents? (SessionB-6 on pages 18-20)*

In the next session, the group brainstormed ideas for all of the topics discussed on Wednesday. This allowed the opportunity to add any additional ideas on all of the topics, so that the conveners or anyone interested in these ideas would have some additional information. They identified:

- Associated issues (e.g., links with other issues discussed)
- Who could be involved in future conversations on this topic
- Outstanding questions (based upon reading the notes)
- Any other possible action items or next steps that might be considered.

In the last session, the group revisited the top three topics, identifying specific next steps. The day concluded with an opportunity for everyone to share closing comments. The general consensus was that people felt that the topics addressed were "right on target", participation was high and people felt like they were "part of a team with a shared sense of purpose". The group liked the venue and the format. Some wished that the speakers on the first day had had more time and that there was more emphasis on action items on the last day.

[2] Disclaimer: The notes (found on pages 9-44) from the Open Space sessions represent a good faith effort by volunteer note takers to capture comments, sometimes unpolished, expressed during the session.

Closing Comments

- Enjoyed coming to meetings. Surprised by the interest in Nitrates. There was a lot to hear on the first day.
- Learned that Source Water and Wellhead Protection are local issues. LI have less money.
- I'm not normally part of this group; it was good to hear different perspectives; found interesting the talk about saltwater intrusion.
- Great; I made new contacts; good to have an opportunity to think globally.
- It was eye opening to see groups and the range of what we are doing; we need to find ways to move this energy to local communities.
- Learned even more this year; surprised me that the top issues is working with local governments; in our state we are working on this; I appreciated hearing from other states.
- I work at the community level and really try and work to make the world a better place; now I know that there are other people committed to this too and can share that with the communities that I work with.
- The discussions reinforced for me how complicated the California regulations are.
- This was a good opportunity to learn from everyone. I appreciate everyone's participation.
- Appreciate being here and hearing from everyone. Thank you to EPA for their support. The climate change session surprised me; I now have broader issues to think about.
- This was inspiring to me; I learned a lot. Thank you to Region 9; hope Region 8 sponsors the next one.

- Got a lot of info from different speakers and it was good to hear from everyone that we are not the only ones ; would have liked more time to talk today on some of the top issues.
- Great forum; nice to have representatives from three regions/states/organizations; great to see the different tiers of issues; the issues are somewhat straightforward but the solutions are not; love the venue.
- Great learning experience and forum; shows the global importance of Source Water Protection at all levels; good to be working in the local communities; liked the first day information; enjoyed the Open Space and the opportunity to share and collaborate.
- This is my first time here; appreciate chance to attend and learn; saw a lot of similarities.
- This is my third conference; thank you to Region 9; great venue; good integration between state and federal and talking and coming up with solutions. Can see both top down and bottom up approaches; there seems to be some struggle with the top down bit and would like to work on this; Creative thinking by states is important; Surprised me – the concentration of dairy farms and California regulations; would like at future forums to follow up on the action items that we have identified today and see what progress has been made.
- Like that idea of following up on action items. I think that would help us track forward progress. I missed the national information and perspectives from EPA HQ that we had at Fort Worden. Open Space is fantastic and the best part of the forum. Really interesting in learning more about naturally occurring nitrates.
- Appreciate being included; know other states are facing the same issues.
- Thank you to everyone for having us; learned a lot
- Appreciate being invited and ditto what he said
- For our next conference we are thinking about Yellowstone as a venue; we will be following up with people to get honest feedback. I learned a lot but would also like more accountability.
- Venue was fabulous.
- I'm a new EPA employee; this was a tremendous learning experience; I would encourage us to not wait till the next official forum but continue to talk with each other.
- This is my third meeting that I've been to; I like Open Space. It was very productive. It is interesting that issues with states are similar to issues with tribes; liked the speakers; wished they would have had more time.
- Thank you to everyone and all the planners; there is something magical that happens when we get together like this. I would like to follow thru and pull out all of the action items we have identified.
- If anyone took pictures please email them to me. I think in future forums it would be useful to hear from others (e.g., League of County people, etc.).

- I'm a dataholic; this helped me pull my head away from the data and learn about collaboration and implementation. Really like the one-on-one conversations. Thank you for the effective communication.
- Felt shortchanged on Day 1; all were good speakers, but there was a lot of information, and my attention wandered a bit during the afternoon. Given that my organization decides who goes to specific conferences on a rotating basis; it is unlikely that I will get to come to the next forum. I will trust others to continue the conversations and share what they have learned.
- Refreshing to get broader perspectives; amazed that larger groups cares about what we do; great forum and venue.
- Most of my experience has been with tribes. This forum has really opened my eyes; looking forward to the info exchange; enjoyed OS and being a part of it all.
- Thank you to John and Jamelya. They made it work. I'm glad I was here. The Forum is really the people; good to have a core of people who can attend regularly and good to have new people with new ideas. It is important to get the Western states together, and it is also important to identify Action Items where we can.

Lori Lewis, our facilitator offered the following observations:

- This group has shown both passion and responsibility in identifying and talking about key issues. Where it makes sense, there may be opportunities for you personally and/or your organization to move these issues forward.
- I encourage you to take advantage of the relationships that you have made here and continue your conversations.
- Open Space is a process for having conversations. You can take the OS principles and understanding and use them in your organization.

Table 1. Open Space Sessions

Session	Title	Convener	Points	Votes	Rank
Session A (9:15 – 10:30)					
1	Sustainability - Colorado River	Tim Walls	34	9	4
2	Too Many Emails. How Do I Get My Real Work Done?	Ted Johnson	0	0	17
3	Monitoring Cow (and other Non-Point Source) Compliance	Thomas Harter	20	7	13
4	Making Rate Increases Popular	Belinda Green	21	6	10
5	Nitrates: Funding Projects for Wellhead Protection/Source Water Protection	Leah Walker	46	21	2
Session B (10:30 – 11:45)					
6	Is Source Water Protection Done “to, for or by” Source Area Residents?	Jay Mashburn	44	17	3
7	How Can We Better Integrate Drinking Water Protection into K-12 Schools, Including Those That Are Public Water Systems?	Jacqueline Fern	30	13	8
8	Collecting Data (Beans) to Count Significant Implementation Efforts.	Betsy Parry	9	5	12
9	It’s Getting Hot in Here! What Does Climate Change Mean to Source Water Protection?	Elissa Callman	33	13	5
10	Addressing Nitrate in a Specific Valley	Eric Winiecki	22	7	9
11	Stormwater Discharge to Ground Water by Injection Wells: Issues and Challenges	My-Linh Nguyen	20	8	11

Session	Title	Convener	Points	Votes	Rank
Session C (1:00 – 2:15)					
12	Collaborate for Information	Bill O'Connell	18	7	13
13	Indirect Portable Revolution: Issues and Opportunities	Christian Kropf	33	12	6
14	Linking Rural Water Associations, RCAC-SMART Program with Local Source Water Programs	Chris Miller	12	6	16
15	How to Involve Local Governments in Source Water Protection	Amy Williams	70	21	1
Session D (2:15 – 3:15)					
16	EPA R9 and States -- Coordination and Source Water Issues	David Albright	0	0	17
17	California Integrated Regional Water Management Plans – Are Small Systems Being Included?	Dave Harvey	0	0	17
18	Source Water Protection and Federal Lands	Darcy Campbell	32	10	7
19	What Does the Future Look Like for EPA Funding for Ground Water Protection?	Ed Hagan	13	5	15

Summaries & Notes[3] from Open Space Sessions

Issue A-1: Sustainability - Colorado River

Convener and Note Taker: Tim Walls

Participants: Mark Williams, Danielle Blacet, Jay Mashburn

Discussion Notes: key understandings, outstanding questions, observations, etc.

The southwest's demand for potable water is greater than the supply. Sustainability has become a socially framed question based on values, historic interaction and negotiation. Bridging the interface between science and society has become a challenge for the southwest, their regulatory agencies, cities, water purveyors and state rural water associations. We have entered a different era. Populations in the southwest are growing at three times the national average. Climates are changing and droughts are lasting longer. River and reservoir levels are dropping. Overdrafting ground water supplies has resulted in subsidence and compromised surface water flows. Rural agricultural areas make large ground water withdrawals and are unregulated. Surface water and ground water are managed differently. Water supply and water quality issues are managed separately. Colorado River water is managed separately than other surface water. Assured and adequate water supply focuses on the fastest growing sectors with the greatest ability to pay. Negotiated settlements and adjudicated water rights continue to shape the future. The setting of long-term management goals and adequate and assured water supplies are defined by state boundaries rather than watersheds, basins and rivers. Long-term planning allowing for incremental adjustments is needed for all areas and their boundaries redefined.

Possible Action Items/Next Steps Identified

Identified in Session
None

Identified in Group Brainstorm
None

Associated Issues:
A-4. Making Rate Increases Popular
A-5. Nitrates: Funding Projects from Wellhead Protection/Source Water Protection
C-13 Indirect Portable Revolution: Issues and Opportunities
D-18 Source Water Protection and Federal Lands

Who else should be involved in further discussions?
US Forest Service

Outstanding Questions
Any outcomes/progress should apply to other rivers too.

[3] Disclaimer: The notes (found on pages 9-44) from the Open Space sessions represent a good faith effort by volunteer note takers to capture comments, sometimes unpolished, expressed during the session.

Issue A-2: Too Many Emails. How Do I get my real work done?

Convener and Note taker: Ted Johnson

Participants: John Duggan, Colleen Williams, Margie Zhang, Jamelya Curtis, Christian Kropf

Discussion Notes: key understandings, outstanding questions, observations, etc.

Everyone can relate to being bombarded with emails throughout the day, and feeling overwhelmed with workload in needing to respond to these which takes away from getting real work done. Add to this the many meetings that get called throughout the day, many of which are inefficient and also take away from getting real work done. Much discussion was held. Here are the salient points:

- There are books out there (i.e., 4 hour work week) and trainings (i.e., Franklin Covey) that help with time management
- Need to get over the feeling of having to answer everything right away. Recall what we did before emails/blackberry. Set aside 2 times/day to review emails (i.e., 11:00 and 4:00), quickly scan them, answer the important ones, and set the rest aside to handle at another scheduled time later in the week or next week.
- Try writing a journal of your time for a week to see how much "wasted" time you spend
- Should let people know that you're only checking emails twice a day and will get back to them as soon as possible. Don't blow them off. They'll appreciate hearing back from you, even if it's to say you'll get back to them.
- There is a lot of junk email and "fluff" email (those you'd like to read like conference announcements or daily water news), but these can automatically be sent to other folders to be looked at or not later. This reduces the overload when you open emails to the important stuff.
- "Cut the Crap" and keep replies short and to the point. Request the same from senders. Get to the point.
- Key is to schedule your day, week, and month. Setup dedicated times for email replies and your real work and stick to it. Don't get distracted by multi-tasking. For meetings, have an agenda and pass out early so people know what it's about to make it efficient.
- Take control of your time. Let others know of your schedule and when you can get to their request.

If all else fails, toss out your cell, blow up the blackberry and unplug your computer and simplify your life!

Possible Action Items/Next Steps Identified

Identified in Session
None

Identified in Group Brainstorm
None

Associated Issues:
None

Who else should be involved in further discussions?
None

Outstanding Questions
None

Issue A-3: Monitoring Cow (and other Non-Point Source) Compliance

Convener: **Thomas Harter**

Note taker: **Darcy Campbell**

Participants: **David Albright, Kate Johnson, Chan Pongkhamsing., My-Linh Nguyen, Jacqueline Fern, Eric Winiecki, Elissa Callman**

Discussion Notes: key understandings, outstanding questions, observations, etc.

Non-point source pollution is different from point source due to no one point to measure compliance. If we ask, "What should we monitor?" then we must ask, "What are we complying with?"

The 319 Non-Point Source (NPS) program is not a regulatory program. The Clean Water Act does not enforce ground water protection.

There is much complexity in a dairy or CAFO, many land use zones.

There is much state-by-state variability in regulation, capacity, and education. Learning-curve variability. California (CA) is a leader, other states further behind.

In CA the Porter-Cologne Act gives State Water Resources Control Board authority to regulate NPS of ground water and surface water degradation. There is now an influx of dairies into WA and ID due to dairies leaving CA.

Models from other states, countries are useful, such as CA, EU, and the Netherlands.
An incentive for dairies/CAFOs would be clarity on what they should do regarding Best Management Practices (BMPs), and assurance that they've complied with current requirements.

Businesses would benefit from knowing "rules of the game," including that BMPs may change.

More funding needed for technical issues regarding monitoring, solutions.

Solutions that include a region or watershed are more effective than farm by farm.

What is effective monitoring? Dutch model (see below).

"Death by 1000 cuts" analogy—cumulative effect of many small problems.
Idea of using "insurance fund" such as Underground Storage Tank (UST) trust fund for NPS sectors like dairies. Pay into fund and follow BMPs and if there is a problem the business could tap into fund. LUST fund for orphan sites. Trust fund idea applied to NPS. Define what is a cleanup. Better ways to identify sources. Define compliance protocol.

Adaptive management is difficult due to long time frames to see changes in ground water quality. Are businesses following the BMPs? What are the right BMPs? More funding is needed to identify the right BMPs.

Region 10 is seeing CAFOs move to their states due to stiffer CA regulation. In OR, state does enforcement and is understaffed, many complaints and violations not addressed. CAFO Rule is a step in the right direction.

Dairy industry is often a family business with some land stewardship ethic. Not necessarily true for swine, poultry operations.

Idea of using permeable reaction walls to treat nitrate. Plumes can be deep, wide, could be expensive. Should we regulate best practices or contaminant levels in a well? Very hard to measure success due to BMPs. How can we require BMPs if we are not sure they work?

Possible approaches per Thomas:
In CA, the Department of Pesticide Regulation monitors pesticides in domestic wells. This monitoring provides helpful data for longer term, but shallower monitoring through research can provide earlier indicators of contaminant movement. There are BMPs for pesticide application. In vulnerable zones pesticide use is restricted. The regulatory controls are the BMPs, and limits on when you can apply pesticides and how much.

European example: Each country can regulate nitrate. In the Netherlands, they have a monitoring program for 600 farms for soil, shallow ground water, and deep aquifer monitoring. Every 5 years they come up with a plan and a report on ground water and soils. They then may require improvements in BMPs. If a farm complies with BMPs, there is no enforcement due to a problem. Farms are told what to do by region and crop. This is a regional approach (like in stormwater, watershed approach).

Treating for nitrate:
Water treatment makes water users/purveyors less inclined to care about source pollution. If a PWS has to treat with reverse osmosis (RO), it may cost about $800 per acre-foot of water.

Reverse osmosis at point of use is pretty inefficient. For under-sink unit you lose 2/3 of volume, better if whole house. Utilities lose about 15% due to RO.

Possible Action Items/Next Steps Identified

Identified in Session
None

Identified in Group Brainstorm
None

Associated Issues:
A-5 Nitrates: Funding Projects from Wellhead Protection/Source Water Protection
B-10 Addressing Nitrate in a Specific Valley

Who else should be involved in further discussions?
USDA Natural Resources Conservation Service
Cooperative Extension/land grant universities by program
Farm Bureaus
Western Governors Association
University Researchers on BMP effectiveness

Outstanding Questions
Evaluate effectiveness of BMPs – establish standard "metrics"

Issue A-4: Making Rate Increases Popular

Convener and Note Taker: Belinda Green

Participants: Melinda Harper, Madonna Dunbar, Jamelya Curtis, Glenn DeGuzman, Christian Kopf, Andy Edmondson

Discussion Notes: key understandings, outstanding questions, observations, etc.

What is the true cost of water? What is the perceived value or lack of value of water?

Issues are: Failing infrastructure, higher incidence of drought, infrastructure upgrades. Customers unaware of the costs of providing water and running a water system, are unaware of the rising costs of providing water, the costs of maintaining old infrastructure.

Education seems to be the most prevalent way to address rate increases.

Try and build in the costs of the system at the beginning if possible. Existing systems go through Check Up Program for Small Systems (CUPSS), fill out the infrastructure costs, breakdown costs of equipment, testing, repairs, system failures, costs of new well, etc., to make it understandable for customers.

Meter use, encourage meter installation, how to read meters.

Encourage tap use, educate on downside of “bottled water”, i.e. cost more than gasoline, creates waste, fills up landfill, not as well regulated, tap water treated…you know what is in it.

Have a taste test competition on tap vs. bottled at schools, fairs, education events. “How much is this water worth?”

Make a mini distribution system model and have problems in it such as a hole in one of the pipes…how much will it cost to repair this break? If a pipe leaks, how much is that costing over time?

Use Consumer Confidence Report to educate on costs of water.

In drought, consumers are asked to use less, thus less revenue for the system—might have to implement a drought surcharge to keep afloat.

The group also thought it was a political practice to not raise rates to keep popular with the voters and stay in office.

Consensus that if rates were raised a few percent every couple of years it would be better than a massive hike at one time which has been occurring in many areas.

Possible Action Items/Next Steps Identified

Identified in Session
None

Identified in Group Brainstorm
Education links
3 CMA (City, County Communication Managers’ Association)
“Monster Truck” (very effective)
Conservation Ads (City of Atlanta)
PWSS – Use CUPPS to explain infrastructure costs related to water rates
Global vs. local water benefits and privileges

Associated Issues:

B-7 How Can We Better Integrate Drinking Water Protection into K-12 Schools, Including Those That Are Public Water Systems?

C-15 How to Involve Local Governments in Source Water Protection

Who else should be involved in further discussions?

System operators, board, staff
Public consumers
Schools (education)
Land owners

Outstanding Questions

How to "factor in" all the factors to find the real value/cost of providing public water:

- SWP not usually included
- $/acre-foot
- Infrastructure with CIP
- Treatment
- Repairs/ongoing maintenance
- Labor
- Drought/linked to consumption
- Tap vs. bottled water vs. gas vs. cable

Issue A-5: Nitrates: Funding Projects for Wellhead Protection/Source Water Protection

Convener: Leah Walker

Note Taker: John Ungvarsky

Participants: John Geach, Betsy Parry, Dave Tynz, Amy Williams, Ed Hagan, Christian Kropf, Steve Cypra, Chris Miller, Dave Harvey

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Discussion Notes, key understandings, outstanding questions, observations

What's the problem to solve?

California currently provides grants for source water protection projects with funds from a state bond measure. Funding requests are prioritized based on type of contaminant to be addressed (microbiological over nitrates over chemicals) and proximity to drinking water source (Source Water Assessment and Protection zones). The funds can only be used for capital/construction projects, not planning or studies. CA is currently considering taking a wellhead protection (WHP) set-aside from Drinking Water State Revolving Fund (SRF). I would like to hear about successful ideas for using wellhead protection funds to address nitrates.

Septics to sewer. Is it the best way to go given the cost? This can reduce a major source of nitrates. Need to use other funds (Clean Water SRF) first that are primarily intended for clean water.

Oregon example: proposal to use fund to build reservoir which then would allow development and sewers. (Not a good use of funds.)

Dig wells deeper? Doesn't address the contaminant threat.

Acquire lands to preserve water resources and prevent future nitrate impacts by limiting development.

Where's the nitrate (N) coming from? Source of N should guide spending, BMPs, and achieving "more bang for the buck." Use isotopes/indicators to help identify source.

CA prioritization for SWP funding based on risk. Microbiologicals and nitrates given priority. How's funding done in CA? SWP loans for land and easement acquisition (loans not popular) and grants for capital projects (no funds for studies or developing WHP plans)

Source of the N (fertilizer) and finger pointing is a concern: farmers (ag) vs. urban landscapes (homes, schools). Enlisting help from ag advisers, cooperative extension can help educate ag (farmers) about not over applying fertilizer. Funding needed for schools (fertilizer application). Reducing fertilizer saves money.

How much do manure piles contribute?

If you can get homeowners to test their wells it can help educate them about N and proper fertilizer application.

Holding open houses for communities on wells and septic systems. Offer water tests.

Septic examples: Skykohomish area. County will inspect septic tanks once a year.

Testing well at time of home sale: Homeowners may be hesitant to test their wells because of disclosure laws (in CA). Some states (OR, WA, AK) have well testing requirement (for N) upon sale of property.

Septic/On Site WW systems:

- Issues with maintenance (provide coupons or incentives for pumping tanks)
- Issues with seasonal homes (high loading in certain months, conversion to year round use)
- Inspections

Need for funding outreach to school children, older residents, women, younger families. Is $ available to fund educational programs?

Funds needed for development of community plans to manage on-site wastewater treatment. Provides opportunity for lowering costs and ensuring adequate maintenance (pumping programs, inspections) for subdivision, small community, etc. Be careful not to "over plan" small

communities. They have limited resources. Examples: Sea Ranch, CA; tribes (RCAC); Skykohomish, WA.

How can a bond fund be created? Voter initiative in CA. SWP was a $14 million grant program buried in a massive $multi-billion bond measure. Probably a one-time opportunity.

Are there other options (e.g., package plants) instead of moving from septics to sewers? Septic systems may be the best option if properly designed and maintained. Package plants and sewer can also fail if not maintained. Energy cost must also be considered.

WA requires small water system management plans. It includes 18 elements, including WHP.

CA doesn't require WHP/SWP plans, but they can result in bonus points for grants.

AK working to link WHP Program to capacity development.

Possible Action Items/Next Steps Identified

Identified in Session
Consider these ideas in requesting/planning for WHP set-aside next SRF cycle (Leah Walker)

Identified in Group Brainstorm
EPA letter of support
R9/R10 to compile WHPP set-aside information
319 $: Info sharing on OR; South Willamette Valley projects; EWEB (South McKenzie River septic system project – obtain info from OR DEQ)
DWSRF and 319 Funds: EPA R9 sponsored meeting to discuss with state agencies
Public education on nitrate impacts/health effects

Associated Issues:
A-3 Monitoring Cow (and other Non-Point Source) Compliance
A-5 Nitrates: Funding Projects from Wellhead Protection/Source Water Protection
B-10 Addressing Nitrate in a Specific Valley

Who else should be involved in further discussions?
Legislature
CA DPH (lead)
State/Regional Water Quality Control Board
USDA NRCS
Agricultural industry
Local PWSS
Extension agents
Local soil/water conservation districts

Outstanding Questions
How to get time-of-sale well sampling laws enacted?
Common interest in other states – share information/results
Generate interest with case studies/pilot projects

Issue B-6: Is Source Water Protection done 'to, for, or by' source area residents?

Convener and Note Taker: Jay Mashburn

Participants: Chris Miller, Chan Pongkampsing, Colleen Williams, Andy Edmondson, Glenn DeGuzman, Margie Zhang

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Discussion Notes, key understandings, outstanding questions, observations

- Tie source water protection activities to state drinking water regulations.
- Give grant application credit points for source water protection activities.
- Find ways to work with really poor communities that can not marshal the resources themselves.
- Some water systems have no authority (e.g., NM has mutual domestics) to do source water protection. Look for ways to get other subdivisions of government with the needed authority involved.
- Local ownership of source water protection activities are the intent of the voluntary EPA program.
- Boulder County's Smart Septic is a good example of how programs can be formed.
- Large watersheds like the Colorado River are too big for state programs or local systems to handle. They require federal government involvement.
- Headwaters need to be protected from urban growth.
- Sensitive recharge areas need special protection. This requires identifying them, identifying threats and creating the appropriate protection program.
- There may need to be a way to compensate source residents because the benefits of their work are created for others, something like carbon credits.
- Ground water wells often time over pump their allotted water rights, and there is no government agency checking on this or doing enforcement.
- There needs to be a shift from competing self interest to something that is aimed at the common good in source water protection.
- Local source water protection efforts don't have teeth for lack of funding and as a voluntary program.
- Source water protection needs to be partially like safe drinking water's self interest based regulations and clean water's regulations that protect public health and the environment from your pollution.
- Source water protection should be done from the top of the watershed downwards (headwater and then down stream).
- Everyone has a drinker's interest in source water protection. More focus in source water protection needs to be on the drinking water aspect.
- Upstream polluting counties will not cooperate with downstream receiving counties.

- It is unsure if source water protection will ever become mandatory. If it is going to be some day in the future it would be helpful to be able to know.
- Special EPA funding for actual protection.
- Current source water protection funding is very small.
- Source water protection in National Forests is not always a part of the Forest Management Plan.
- Some National Forest actually gets adjacent community water systems involved in the Management Plan drafting process. This should be highlighted as a National Forest Best Management Practice.
- Use of the NEPA process is used for extraction of additional waters from National Forests. Source water protection should be explicit in the process.
- National Forest resources include ground water and not just trees and animals.
- Multiple methods are needed to notify upstream landowners when their activities affect downstream water quality.
- It is very difficult to identify the source of a particular water quality problem source.
- Forest uses don't' always rank drinking water high enough against other forest uses.
- There is no consistent funding source for grassroots source water protection coordination and collaboration.
- USDA national office funds source water protection activities but the goals are not known by regional office staff.

Possible Action Items/Next Steps Identified

Identified in Session
None

Identified in Group Brainstorm

- Get input from local agencies
- Education (more)
- The public doesn't understand the "why", counter with education
- Use education (at schools) programs
- Make it more fun : ^)
- Take the fun out of funding – get more funding
- More targeted funding for technical assistance (hand holding)
- Make technical information understandable
- Match to local priorities
- Increase community buy-in

"remember"

- We minimize risk not eliminate risk
- Local events and field trips for other programs that are working

- Support networking so people know who is doing what, or who is doing something
- Organize "Community Days" (with food) to discuss local issues
- Where does your water come from field trips
- "Walk to water" event to raise awareness of need (to do more of these)
- Coordination with storm water and other programs

Associated Issues:
A-1 Sustainability - Colorado River
B-7 How Can We Better Integrate Drinking Water Protection into K-12 Schools, Including Those That Are Public Water Systems?
B-16 EPA R9 and States -- Coordination and Source Water Issues
C-15 How to Involve Local Governments in Source Water Protection

Who else should be involved in further discussions?
USDA national office (currently funding the National RWA for 38 FTE for source water protection technical assistance)
USFS
National Association of City & County Health Officials
City planners, local environmental groups

Outstanding Questions
None

Issue B-7: How can we better integrate drinking water protection into K-12 schools, including those that are public water systems?

Convener and Note Taker: Jacqueline Fern

Participants: Steve Cypra, John Geach, Jamelya Curtis

Discussion Notes, key understandings, outstanding questions, observations

- Drinking water protection curriculum in the schools is often listed as a strategy in protection plans; follow-up is needed to see if water systems are doing this.
- Important to let EPA know that continued support is needed for drinking water protection materials/activities.
- EPA clearinghouse of materials is good, but not the easiest to navigate.
- Working with districts can be effective means of introducing materials (in a package that district folks can then share with teachers); timing is important—contacting district folks at the end of the school year with proposed materials---then they can share materials with teachers as they plan for the following school year.
- Find out who the curriculum director is for the school district – this person would be a good point of contact; also identify science teachers who are passionate about water quality/drinking water issues.

- Work top down and bottom up—contact appropriate teachers and school districts and involve drinking water operators where possible, but also discuss importance of drinking water protection with the science curriculum director for State. This person can carry message to school districts.
- In EPA Region 9 tribal schools are already fully incorporating drinking water curriculum into school programs.
- In Arizona, a lot is happening in tribally-owned water systems. Donna Calderon at ADEQ may have packet to share.
- Can possibly weave into field trips; involve drinking water system operators where applicable to provide info about potential contaminants, wellhead/intake maintenance, challenges, water quality testing. Have operator function as co-presenter.
- Ideal is to present materials to schools and have them take curriculum and carry it forward; occasional school visits by EPA, State, Rural Water staff can be effective, but we can't rely on this as the primary means of implementing.
- Use web-based materials; maybe even satellite instruction (more appropriate for older students?).
- Locally-led programs should be the goal.
- Find out about teacher training opportunities—in service, state trainings—offer demonstrations/discussion about how to incorporate drinking water protection into classroom.
- Steve offers presentation to teachers in August to talk to them about what they can offer the following school year.
- Connect drinking water protection curriculum/activities to math and reading so teachers can more easily tie it to required curriculum guidelines.

Possible Action Items/Next Steps Identified

Identified in Session

What	Who	By When
Distribute list of web resources for teachers to group	Jacqueline	mid-May
Distribute teacher resources packet used in Alaska	Steve	
Contact Arizona about distributing their materials	Jamelya	
Identify key school districts and contact before end of year	all?	June 1
Identify teacher training opportunities and try to get on agenda	anyone interested	June 1

Identified in Group Brainstorm

NDEP working on web for education & outreach

Work with Project WET

K-12 outreach education

Watershed - Education program in elementary school and stream teams

EPA (HQ) outreach materials to FFA (formerly Future Farmers of America) – share with others

Associated Issues:
C-15 How to Involve Local Governments in Source Water Protection
B-6 Is Source Water Protection Done "to, for or by" Source Area Residents?
C-12 Collaborate for Information

Who else should be involved in further discussions:
Non-profit education groups (Water Education Foundation, etc)
Stormwater Management Programs
River Network
Sylvia Malm (EPA-HQ)
Project WET
Many, many disjointed state and local education efforts and products

Outstanding Questions
Suggestion: don't just think about K-12, think about women, young families, older residents for education programs

Issue B-8: Collecting Data (Beans) to Count Significant Implementation Efforts

Convener: **Betsy Parry**

Note taker: **Melinda Harper**

Participants: **Amy Williams, David Albright, Dave Harvey, John Dugger, Madonna Dunbar**

Discussion Notes: key understandings, outstanding questions, observations, etc.

How to track BMPs?

- Colorado (CO) Municipal Leagues track ordinances (counties do not). Regarding protection plan facilitation, establishment of steering committees (aka planning teams) are the driving force behind protection efforts and implementation. CO Department of Public Health and Environment offers grants from $5,000-$50,000 to systems for protection efforts. Grant application requires agreement to establish steering committee and implementation of $\geq$ one (1) BMP with the condition that 10% of grant monies withheld until protection plan is submitted. Tracking BMP implementation problematic, but a program is being developed. Results indicate that steering committees want to put funding toward implementation and "donate" time for matching funds from state funds. The key is empowering steering committees. Drawback identified that grant program only tracks a few PWSs out of the whole. State gives steering committees direction for protection plan, implementation measures. Funding and technical resources provided to PWSs; state rural water association contracted out by state to assist.
- Idaho (ID) is changing their definition of significant implementation from accomplishing source water protection item to directing actions toward county ordinances, comprehensive plans, and land purchases. Regarding protection plans, ID either counts implementation items or the PWS participates in regional protection efforts, e.g. County Protection Plans or regional ground water management plans. Efforts are being directed

toward city/county implementation of protection ordinances and restrictions of some land use management practices within source water/wellhead areas.

- CO has implemented some "pilot projects" for plans addressing common issues; projects and/or BMPs are posted on CO's website. There is a hope to "group train" facilitators. Have found that more systems want "pilot projects" of their own, after viewing website.
- The Tahoe Water Suppliers Association uses its annual report to document implementation. Report is required because of some PWSs with "filtration exemption" status.
- ID DEQ mailed out postcards as one attempt to track implementation progress. Received 33% response. Unfortunately, feedback indicated a general confusion over just what is "source water protection".
- USEPA R9 suggested using SDWIS for tracking purposes because the systems are already listed and identified. Also, suggested bringing in water operators (generally around longer). It was discussed that SDWIS may not be an accurate source of email addresses for operator/system contacts.
- ID has considered asking a source water protection question within sanitary surveys, but so far, no action taken.
- CO has one FTE funded from the wellhead set aside fund to allow survey takers to provide information and promote source water protection, as well as refer PWSs to source water protection specialists (CO Rural Water Association).
- RCAC from CA suggested using email lists to keep in contact with PWSs and to disseminate information (concerns regarding accuracy of email lists with some agencies).
- Inquiries into Household Hazardous Waste collection events. ID suggested that county-wide or area-wide participation could save considerable money if there is a central place established for waste drop-off from PWSs. Also discussed idea of satellite waste collection events in counties with lower population levels.

Everyone agreed that source water protection compliance must be incentive-based for PWS participation and to get large-scale efforts underway.

Possible Action Items/Next Steps Identified

Identified in Session

There is a need to further develop incentives for PWSs to participate in source water protection efforts.

Identified in Group Brainstorm
Sessions at water system trainings/conferences to collect information on source water protection actions? (e.g., AWWA, NRWA, operator trainings)
Look at ways to incorporate local efforts on source water protection that don't have plans for "bean" counting
Identify action items that require no funds vs. funding
Database for tracking implementation actions

Associated Issues:
C-12 Collaborate for Information

Who else should be involved in further discussions?
Soil & Water Conservation Districts
Cooperative Extension agents
Local agencies for input/challenges

Outstanding Questions
What states have met the EPA goal of 60% implementation? How did they get there? What did they include?

Issue B-9: It's getting hot in here! What does climate change mean to Source Water Protection?

Convener and Note Taker: Elissa Callman

Other Participants: Mark Williams, Daniel Chang, Tim Walls, Bill O'Connell

Discussion Notes: key understandings, outstanding questions, observations, etc.

Changes are observable – It's real!
- Water supply/quantity
- Plant health
  - Beetle
  - Fires

Drought or Climate Change? Yes, climate change
Good information source for Southwest: CLIMAS (Climate Assessment for the Southwest) website – includes newsletter

Water rights and ownership issues: public or private ownership. Change in times and focus: early 1900s national focus on agriculture. 1920's wettest, most robust water years. Now there are unsustainable water rights, less agriculture, increased population, etc.

Quantity/water rights – legal issues are anticipated (e.g., between states).

What are we interested in as Source Water Protection practitioners?

Ground water recharge/water supply

e.g., isotope study – can see changes in Water Quality

Surface water supply

Observable signs in the watershed

Scarce water – what can we all do? (all meaning everybody)

Water quality issues will become more important, but current and near term drivers will be issues like water supply and conservation.

Waste = re-think water use: 2 types of connections – potable and other uses.

Water supply and water quality will be closely related (e.g., well operators observed water quality changes). They were provided technical solution. Funding was available in this instance to help address the impacts.

Long-term outlook – more cost to get water, treat water, dispose of water. Wastewater will be part of supply.

Balance of drinking water supply/quality with water for other environmental uses (e.g., in stream flows, habitats).

Communicating with others on climate change:
Watershed partner groups – good tool for discussions on how climate change affects them.

Finding a hook – something that's important to audience

Source water – the water they drink

or

Watershed – holistic approach

Sustainability will be important concept.

People tend to think NIMBY. Need to get people forward thinking (e.g., Source Water Adventures). Program includes visiting unusual water facilities.

Where water comes from? Watershed. Educational process.

Protect quantity point of view – e.g., some people are recognizing opportunity to make $ from water shortages – if others understand climate change and how it may effect them, they can make more informed decisions.

Some people are just learning the basics.

What changes do we see in our work: What can we do?

Education – within our organizations and with our external customers
Think towards the future – longer term outlook

Technical solutions:

New technology – e.g., desalinization
Recharge and reuse
Water storage – consider associates water quality issues (current and emerging)
Ground water recharge
reservoirs

Watershed sanitary surveys – longer term look than 5 years for climate change?

Future changes to water treatment operations and facilities. How to obtain buy-in to plan for these changes?

Outstanding questions:

Where to protect water?

Is there a need for a national water policy? Broad concepts? Bottom up or vice versa? Or would regional approach be better? Or both?

Are regional approaches possible – based on hydrology, uses, etc.

Will some changes be gradual, therefore harder to observe and address?

Educating others – who are the hardest to reach? (This can be surprising. Sometimes a layperson may "get it" and scientists may not connect with source water protection/water quality.)

Emerging contaminants - will removal be needed/required? Blending an option?

Will source water protection be required, obsolete or not necessary in the future (e.g., with water reuse – will water protection be defined differently? If we need advanced treatment of source water, will source water protection be needed?)?

Will society need to focus resources on protecting higher quality water supplies for potable use?

Possible Action Items/Next Steps Identified

Identified in Session
None

Identified in Group Brainstorm
None

Associated Issues:
C-13 Indirect Portable Revolution: Issues and Opportunities
A-1 Sustainability - Colorado River
B-7 How Can We Better Integrate Drinking Water Protection into K-12 Schools, Including Those That Are Public Water Systems?
B-6 Is Source Water Protection Done "to, for or by" Source Area Residents?

B-11 Stormwater Discharge to Ground Water by Injection Wells: Issues and Challenges

Who else should be involved in further discussions?
Hydrogeologists, meteorologists, geologists
Climate & working groups
Educators
USFS
Western Governors Association

Outstanding Questions
How to bring this issue down to a local level and tasks within their reach?
How to integrate consideration into all watershed management activities?
Recommendations for GW model inputs?
Brining general public up to speed on reality of the problem and severity of the consequences.

Issue B-10: Addressing Nitrate in a Specific Valley

Convener: Eric Winiecki

Note Taker: Ed Hagan

Participants: Christian Kropf, Leah Walker, Danielle Blacet, Belinda Green

Discussion Notes: key understandings, outstanding questions, observations, etc.

Various studies on ground water quality exist – patchwork – nothing comprehensive
Isotope sampling
- doesn't always give conclusive results
- in most agricultural areas, nitrate may come from a variety of sources

Do a conceptual model
Analysis of trends is important
- make sure comparing apples to apples – wells in same aquifer

Good idea to have third party (non-regulatory agency, e.g., USGS or university) to do a trend analysis
Consensus on approach
Salinas Valley – identify sources, address them
In ID, phosphorus has been a limiting factor for nutrient management plans – surface water issue. Phosphorus build-up in the soil is limiting the amount of manure that can be applied.
Options
- Study
- Identify and implement best management practices
- Reach agreement on actions with stakeholders. Educate stakeholders, set up non-profit as lead, stakeholders may contribute funds to support

Public health officials should emphasize that nitrate is an acute health threat
Threat of potential regulation or "user fees" can help motivate
Clarify mission: improve ground water quality and protect public health
Good facilitator important

Possible Action Items/Next Steps Identified

Identified in Session

What	Who	By When

Broad-based workshop Key stakeholders
Presenters: neutral independent authorities (e.g., USGS)
Invite: public, elected officials, media
Reach consensus on next steps
Possibly fund a neutral facilitator
Set an agenda (e.g., "have 4 meetings to...)
Identify the person or group that will push implementation and be responsible for making sure stakeholders meet their commitments. Possibly funded by stakeholders.
Need a funding source to facilitate implementation.

Identified in Group Brainstorm
None

Associated Issues:
A-5 Nitrates: Funding Projects from Wellhead Protection/Source Water Protection
B-6 Is Source Water Protection Done "to, for or by" Source Area Residents?
C-15 How to Involve Local Governments in Source Water Protection
B-11 Stormwater Discharge to Ground Water by Injection Wells: Issues and Challenges
A-3 Monitoring Cow (and other Non-Point Source) Compliance

Who else should be involved in further discussions?
County Health Department
Environmental justice groups
Soil & water conservation districts
University Cooperative Extension
Agricultural groups

Outstanding Questions
List of action items to move forward

Issue B-11: Stormwater Management and Ground Water Issues

Convener: **My-Linh Nguyen**

Note Taker: **Kate Johnson**

Participants: **Darcy Campbell, Ted Johnson, John Ungvarsky**

Discussion Notes: key understandings, outstanding questions, observations, etc.

Issue: in Nevada (NV), cities are abandoning storm water retention ponds due to concerns with mosquitoes and West Nile Virus. Preferred alternative may be to develop local storm water collection devices and allow direct injection or recharge to aquifer. What are water quality issues? Who regulates this activity?

In NV, the UIC and stormwater programs are discussing regulatory authority, with the SWP program participating. Participants in this discussion agreed that the UIC program probably would have jurisdiction.

Missoula MT has similar existing situation. Ground water is shallow, about 10 feet, and stormwater discharge is directly connected to aquifer. A current Water Research Foundation (formerly AwwaRF) project is ongoing in this area. Currently the storm water connection is not known to be causing any problems.

Portland, OR and Modesto CA also have/had similar issues.

Water Replenishment District of Southern CA (WRDSC) model was discussed, although model there is a large collection contained in several areas, rather than many small collection areas in multiple areas. WRDSC model does offer advanced treatment by slowing infiltration to allow exposure to sun and sediment deposition. WRDSC can also let "first flush" go by, not an option in these smaller passive systems. The aquifer recharge in WRDSC has been in place for decades, and has not resulted in any water quality issues in adjacent and down gradient DW wells. Degradable constituents are not deemed a concern. No resident time requirements for stormwater recharge (i.e., no minimum time water must be in subsurface before it is used for drinking water).

USGS NAWQA studies could address or provide data

Could this kind of collection be an advantage? Artificial recharge is sought after in many locations.

Spill issues are a significant concern; spills impacting a passive system are inevitable.

CA is evaluating but not yet using a carbon treatment design unit, and may be able to share info. Difficult to calculate flow, maintenance issues also possible concern.

What are possible links to and ramifications for Low Impact Developments? Basic issues of treatment apply.

Parameters to consider:

What happens to ground water quality?

What happens to stormwater in vadose zone/aquifer?

What are soil characteristics if giving credit for treatment?

What is acceptable design?

Could portable water samplers be used for initial water quality parameter measurement?

Is other research going on? EPA is working on this question.

For recycled water, CA Department of Public Health requires that operators must agree to provide alternate drinking water sources in case of drinking water aquifer impacts.

Self insurance a possibility? Shelter from legislature, if possible….

Possible Action Items/Next Steps Identified

Identified in Session
None

Identified in Group Brainstorm
Conference call with EPA Region 9
Share published information regarding storm water quality
Publicize "lessons learned" and BMPs
Share designs that are successful
Connect CWA funding and SWP at Federal level

Associated Issues:
A-5 Making Rate Increases Popular
B-10 Addressing Nitrate in a Specific Valley
B-9 It's Getting Hot In Here! What Does Climate Change Mean to SWP?

Who else should be involved in further discussions?
State and Federal UIC Programs

Outstanding Questions
What are treatment & monitoring requirements?

Issue C-12: Collaborate For Information

Convener: **Bill O'Connell**

Note Taker: **John Geach**

Participants: **Margie Zhang, Dave Harvey, Belinda Green, Elissa Callman**

Discussion Notes: key understandings, outstanding questions, observations, etc.

Noticed various agencies have a vast amount of information that is not known by other agencies that could use it. How do we let it be known what information we might have that could be shared?

Governmental agencies many times have duplicate information. Sometimes they are reluctant to share information, "protecting turf".

Maybe form Collaborative listing various expertises so that personnel resources can be shared.

Need more coordination of agencies at national level of organizations to reduce duplication.

Computer systems don't talk to each other for data sharing – IT issue.

Form environmental calendar to show what workshops and training is being provided and where to prevent duplication and improve attendance at each event. Some states (e.g., MT) already have similar system set up.

Create Collaborative Clearinghouse website for agencies use. Maybe sponsored by national agency.

Foster personal relationships to keep lines of communication open.

Tabletop exercises allow people to know what each other does. Opens communications and data sharing.

Sometimes "Googling for information" provides too much information, can't find what you need quickly.

Better to know someone to call.

Source Water Collaborative website run by EPA lists members. Anyone can signup, no cost. Encourage local agencies to sign up. Has tab of web site "find allies" to provide contacts for people looking for information. This could be national clearinghouse to data resources.

Possible Action Items/Next Steps Identified

Identified in Session

None

Identified in Group Brainstorm

What	Who
Obtain information on SW Collaborative	Elissa Callman
Share information and resources on ACWA, an association of 450 water systems (representing 90% of water delivered in CA, including small and large systems).	Danielle Blacet
Presentation to the Collaborative this summer (July 1, 2009).	Bill O'Connell

SW collaboratives to share successes from other states
Link with efforts of National SW Collaborative
Blogs? Can we narrow down so there aren't too many sources?

Associated Issues:
B-8 Collecting Data (Beans) to Count Significant Implementation Efforts
A-5 Nitrates: Funding Projects from Wellhead Protection/Source Water Protection

Who else should be involved in further discussions:
National Environmental Science Center, West Virginia University
NFS
USGS
BLM

Outstanding Questions
None

Issue C-13: Indirect Potable Revolution: Issues and Opportunities

Convener and Note Taker: Christian Kropf

Participants: Ed Hagan, Danielle Blacet, Tim Walls, Leah Walker, Mark Williams, My-Linh Nguyen, David Albright, Jamelya Curtis, Dan Chang, Andy Edmondson, Tim Walls, John Ungvarsky

Discussion Notes, key understandings, outstanding questions, observations

How does Indirect Potable Reuse (IPR) work?

- Wastewater treatment plants treat to either a secondary treatment (not good for use on food crops) or disinfected tertiary treatment (can be used on food crops; usually requires additional filtration/treatment to remove pathogens; Ultrafiltration to Reverse Osmosis to Advanced Oxidation Processes to UV + Oxidation).
- Water is then delivered to either spreading facilities or to injection wells.
- CA requires that a minimum of 6 months of travel time between application and domestic well.

- A combination of treatment, travel time, and dilution criteria have to be met (on a sliding scale) in order for the project to move forward. Dilution water can be raw water, stormwater, or potable.

Is there public support for IPR?

Yes. Christian Kropf was amazed at the relaxed attitude of CA participants with respect to IPR acceptance and implementation. Public education has diminished concerns over Pharmaceuticals and Personal Care Products and Endocrine Disruptor Compounds (now being referred to as "Constituents of Emerging Concern" in CA). There is a high likelihood that communities that are water-starved could move towards "direct potable" reuse.

IPR public support success stories?

EPA has a growing list of IPR projects that are currently in use or in progress in Region 9 states. John Ungvarsky can provide a link here. The big ones include Orange County public buy-in, Tucson Soil Aquifer Treatment, and Scottsdale Ultra-treatment projects. New Mexico has at least three projects on-going that have had little public resistance; but the State is still working on rules/guidance documents.

Message and outreach to public is very important. In NV, IPR may be used as a way to "address wastewater" – but it might be better framed as "augmenting supply – especially during drought years" for more public support. It all starts with public support and stakeholder buy-in from the beginning.

IPR public support failures?

Zone 7 Water Agency (in Alameda County, CA) example – State of California DPH was fine with the project, but the Zone 7 fell short on the public education of the project, and it died. Northern CA projects have a tougher time passing due to the great availability of water, whereas Southern CA projects have a high acceptance/passage rate due to the lack of available water (most of their water is imported from Northern CA, the CO River, or other outlying basins). In addition, public sentiment/support rises and falls with drought and water availability conditions. Low water years = major support; ample water years = low support.

Major Concerns?

Land-use work has to be included in all proposed projects to account for land-uses in the area (septic, recharge basins, other potential contamination sources). The National Onsite Wastewater Recycling Association has some great guidance with respect to this.

Possible Action Items/Next Steps Identified

Identified in Session
Not addressed – more of a discussion on the state of IPR in the West, public sentiment, successes, failures, and the future potential for IPR in the West.

Identified in Group Brainstorm
Case studies welcome
EPA Region 9 (John Ungvarsky) will send "other" project contacts to Christian Kropf.
Inventory of ongoing projects (especially successful ones) could help demystify and drive national (EPA) standards and guidance.

Associated Issues:
B-9 It's Getting Hot In Here! What Does Climate Change Mean to SWP?

Who else should be involved in further discussions:
Ted Johnson
National Onsite Waster Recycling Association (NOWRA)
National Water Research Institute (NWRI)

Outstanding Questions
Using Indirect Potable to dilute contaminated aquifers and/or those with overdraft conditions
Need references on SAT efficiency, what exactly is removed, etc.
What are national standards (EPA guidance)?

Issue C-14: Linking Rural Water Associations, RCAC-SMART Program with Local Source Water Protection Programs

Convener and Note Taker: Chris Miller

Participants: Chan Pongkhamsing, Colleen Williams, Dan Chang, Andy Edmondson, Glenn DeGuzman, Jay Mashburn, John Ungvarsky

Discussion Notes, key understandings, outstanding questions, observations

Not a lot of people are aware of the mission of the SMART Program. SMART Program was originally pitched to The State of Alaska as means of assisting community water systems with septic concerns develop and implement protection plans for their water system.

Jay from RCAC informed the group that the SMART Program was only contracted to conduct two septic system trainings in each state by the end of May 2009.

There was a general feeling that the SMART Program was a top down approach created by EPA. The States and State Rural Water Associations weren't included in the process. States really need assistance with: technical support in the field and assisting communities develop and implement protection plans. Additional support is very much welcomed by the States but trainings (only) may not be the best use of the funding. The SMART Program is welcomed at the State level, but the mission between what EPA was looking for and what was delivered seems to have been lost in translation.

The group branched out and discussed the needs by communities for funding the implementation of plans. Colorado has a grant program in place that communities can apply for. Colorado Rural Water Association assists communities with applying for this funding.

Colleen Williams of CRWA mentioned that the State of Colorado is directly funding positions at CRWA to assist in developing/implementing protection plans. Alaska has looked at doing this in the past and will again revisit this.

Dan from Hawaii mentioned that he is getting numerous grant applications for development and implementation of protection plans. Many grants are for $30,000. Hawaii has experienced trouble sorting through applications that meet their requirements.

Possible Action Items/Next Steps Identified

Identified in Session
None

Identified in Group Brainstorm
Send out SMART web link (Jay Mashburn)
Send out list of steering committee members (Jay Mashburn)

Associated Issues:
C-12 Collaborate for Information

Who else should be involved in further discussions?
EPA
National Environmental Service Center, West Virginia University

Outstanding Questions
How can state SWP program duplication be avoided?
What are some examples of successful collaboration, education, and outreach?
Why didn't EPA involve states in funding decision?

Issue C-15: How to Involve Local Governments in Source Water Protection

Convener: **Amy Williams**

Note taker: **John Duggan**

Participants: **Betsy Parry, Kate Johnson, Madonna Dunbar, Melinda Harper, John Duggan, Jacqueline Fern, Eric Winiecki, Darcy Campbell**

Discussion Notes: key understandings, outstanding questions, observations, etc.

- In Oregon (OR), the Association of OR Counties host presentations to educate. Few counties have ordinances (PWSs in Lane County have expressed interest; Wallowa County has an ordinance). Counties express status of no money and no staff to provide awareness to source water areas. City level struggles

- Idaho (ID) Association of Cities hosted workshops to better identify the role of local governments and officials regarding source water protection.
- Approximately 1/3 of counties in Utah (UT) have source water protection ordinances (mandatory SWP program in UT). Several participants asked for model template ordinance examples. UT's provision includes approval of 250 day time-of-travel restrictions around new sources. Statute for state-wide ordinances was later rescinded, and only applies to larger counties. UT also imposes 300 foot setback on side of source, and 15 mile setback upstream for source water sources.
- Example of a top-down approach: Source Water Protection Collaboratives. A national group that was trying to engage federal agencies into SWP efforts. They developed brochures and postcards, did outreach to planning associations. They could use a more consistent formal management top down message.
- ID: Model for comprehensive plans for cities may include ground water/source water protection component. Want less work, which is a selling point for counties.
- CO identified sharing GIS coverages and outreach and education efforts as a common implementation practice in public water system (PWS) protection efforts. Colorado has a state statute to allow PWS's to protect water resources for 5 miles upstream of intakes, but a County can decide to protect farther than that.
- OR mailed GIS coverage to water systems, and made info available on the web.
- ID has report formats, nitrate and SWP delineations merged on-line with aerial photos; Eric Winiecki suggested incorporating info into Google Earth. In ID, most septic system as-builts by county are only paper files.
- For Lake Tahoe, 1,320 foot setback ordinance from surface water intakes, and a 600 foot wellhead protection setback ordinance from new development.
- In UT (as in other states), the local community becomes engaged when "something goes wrong".

Possible Action Items/Next Steps Identified

Identified in Session

- Convey message of what can go wrong. Need case studies of "peer" local governments, and lessons learned to get their attention.
- Publication on economics and cost-benefits of source water protection (Eric Winieki, EPA R10, will provide).
- ID – May approach University to have economists do a "white paper" on this topic
- WA State – every public water system must estimate the cost to replace a water source.
- CO requires economic valuation and socio-economic costs as part of their pilot project's plans that PWS's or communities complete.
- AK is identifying costs of new sources.
- UT submits case studies of what went right and what went wrong. Lists specific sources of contamination, how to address pollutants.

- Peer Case Studies - There is a new blog page for western source water protection efforts that we might capitalize on to share case studies, lessons learned. It's so important NOT to contaminate.
- EPA also has a new website - "Watershed Central".
- Getting "buy-in" from public to increase rates to pay for protection. Must "empower" the consumers to make a choice – make changes to protect the resource and foot the costs? Or leave SWP as is, but must keep building new treatment methods and plants, and pay for those costs.
- Community Development Block Grants - these require grant recipients to do a SWP plan, so in ID the water staff have received phone calls from communities asking how to do this.
- Tie source water protection to implementing the new EPA rules - GWR and LT2/State 2 rule. Can we put some SWP money toward supporting sanitary surveys, if the surveyors collect data on source water protection? Regular surveys and the new EPA Rules provide opportunity for point of contact with local governments and water systems; could use them to send the source water protection message at the same time.
- LT2 gives a ½ log removal credit for surface water systems that have source water protection.
- Tie between SWP and the current interest in alternative stormwater techniques and Low Impact Development. How can we get our SWP foot into that door, while the topic is hot? Guidelines on stormwater are to protect groundwater, remove contaminants from parking, street areas through public awareness and education, and incentives. We need to provide ideas of big rewards to minimize ground water impacts.
- With stormwater, a big concern is Underground Injection Wells. Eric Winiecke wrote up a case study about City of Issaquah where the UIC was installed up gradient from a water source. This is a good lessons learned example (Eric will try to send us the article.)

<u>Identified in Group Brainstorm</u>

Share success stories & ordinances.

Provide land use planning, management rules and regulations to newly elected officials (use Association of Idaho Cities (AIC).

Integrate benefits to local government to attract participation.

NV Division of Environmental Protection (NDEP) looks at county boards and local community/education and technical assistance.

NDEP: Revising strategy to be given to Counties, who will distribute to cities, who will distribute to PWS. This allows PWS to become participants and the counties responsible parties. The state provides assistance, PWS can develop plan and provide delineation to city/county.

ID: Work with AIC to include GW/SWP in comprehensive plan model.

<u>Associated Issues:</u>

B-6 Is Source Water Protection Done "to, for or by" Source Area Residents?

B-7 How Can We Better Integrate Drinking Water into K-12 Schools, Including Those That Are Public Water Systems?

B-8 Collecting Data (Beans) to Count Significant Implementation Efforts.

C-12 Collaborate for Information (Specifically, there is a lack of knowledge/understanding of responsibilities of county government and land use planning/management.)

Who else should be involved in further discussions?
School Districts
Western Governors Association
National Association of City and County Health Officials (NACCH)
National Association of Counties
Source Water Collaborative
Municipal Leagues
Council of Governments
Water Associations
Association of Idaho Cities/Counties
American Planning Association

Outstanding Questions
Links to ID report formats?

Issue D-16: EPA Region 9 and States – Coordination and Source Water Issues

Convener and Note Taker: David Albright

Participants: My-Linh Nguyen, Dan Chang, Leah Walker, Belinda Green, John Ungvarsky, Jamelya Curtis

Discussion Notes: key understandings, outstanding questions, observations, etc.

Each State representative gave a brief overview of the status of their source water and wellhead protection activity, including successes and challenges, tracking of successful implementation and a look at their program 5 years into the future.

Brief summary:

Nevada

- Arsenic is a major source water issue; State decided that their WHPP grant funds could not be used for Arsenic work, but other grant funds are available.
- In July 08, NDEP selected a contractor to evaluate their WHPP and make recommendations about the direction and what is working/not working.
- Developed GIS data layer with SW delineations and other source water data; available internally to permitting staff at NDEP.
- SWAP module in SDWIS not being used; NDEP developing their own tracking approach that will link with SDWIS.

- 5-year vision: NDEP will have an integrated wellhead and source water protection program, they will double the number of water systems with wellhead and source protection plans in place (totaling over 50% of CWS), and they will have GIS system available to the public that contains key source water information, such as source water delineations to facilitate planning, land use decisions, etc.

California

- CA DPH is going to request establishment of a couple of wellhead positions utilizing the wellhead set-aside funds.
- DPH may also use the wellhead set-aside to fund small grant program for wellhead protection (earliest would be starting in July 2010).
- Working with UC-Davis on a GIS project, which may be able to map water system service boundaries with source water capture areas and contaminating sources.
- Due to State budget problems, Prop 50 source water grants are now frozen, but state expects that those projects will be able to proceed soon.
- SWAP module in SDWIS is not a priority for implementation at this time; state is dealing with many other critical compliance reporting issues in SDWIS that need attention first (they are a SDWIS state in progress)
- 5-year vision: State will have a wellhead/source water program in place with designated staff/management implementing the program and a designated, sustainable funding source.

Hawaii

- State is close to getting approval for GW position; also have plans to establish a designated new source water position.
- DOH started a grant program about 18-months ago using the wellhead set-aside; Co. of Maui received the first grant and is developing an ordinance based on their existing water use plan.
- DOH working with RCAC to do source water work on Maui and the Big Island with smaller water systems.
- DOH is also working with NRWA to develop wellhead/protection plan templates that water systems can use.
- 5-year vision: State will have dedicated GW and source water staff positions filled, many small water systems will have protection plans in place (through RCAC and NRWA assistance), most (if not all four) Counties will have developed and be implementing protection plans, and the Co. water departments will be well-educated about the critical importance of source water protection as it relates to long-term water sustainability.

Possible Action Items/Next Steps Identified

Identified in Session

- Hold another Western States Forum some time in the next 2 years.
- EPA Region 9 and R9 states should meet in the next year to confer on source water issues, progress, and challenges (perhaps tag on to ASDWA or other meeting?).
- EPA Region 9 to write letter to CA DPH supporting/encouraging establishment of wellhead positions/program in light of the increased level of SRF money going to the state.

Identified in Group Brainstorm
Distribute information form Western States Forum to ADEQ, in particular information on SWP/schools.
Plan and schedule annual EPA/States meeting.

Associated Issues:
D-18 Source Water Protection and Federal Lands

Who else should be involved in further discussions:
National Forest Service
BLM
USDA

Outstanding Questions
None

Issue D-17: California Integrated Regional Water Management Planning – Are Small Systems Being Included?

Convener and Note Taker: Dave Harvey

Participants: Chris Miller, Madonna Dunbar, Amy Williams

Discussion Notes: key understandings, outstanding questions, observations, etc.

The purpose was to discuss small system inclusion in the CA Integrated Regional Water Management Planning. The Department of Water Resources (DWR) has been making an effort to include small systems and Indian tribes in these watershed based plans. Each area has set aside money to assist small systems. The issue is that many large orgs such as the City of San Diego are not in a good position to do outreach and get the word out to small systems. Unfortunately the group that attended the session had little or no experience with the CA plans; hence there was no valid input on the status of small systems as they relate to the regional plans. The discussion became a general overview of the work that each state was doing with their respective plans. Most dealt only with quantity and did not address quality issues.

Possible Action Items/Next Steps Identified

Identified in Session
RCAC will follow up w/DWR on ways to better address the needs of small systems.

Identified in Group Brainstorm
None

Associated Issues:
D-16 EPA R9 and States- Coordination and Source Water Issues
D-18 Source Water Protection and Federal Lands

Who else should be involved in further discussions:
California Department of Public Health (CDPH)
Counties
CCDEH (Directors of Environmental Health)
USFS
Association of CA Water Agencies (ACWA) - Danielle Blacet
National Governors Association

Outstanding Questions
How should multi-state aquifers be dealt with?

Issue D-18: Source Water Protection and Federal Lands

Convener: Darcy Campbell

Note Taker: Elissa Callman

Participants: Colleen Williams, Margie Zhang, Jacqueline Fern, Kate Johnson, Mark Williams, Steve Cypra, John Duggan

Discussion Notes, key understandings, outstanding questions, observations

Issue: community makes best efforts for source water protection, but is impacted by public land use decisions

Lack of consistency in priority by Bureau of Land Management (BLM) and US Forest Service (USFS) of SWP between regions

BLM issue charging community cost of loss of revenue from drilling or mining

Clinton Administration MOU – Federal Multi-agency source water agreement
Water.usgs.gov/owg/cleanwater/swa

We would like reminder that MOU is still in place, or update it

- Examples of good language: BLM Environmental Assessment: Vega Plan of Development in the Grand Mesa, Uncompahgre and Gunnison National Forest
  Municipal designation in Forest plans – Tongass Alaska
  Municipal special use permits

Questions:

- How to involve USFS and BLM?
- Invite into process from beginning
- Review Forest Land Management Plans and Environmental evaluation reports
- Encourage USFS and BLM to incorporate SWP into their planning in all regions
- How to receive notification of opportunity to comment on USFS and BLM documents? At what place in process is most effective?
- What SWP data is important to share with USGS and BLM? GIS data, protection zones, community protection zones
- How to translate SWP needs to local USGS offices?

Recommendations:

EPA and USFS collaboration

- Reminder that Clinton MOU in place – or update MOU
- Margie to raise issue to USGS headquarters
- We'd like USGS and BLM directive from top down to district and rangers
- DW review + federal agencies incorporate SWP into their approach
- Circulate language from good examples

Is there anyway from top down instead of forest by forest: system by system?

Solution: Redo Interagency Agreement

Issue: "Implied" SWP
Solution:

- Have specific statements
- DW would like elevated in priority
- Publish SW Protection zones (e.g. Utah)
- Consistencies between Forest Land Management Plans

Possible Action Items/Next Steps Identified

Identified in Session
None

Identified in Group Brainstorm
Get SWP GIS layers to USFS
MOUs with USFS, BLM, DOI(?)
Eric Winiecki will provide web address (with materials and information) for a Region 10 sponsored workshop with BLM and USFS a couple years ago.

Associated Issues:
D-16 EPA R9 and States- Coordination and Source Water Issues

Who else should be involved in further discussions?
Chris Carlson, USFS
Polly Hays, Regional Hydrologist, Denver CO
BLM
Forest Service- Area Management
DOD

Outstanding Questions
How can DW issues be expressed clearly to federal land managers and affected communities?

Issue D-19: What does the future look like for EPA funding of Ground Water Protection?

Convener and Note Taker: Ed Hagan

Participants: Betsy Parry, Chan Pongkhamsing, Jay Mashburn, Bill O'Connell, Eric Winiecki, Danielle Blacet

Discussion Notes: key understandings, outstanding questions, observations, etc.

EPA did not have any insights on future EPA funding initiatives. Ground water (GW) and source water protection funding are anticipated to remain stable for the near future.
EPA indicated that very little if any stimulus funds were designated for GW protection.

The group thought climate change and carbon sequestration appeared to be areas of future interest and growth for EPA.

Nitrate impacts to ground water were identified as an issue for most states. Could EPA set a national strategy or goals for nitrates? Then we (states) could get behind it to mobilize/implement. Eric Winiecki says there is a group within EPA in DC working on a nitrate framework - not regulatory in nature, but working on a way to establish consistency and standardization for measuring nitrate trends in different areas and circumstances. He will try to research this group for us.

Our biggest shared ground water issue is nitrates:

- Are there any success stories out there?
- Are there areas where nitrate levels are actually going down? (such as a valley, region)?
- If not, are there areas where efforts have resulted in the nitrate levels stabilizing?
    - Perhaps the Columbia Basin GWMA? (Eric)
    - Idaho went from 9 areas with increasing nitrate levels over time to only 4 or 5 now that continue to increase (Ed)
- We need to ask these questions <u>nationally</u> - where are the success stories?
- Eric Winiecki suggests that in the short term we may only see stabilization of the nitrate levels, and maybe not descending levels for some 10 years or so. It takes time for effects in groundwater to become apparent.

<u>Possible Action Items/Next Steps Identified</u>

<u>Identified in Session</u>
The action item was that national standards for trend analysis should be developed to facilitate national comparison of nitrate information.

<u>Identified in Group Brainstorm</u>
Evaluate upcoming DW SRF allocations nationally for SWP/WHPP opportunities.
National standards to evaluate differences between states.
Can not make progress on SWP without incentives/$.

<u>Associated Issues:</u>
A-3 Monitoring Cow (and other Non-Point Source) Compliance
A-5 Nitrates: Funding Projects from Wellhead Protection/Source Water Protection
B-8 Collecting Data (Beans) to Count Significant Implementation Efforts
B-10 Addressing Nitrate in a Specific Valley

<u>Who else should be involved in further discussions</u>?
Congress
State wish list (priority)
GWPC
ASDWA

<u>Outstanding Questions</u>
None

Attendees

(for all or part of the Forum)

David Albright
Manager
Ground Water Office
USEPA, Region 9
75 Hawthorne St. (WTR-9)
San Francisco, CA 94105
415-972-3971 (p)
Albright.David@epa.gov

Belinda C. Arthurs
Environmental Program Specialist
City of West Sacramento
1951 South River Road
West Sacramento, CA 95691
916-617-4872 (p)
916-919-7339 (c)
916-373-9727 (f)
belindaa@cityofwestsacramento.org

Danielle Blacet
Regulatory Advocate
Association of California Water Agencies
910 K Street, Suite 100
Sacramento, CA 95814
916-441-4545 (p)
danielleb@acwa.com

Elissa Callman
Senior Engineer
City of Sacramento
Department of Utilities
1395 35th Ave
Sacramento, CA 95822
916-808-1424 (p)
916-808-1497 (f)
ecallman@cityofsacramento.org

Darcy Campbell
Hydrogeologist
USEPA, Region 8 (8EPR-EP)
1595 Wynkoop Street
Denver CO 80202-1129
303-312-6709 (p)
campbell.darcy@epa.gov

Daniel Chang
Environmental Health Specialist
Hawaii Department of Health
919 Ala Moana Blvd Ste 308
Honolulu, HI 96814-4920
808-586-4658 (p)
808-586-4351 (f)
daniel.chang@doh.hawaii.gov

Jamelya Curtis
Ground Water Office
USEPA, Region 9
75 Hawthorne St. (WTR-9)
San Francisco, CA 94105
415-972-3529 (p)
Curtis.Jamelya@epa.gov

Steve Cypra
Alaska Rural Water Association
1075 Check Street, Suite 106
Wasilla, AK 99654
907.357.1155 (p)
907-360-3160 (p)
swp@arwa.org

Glenn DeGuzman
New Mexico Environmental Department
Drinking Water Bureau
525 Camino de los Marquez
Santa Fe, NM 87505
glenn.deguzman@state.nm.us

John M. Duggan
SWAP Program Coordinator
Restoration and Protection Unit
Water Quality Control Division
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, CO 80246-1530
303-692-3534 (p)
303-691-7802 (f)
john.duggan@state.co.us

Madonna Dunbar
Resource Conservationist, WASTE NOT
Incline Village General Improvement District
Executive Director, Tahoe Water Suppliers Association
1220 Sweetwater Road
Incline Village, Nevada 89451
775-832-1212 (p)
775-354-5086 (c)
madonna_dunbar@ivgid.org

Andy Edmondson
Technical Services Manager
New Mexico Environmental Department
Drinking Water Bureau
525 Camino de los Marquez
Santa Fe, NM 87505
505-476-8631
andy.edmondson@state.nm.us

Jacqueline Fern
Drinking Water Protection Specialist
Oregon Department of Environmental Quality
1102 Lincoln Street - Suite 210
Eugene, OR 97401
541-686-7898 (p)
Fern.Jacqueline@deq.state.or.us>

John Geach
EPA Montana Office, Federal Building
10W. 15th Street, Suite 3200
Helena, MT 59626
406-457-5005 (p)
406-457-5055 (f)
1-866-457-2690 (p)
geach.john@epa.gov

Belinda G. Green
California Rural Water Association
4125 Northgate Boulevard
Sacramento, CA 95834
209-658-2918
800-833-0322
209-722-3670
belindag@cwo.com

Edward Hagan
Ground Water Program Manager
Idaho Department of Environmental Quality
Water Quality Division
DEQ State Office
1410 N. Hilton
Boise, Idaho 83706
208-373-0356 (p)
ed.hagan@deq.idaho.gov

Melinda Harper
Idaho Rural Water Association
6684 West Overland Road - Boise, ID 83709
800-962-3257 (p)
208-343-7001 (p)
208-343-1866 (f)
harperm@idahoruralwater.com

Thomas Harter
Robert M. Hagan Chair, Water Management and Policy
Department of Land, Air, and Water Resources
125 Veihmeyer Hall
University of California
Davis, CA 95616-8628
530-752-2709 (p)
ThHarter@ucdavis.edu

Dave Harvey
Southern CA Regional Environmental Manager
Rural Community Assistance Corporation
417 East Carmel St. #104
San Marcos, Ca 92078
760-492-2543 (p)
760-471-9771 (f)
DHarvey@rcac.org

Barry Hill
Regional Hydrologist
USDA-Forest Service
Pacific Southwest Region
1323 Club Drive
Vallejo, California 94592
707-562-8968 (p)
bhill@fs.fed.us

Darla Inglis
Low Impact Development Center, Inc.
P.O. Box 747
San Luis Obispo, CA 93406-0747
805-540-9772 (p)
dinglis@lowimpactdevelopment.org

Kate Johnson
Environmental Program Manager
Administrative Services Section
Utah Department of Environmental Quality
Division of Drinking Water
P.O. Box 144830
Salt Lake City, Utah 84114-4830
801-536-4206 (p)
801-674-2553 (c)
801-536-4211 (f)
katej@utah.gov

Ted Johnson
Chief Hydrogeologist
Water Replenishment District of Southern California
4040 Paramount Blvd.
Lakewood, CA 90712
562-275-4240 (p/f)
tjohnson@wrd.org>

Luana Kiger
Special Assistant to STC
USDA NRCS
430 G Street, Suite 4164
Davis, CA 95616
530-792-5661 (p)
530-792-5790 (f)
luana.kiger@ca.usda.gov

Christian A. Kropf
Senior Hydrogeologist
Washoe County Department of Water Resources
4930 Energy Way
Reno, NV 89502
775-636-5573 (c)
775-954-4654 (p)
775-954-4610 (f)
CKropf@washoecounty.us

Lori Lewis
Regional Facilitator
USEPA, Region 9
75 Hawthorne St. (OPA)
San Francisco, CA 94105
415- 947-4259 (p)
Lewis.Lori@epa.gov

Jay Mashburn
Rural Community Assistance Corporation
984 24 Rood
Grand Junction, CO 81505
970-243-7087 (p)
970-201-8661 (c)
jmashburn@rcac.org

Chris Miller
Public Drinking Water Protection
State of Alaska
DEC/EH/DW
907-269-7549 (p)
907-269-3990 (f)
chris.miller@alaska.gov

My-Linh Nguyen
Bureau of Water Pollution Control
Nevada Division of Environmental Protection
901 S. Stewart St., Ste 4001
Carson City NV 89701
775-687-9422 (p)
775-687-4684 (f)
mnguyen@ndep.nv.gov

Bill O'Connell
National Rural Water Association
Source Water Program Manager
580-251-9080 (p)
580-736-6259 (c)
billo@nrwa.org

Joe Oliver
Monterey Peninsula Water Management District
5 Harris Court, Bldg. G
P.O. Box 85
Monterey, CA 93942-0085
831-658-5640 (p)
831-644-9560 (f)
joe@mpwmd.dst.ca.us

Betsy Parry
Technical Services Unit
Drinking Water Program
Oregon Department of Human Services
541-726-2587 x30 (p)
Betsy.L.Parry@state.or.us

Chan Pongkhamsing
Drinking Water Unit
USEPA, Region 10
1200 Sixth Ave, Suite 900 (OWW-136)
Seattle, WA. 98101
206-553-1806 (p)
206-553-1280 (f)
Pongkhamsing.Chan@epa.gov

Robert S. Raucher
Executive Vice President
Stratus Consulting Inc
PO Box 4059
Boulder, CO 80306-4059
303-381-8000 (ext 216) (p)
303-381-8200 (f)
braucher@stratusconsulting.com

Alexis Strauss
Director
Water Division
USEPA, Region 9
75 Hawthorne St. (WTR-1)
San Francisco, CA 94105
415-972-3572 (p)
Strauss.Alexis@epa.gov

Jan R. Sweigert
District Engineer
CA Department of Public Health
Drinking Water Program - Monterey District
1 Lower Ragsdale Drive, Bldg. 1, Ste. 120
Monterey, CA 93940
831-655-6934 (p)
831-655-6944 (f)
Jan.Sweigert@cdph.ca.gov

Kathleen Thomasberg
Senior Hydrologist
Monterey County Water Resources Agency
893 Blanco Circle
Salinas, CA 93901
831-755-4963 (p)
831-424-7935 (f)
thomasbergk@co.monterey.ca.us

David Tysz
Source Water Protection Specialist
Evergreen Rural Water of Washington
PO Box 2300
Shelton, WA 98584
360-981-1516 (p)
Dtysz@erwow.org

John Ungvarsky
Environmental Scientist
USEPA, Region 9
75 Hawthorne St. (WTR-9)
San Francisco, CA 94105
415-972-3963 (p)
Ungvarsky.John@epa.gov

Leah Godsey Walker
Chief, Technical Programs Branch
CA Department of Public Health
1616 Capitol Avenue, MS 7400
P.O. Box 997377
Sacramento, CA 95899-7377
916-449-5600 (p)
Leah.walker@cdph.ca.gov

Tim Walls
Source Water Specialist
Rural Water Association of Arizona
1955 W Grant Rd., Ste 190
Tucson, AZ 85745
Ph: 520-620-0230 (p)
520-620-0601 (f)
timwalls@vtc.net

Amy Williams
Idaho Department of Environmental Quality
Water Quality Division
DEQ State Office
1410 N. Hilton
Boise, Idaho 83706
208-373-0115 (p)
amy.williams@deq.idaho.gov

Colleen Williams
Source Water Specialist
Colorado Rural Water Association
303-449-2621 (p home)
720-938-2631 (c)
719-545-6748 (p office)
colleen@jimtown.org

Mark Williams
Water Quality Program Coordinator
Boulder County Environmental Health
3450 Broadway
Boulder, CO 80304
303-441-1143 (p)
303-441-1468 (f)
mwilliams@bouldercounty.org

Eric Winiecki
Drinking Water Unit
USEPA, Region 10
1200 Sixth Ave, Suite 900 (OWW-136)
Seattle, WA. 98101
206-553-6904 (p)
206-553-1280 (f)
Winiecki.Eric@epa.gov

Manjiang "Margie" Zhang
Regional Hydrogeologist / Province Geologist
USDA Forest Service Region 5
602 South Tippecanoe Ave.
San Bernardino, CA 92408-2607
909-382-2781 (p)
909-383-5770 (f)
mzhang@fs.fed.us