



OpenLine

The Newsletter For and About Utah's Water Supply Operators

Volume 19

Utah State Division of Drinking Water

Summer 2008

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The OpenLine is published annually by the Division of Drinking Water. The articles center around water system operators and managers. Articles submitted to the OpenLine do not necessarily reflect the views or opinions of the Drinking Water Board or the Operator Certification Commission. Please submit questions, comments or articles to:

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Growth

By Kenneth H. Bousfield, Director
Division of Drinking Water

There is a lot of growth occurring within the State of Utah, and it is impacting water systems. From a water system perspective, it is important to ensure that this growth is supported by a safe and a reliable supply of drinking water. In this article, I will attempt to raise issues that must be considered to ensure that a safe and reliable supply of water is made available to all water users.

The growth I am referring to can occur in a number of different ways. It could involve adding connections to existing distribution system pipelines. It could involve the development of previously undeveloped land, and may include the construction of additional: source capacity, storage facilities, pipelines and related infrastructure, and then connecting these facilities to an existing water utility. It could also involve the creation and development of an entirely new system.

With this growth, a corresponding increase use of: source waters, storage and delivery systems will occur. The specific requirements for source, storage and distribution systems are set forth in a related article written by Ying-Ying Macauley, the Division's Engineering Section Manager (see page 19). As growth occurs, it is important that water utilities have

sufficient capacity in all of these areas to ensure that both the existing water users as well as the newly added water users are provided a safe and reliable supply of drinking water.

The Division of Drinking Water provides a valuable plan review service to assist water utilities in their evaluation of the adequacy of their infrastructure to supply the needs of all water users. A public water system must submit plans, to the Division, for any proposed construction of: a) additional source capacity, b) storage, c) transmission and distribution piping, d) pumping facilities e) water treatment facilities or related construction. This is an important consideration, and a valuable service available to water utilities throughout the state. As part of this evaluation, we will evaluate the proposed facilities from a capacity point-of-view. This means that we will take into account the minimum capacity requirements for source, storage and distribution facilities in regard to satisfying the needs of existing and new water users. This review ensures, from the water utility perspective, that the system will still be able to still provide a safe and a reliable supply of water to all.

The construction of new facilities to meet the needs of new water users costs money and the question often arises as to who is responsible to pay this cost. All of this is dependent upon what ordinances, rules or requirements are in place prior to the (continued page 2)

Growth (continued)

consideration of supplying water to new customers. It is important that water utilities address such issues as to how and when and under what conditions development will occur as well as what requirements developers will have to meet **before** a request is made of the utility.

Regarding the question of who pays, it is important to note that your water system, as it exists now, has a number of assets associated with it. These assets include your water rights, source capacity, source diversion works, storage facilities, and distribution facilities. In most cases, the water users jointly own this collection of assets or resources. Hydraulically, when an individual connects on to your system, they become a full partner, as the infrastructure, relying on its given capacities, will attempt to provide water to the new connection. Note that the new connection relies on all the assets of the utility for its service. To clarify this concept and to drive home the point, I would like to express it by using an analogy between water and money. It is like this connection has signatory rights to write checks on the water utilities' bank account.

As the analogy suggests it is important for a utility to protect itself by requiring new connections to bring assets into the deal. The assets that new connections bring to the deal take different forms. They may involve the assessment of Impact Fees, the contribution of water rights and/or the construction of infrastructure and then turning it over to the utility. For help in developing ordinances or for an outline of issues to be addressed, I recommend that you contact Curtis Ludvigson of the Rural Water Association of Utah at (801) 756-5123 for help.

There is another area of growth that I am particularly concerned with.

This concerns a few homes combining together to form a water system. I call such systems "sub-public" because they are exempt from regulation by the Division because they serve fewer than 15 connections and fewer than 25 people. It is not uncommon, over time, for these small systems to expand to the point where they become large enough to be regulated. When they become regulated they lack the managerial, technical and financial capacity to properly maintain their system in compliance with the Division's rules. Further they frequently lack the hydraulic capacity to provide a reliable supply of water under all operating conditions. Some sub-public water systems are created that way with the express purpose of avoiding regulation by the Division. There are occurrences where a single entity, owning a large parcel of land, creates a number of sub-public water systems. Then as the land fills in with homes a situation exists where individual homeowners combine to request that the county or a nearby water utility take over the operation of the system. Understandably, the county or the water utility would probably recognize that the infrastructure serving the patchwork of sub-public systems as being woefully inadequate. Consequently they would be unwilling to take it over without major upgrades.

To rectify the situation, counties or water utilities frequently turn to the Division for State or Federal financial assistance. Typically they want substantial grant monies to fix the situation, which the Division feels should not have been allowed to be constructed in the first place. While the Division cannot change the past, we can do something about the future.

The Division believes that plan review and compliance with the rules

is the only way to truly address the problem created with sub-public systems. As a first step in enabling this to happen, the Division has entered into an agreement with the Division of Public Utilities (DPU) as they have authority over sub-public systems. Further, the Division is working on establishing partnerships with local jurisdictions who will act as gate keepers. With the involvement of local authorities, (i.e.: building permit authority, subdivision platting authority or other similar local authorities) a local requirement could be put in place to require state review. This local requirement, combined with the Division's agreement with DPU would ensure that an adequate sub-public system would be constructed. Further the cooperation between the State agencies and the local jurisdiction could also ensure that nearby sub-public water systems have common piping materials, common pressure zones and mutually protected drinking water sources. To aid in our effort to establish these local partnerships, the Division has an agreement with the Rural Water Association of Utah (RWAU) where they will take the message to the local jurisdiction and facilitate the needed agreements and ordinances.

In conclusion, if you haven't thought about growth, it is appropriate to start thinking about it, so that you will be able to continue to provide a safe and reliable supply of water for existing as well new connections as they occur. We at the Division are also thinking about growth and want to do our part in ensuring that all public drinking water systems provide a safe and reliable supply of water to their water users.

What's in your water?

By Kim Dyches, Manager
Field Services Section
Division of Drinking Water

Recently we celebrated Water Week, May 4-10. Our Division had the assignment to show a video called *Running Dry* that showed water problems around the world. There were some interesting talking points questions at the end of the flyer and I was able to find some interesting facts on answers to the questions by doing a search on the internet. Interestingly, 70% of the earth is covered in water and only 3% is drinkable. However, only 1% of that 3% is usable because 2% are the ice caps.

The first question posed from the video was, "It is said water is the new oil. Do you agree?" So I did a search on bottled water, which is the most expensive water, and came up with some interesting results. Did you know that the cost of bottled water is 240 to 10,000 times more than tap water? Some bottled water runs \$10 per gallon. Throughout the world consumption of bottled water in 2004 reached 41 billion gallons. That is an increase of 57 percent from the five previous years. During one year, the consumption of plastic bottles by Americans consumes more than 47 million gallons of oil. That is enough oil to take 100,000 cars off the road and reduce the output of one billion pounds of carbon dioxide from the atmosphere, according to the Container Recycling Institute. In California alone more than one billion plastic water bottles end up in the California trash each year. Those plastic bottles take up valuable landfill space, they leak toxins into the groundwater and they take 1,000 years to biodegrade. That means bottled water may be harming our future water supply.

This also means that the rapid growth in the bottled water industry will mainly cause water extraction to be concentrated in communities where bottling plants are located. The packaging and shipping of bottled water also consumes energy. As water professionals, our message to the public should be that the standards for tap water are stricter than bottled water. To see what's in your brand of bottled water go to <http://www.nrdc.org/water/drinking/bw/appa.asp>. Also, the public we serve should know that EPA sets standards for approximately 90 contaminants in drinking water.

The second question the video posed was, "If we can settle the problem of water, we can have peace." Do you agree? I thought in answering this question, one had to look at the history of water in regions where some of the video was filmed. In the Middle East, water has always been a main concern. The video pointed out that the problem in the Middle East isn't so much having enough; it is having enough clean drinkable water. So I did some research from the oldest history book available, the Bible. In several places you find that contaminating or covering water supplies were used as weapons and war strategies. In 2 Chronicles 32:2-4, 30, around 701 B.C., King Hezekiah diverted the water from the spring of Gihon to the pool of Siloam, inside the city walls to help defend Jerusalem against attacks by the Assyrians. The diversion tunnel was made by digging a conduit for the water through over 1700 feet of limestone rock. King Hezekiah ordered that the fountains that were outside of the city be covered. This was to deny the Assyrians easy access to the water. The Hezekiah tunnel still exists today. U.N. officials say that the current shortages of water in the

areas east and west of the Jordan suggest that the next war in the Middle East could result from disputes between Israel and its Arab neighbors over water, an especially precious resource in those arid lands. U.N. officials have expressed fear that a war over water could erupt in the next 50 years. "Water issues may be a contributing factor to breaking peace, like oil was in the past," said Wally N'Dow, secretary-general of the second U.N. Conference on Cities. "More than one billion people cannot get clean drinking water," he said, "Dirty water causes 80 percent of diseases in the developing world." So my point is your guess is as good as mine. As long as there is political unrest around the world, water will be used as a weapon. Information about water systems in the United States was found on the computers seized by the military in Afghanistan. Until the powers that be want peace, there doesn't appear to be any hope of things changing much.

The third question posed was, "It is estimated that every day water or lack of takes the lives of over 14,000 people - and the problem threatens to get even worse around the world. What kinds of problems do we have in the United States?" We in the United States have had some problems of our own. There are examples like the severe 1993 [Cryptosporidium](#) outbreak in [Milwaukee, Wisconsin](#), which led to over 100 deaths and over 400,000 illnesses. Recently in Alamosa, Colorado, nearly 250 people became ill from salmonella bacteria. Recently the Associated Press issued an article on pharmaceuticals and personal care products in the drinking water supply. Obviously those types of contaminants in our water supply are a concern. The (continued page 4)

What's in your water (continued)

problem is that many of the results were found in parts per trillion and trace amounts. If you took something the size of an M&M and cut into one trillion pieces, then took one piece of that trillion, then put it in a liter of water, you would have levels of what they have detected. With the sophisticated equipment we have nowadays there really is no zero. We find either trace or non-detectable amounts. So in doing our part we can properly dispose of drugs and antibiotics. You can find out where to dispose of your old drugs by going to www.MedicationDisposal.utah.gov/funding.htm.

The fourth question was, "This is an election year. Why is it important to get out the word about water now?" This was an interesting question, so not to make this article political I did a search on each candidates name along with water. Senator Obama's search came up with a water bottle incident where a woman fainted and he threw her his water bottle. Senator Clinton's came up with her promise to keep New York's water clean. Then Senator McCain's search was his position on water boarding. So there doesn't appear to be any real push from any of the Presidential candidates on water policies within the United States, at least by doing an internet search from the first page of most

popular links. From this, we in the water business need to educate our local, State and Federal leaders on the importance of having safe drinking water. We also need to educate them and the public on conserving our precious supply of water.

The last question posed was, "Do you think people have the political will to solve this crisis?" This question I am going to leave up to you the reader. We can wait until we have no other alternative or we can act by taking proactive measures to educate people in general. It is up to us to act now to do our part in preserving this precious resource for future generations. ■

Update on radium-228 sampling

By Rachael Cassidy
Environmental Scientist
Division of Drinking Water

Last year we notified all community water systems that they are required to take two quarterly radium-228 samples. There were many training sessions on this new sampling requirement and most community water systems have started that sampling. Just as a reminder, this is only a requirement for community systems. We set the following schedule for systems to complete this sampling requirement; however you can complete it as soon as you would like:

System Population:	Two radium-228 samples are due between:
3,300 and below	October 1, 2008 and September 30, 2009
3,301 and above	October 1, 2007 and September 30, 2008

Once the two quarterly samples are completed please contact Rachael Cassidy at 801-536-4467 or rcassady@utah.gov to notify us that it is done. After it has been completed the radium-228 sampling requirement will

just become a part of your regular radionuclides sample. On your monitoring schedule the radium-228 requirement will be deleted and become part of the regular radionuclide requirement. All certified laboratories will test for gross alpha and radium-228 when you request a radionuclide sample. The two laboratories in Utah that can test for radium-228 are the Utah State Lab (801-584-8400) and Chemtech Ford (801-262-7299).

This is a source sampling requirement, exactly like your other chemical samples such as nitrate and inorganics and metals. This means that the radium-228 sample should be taken at the source. But you can also use your source groupings which are listed in your monitoring schedule. If you have any questions about your source groupings or want to check to make sure they are correct, then contact us and we can check them. Anytime you need an updated copy of your monitoring schedule please just ask. We can email, mail, or fax that to you at anytime.

You can send us copies of your radium-228, or other chemical samples, to our ddwreports@utah.gov email address. All of the rules staff checks this email inbox regularly for data. Or you may email it directly to Rachael Cassidy. We also accept data by fax (801-536-4211) and mail (Division of Drinking Water, P.O. Box 144830, Salt Lake City, Utah 84114).

For more information about radium-228, or any of your chemical monitoring requirements, please contact Rachael Cassidy at 801-536-4467, or rcassady@utah.gov. ■

Division of Drinking Water

What We Do and Don't Do

What We Do

Under the direction of the Drinking Water Board, the Utah Division of Drinking Water does the following tasks:

1. We regulate “public drinking water systems” (systems that serve 15 connections or serve 25 people for at least 60 days per year).
2. We implement a source protection program involving drinking water source watersheds.
3. We review and approve plans and specifications for construction of facilities for public water systems.
4. We provide financial assistance to public water systems for the purpose of building infrastructure. We also work cooperatively with other funding agencies in this effort.
5. We train and certify water system operators, and we track continuing education of operators.
6. We monitor the effectiveness of water treatment plants.
7. We implement the EPA rules relating to drinking water quality, monitoring and treatment.
8. We implement a cross connection control program to ensure that harmful substances do not backflow into drinking water distribution systems.
9. We certify water utility personnel indicating that they’re qualified to run a cross connection control program for their utility. We certify backflow technicians indicating that they’re qualified to test backflow equipment. We certify trainers indicating that they’re qualified to train on cross connection control programs and train backflow technicians.
10. We periodically inspect water utilities to evaluate: a) the infrastructure, b) their written records and c) determine what rules are applicable to the utility.
11. We provide training to consultants and water utility people on all aspects of the Division’s programs.
12. We coordinate with our partners in ensuring a safe and reliable supply of drinking water. Our partners include: a) water utilities, b) consultants, c) the Rural Water Association of Utah, d) the Intermountain Section of the American Water Works Association, e) local health departments, f) certified laboratories, g) the Division of Water Rights, h) the Division of Water Quality, i) EPA, and j) drinking water administrators of other states.
13. When technical and financial assistance are ineffective in ensuring a safe and reliable supply of drinking water, we initiate enforcement actions.
14. We implement a water system rating program which measures compliance with the Division’s rules.
15. We direct water utilities to investigate customer complaints relating to quality or supply. Depending on the

findings and reports, the Division may also participate in the investigation.

16. We respond, in cooperation with the utility, to emergencies and we provide training, guidance and encouragement to utilities on preparing vulnerability assessments and emergency response plans.
17. We witness well grout procedures on wells intended to be used as public drinking water sources.
18. We perform all administrative tasks and associated functions to enable us to accomplish the above identified tasks.

What We Don’t Do

1. We don’t collect water samples (water utilities do this).
2. We don’t analyze water samples (certified laboratories do this).
3. We don’t deal with bottled water (the Department of Agriculture and Food does this).
4. We don’t regulate single home water systems.
5. We don’t regulate home storage of drinking water (we do have a guidance document regarding home water storage available on our web page).
6. We don’t measure: a) snow depths, b) open water reservoir levels, c) stream flows, or d) monitor the overall supply of water within the State (the Division of Water Resources does this).
7. We don’t regularly monitor ambient surface water quality (the Division of Water Quality does this).
8. We don’t issue well drilling permits or grant water rights (the Division of Water Rights does this).
9. We don’t compel water utilities to fluoridate. (This may be done on a local level.)
10. We don’t regulate the water rates that utilities charge (City, Town and District Councils and Boards do this for publicly owned facilities, and the Division of Public Utilities regulate this for private water companies).
11. We don’t provide water connection services or engage in construction activities.
12. We don’t compel water utilities to turn an individual customer’s water back on after the utility has shut off the supply for non payment of water bills.
13. We don’t compel individuals to connect to a public drinking water system.
14. We don’t administer the State’s plumbing code or offer clarifying comments on the code. (The Division of Occupational and Professional Licensing does this). ■

www.drinkingwater.utah.gov

Drinking Water Board

By Linda Matulich
Executive Secretary
Utah Division of Drinking Water



THE DRINKING WATER BOARD was established in 1979. The Board governs the Drinking Water Rules.

The Cross Connection Control Commission and the Operator Certification Commission serve the Board. The two Commissions work closely with the water operators throughout the state. The Commissions inform the Board of any changes or anything new that happens in their programs. When a Commission member reapplies or when a new Commission member applies to be on the Commission, their request goes before the Board for approval.

The Drinking Water Board has 11 members. The Board members are appointed by the Governor. The members can hold two 4-year terms. The members represent the public-at-large, local health departments, water districts, professional engineers, municipal government, science, industry, and environmental health. A Drinking Water Board roster is included with this article.

The Drinking Water Board holds various meetings in Utah during the year. The members visit various water systems they have helped with funding on a water system project. The members then hold the Board meeting after the tour. A schedule for the 2008 Drinking Water Board meetings is also included with this article.

The Division of Drinking Water’s website address is: www.drinkingwater@utah.gov. Be sure to visit the Drinking Water Board’s link on our website to see the information we have about the Board, the Board roster (with pictures of the Board members), the meetings, minutes, packets, etc.

If you would like to be added to the e-mail list on any upcoming Board meetings or if you would like any more information about the Drinking Water Board, please call Linda Matulich at (801) 536-4208 or e-mail her at lmatulich@utah.gov. ■

DRINKING WATER BOARD 2008 MEETING SCHEDULE

Date	Place	Tour/Work Meeting	Notes
January 11, 2008	Salt Lake City	Board Work and Work meeting	
February 29, 2008	St. George	Rural Water Conference & Board meeting	
May 9, 2008	To be determined	Tour and Board meeting	To be determined
July 11, 2008	To be determined	Tour and Board meeting	To be determined
September 12, 2008	Price	Utilities meeting & tour Board meeting	Meet with Price River Water Improvement District & Helper
November 21, 2008	Salt Lake City	Combined with the Water Quality Board	

(continued page 7)

DRINKING WATER BOARD ROSTER
 STATUTE CITATION: UTAH CODE ANNOTATED §19-4-103

Name/Address	Political Affiliation	Secretary/Phone	Represents	Expiration Date
Anne Erickson, Ed.D., Chairman ericksan@aol.com SRF/Conservation Committee	(I)	Fax: 801-942-0587	Public-At-Large	Second Appointment May 2005 – 2009
Myron Bateman, Vice Chairman mbateman@utah.gov SRF/Conversation Committee	(I)	Office: 435-277-2461 Fax: 435-843-2304	Local Health Department	Second Appointment May 2005 – 2009
Daniel Fleming Danielf2368@yahoo.com	(I)	Office: 435-678-2507 Fax: 435-678-3312	Water District	First Appointment May 2007 - 2011
Ronald W. Thompson rwthompson@utah.gov or rmmullin@utah.gov SRF/Conservation Committee	(R)	Office: 435-673-3617 Fax: 435-673-4971 Secretary: Roberta	Water District	Second Appointment May 2007 – 2011
Paul Hansen, P.E. paul@paulhansenassociates.com	(R)	Office: 801-816-9119 Fax: 801-816-9118	Professional Engineers	First Appointment May 2005 – 2009 (Appointed 2/27/06)
Kenneth Lee Bassett kbassett@vernalcity.org	(I)	Office: 435-789-2255 Fax: 435-789-2256	Municipal Government	First Appointment May 2005 – 2009
Petra Rust SRF/Conservation Committee petra_rust@pepperidgefarm.com or rusts4@AOL.com	(D)	Office: 435-750-8470 Fax: 435-750-8474	Industry	Second Appointment May 2007 - 2011
Jay W. Franson, P.E. jfranson@fransoncivil.com SRF Conservation Committee Operator Certification Commission Cross Connection Commission	(R)	Office: 801-756-0309 Fax: 801-756-0481 City: 801-756-5751	Municipal Government	First Appointment May 2005 – 2009 (Appointed 2/27/06)
David K. Stevens, Ph.D. david.stevens@usu.edu	(I)	Office: 435-797-3229 Fax: 435-797-3663	Science	Finishing Laurie's Second Appointment May 2007 – 2011
Helen Vara Graber, Ph.D. hgraber@socwk.utah.edu	(I)	Office: 801-581-8276	Public-At-Large	First Appointment May 2005 – 2009
Richard W. Sprott rsprott@utah.gov	(I)	Office: 801-536-4402 Fax: 801-536-0061 Secretary: Debbie	Environmental Health	n/a

Electronic Document Management

*By Kate Johnson
Administrative Services Manager
Division of Drinking Water*

A quiet, but revolutionary, change is going on at the Division. The Department of Environmental Quality has implemented an Electronic Document Management (EDM) System. We are in the middle of an ambitious project to scan all of our water system files and store them electronically. This means better and quicker access to historical information about water systems, more timely and accurate response to information requests, and streamlining of our work in the Division, as more of it is done within the EDM system. What else does it mean to you? We certainly encourage you to submit documents to us electronically. We can file them



immediately in the EDM system. That should mean less expense to you, and faster transmittals. We can also retrieve documents for you electronically, if we have something in our office that you need a copy of. Someday, you may be able to directly access some of this information yourself!

Stay tuned for future developments, submit documents to us by e-mail, if that's convenient for you, and let us know if you have any questions. ■

Customer Satisfaction Survey

*By Kate Johnson
Administrative Services Manager
Division of Drinking Water*

The Division has been collecting opinions from our customers since last summer regarding what kinds of services you look for from us, and how we can do our jobs better. The survey was conducted through Survey Monkey, an online survey web site. We mailed notices to all water systems in the state to announce the survey, made it available online at the Rural Water Association of Utah conference, and through links on RWAU's web site and our web site. Here's what we've found so far:

- Most of the people who seek help from us directly, or through our web site, are operators or managers (85%), and most represent very small (40%) community (70%) systems. Most are looking for information on current monitoring requirements, source protection plans and reviews, sanitary surveys, cross connection/backflow training, construction plan review and approval, operator training, current water system rating, and current compliance status.
- Most people feel that they usually get the information they need in a fairly timely way, although many people would like to see us improve and enhance the information available through our web site. Many people also feel that the information we provide isn't always as clear, readable and understandable as it could be.

The Division cares about what you think, and over the next year we'll be looking for ways to improve our service based on this feedback. Please visit our web site (drinkingwater.utah.gov) to find out what changes and improvements we're making, and always feel free to advise us on ways that we can provide better assistance to you! ■

www.drinkingwater.utah.gov

The Future of DBPs and Beyond

*By Brad Holdaway
Environmental Scientist
Division of Drinking Water*

This last year has flown by. We have been busy traveling throughout the State doing trainings and workshops on Stage 2 and LT2. It has been a pleasure to meet many of you and I have gained huge respect for the great job you do and the many hats you wear, especially with the smaller systems. Your service in the water industry is essential for the communities where you live; although I know many times it goes unrecognized until there is a problem.

We have had a goal to help the smaller water systems get prepared to meet the Stage 2 DBP requirements. A big part of this is the IDSE (Initial Distribution System Evaluation). Most of the schedule 3 and 4 systems are now well on their way through this process as the deadline for schedule 4 systems was April 1st, of this year. If you are unaware of this regulation, please contact me A.S.A.P. to get the information you need to come into compliance. Contact Brad Holdaway by telephone (801) 536-0063, or email bholdaway@utah.gov.

Looking forward... if your system is doing Standard Monitoring as part of the IDSE, you basically have two years from your required start date to complete one year's worth of sampling for THMs and HAA5s. This monitoring should define the hot spots for DBPs that exist in your distribution system. If DBPs are known to be high, you should be communicating with city leaders to get the ball rolling for the necessary engineering to reduce DBPs to a safe level.

The following schedule outlines upcoming Stage 2 milestones:

System Schedule	Population	Complete Standard Monitoring	Submit IDSE Report	Begin Compliance Monitoring
Schedule 1	At least 100,000	September 30, 2008	January 1, 2009	April 1, 2012
Schedule 2	50,000 to 99,000	March 31, 2009	July 1, 2009	October 1, 2012
Schedule 3	10,000 to 49,000	September 30, 2009	January 1, 2010	October 1, 2013
Schedule 4	Less than 10,000	March 31, 2010	July 1, 2010	October 1, 2013

The State now has primacy so please don't send results to EPA. We will continue doing workshops throughout the State to help systems meet the upcoming requirements and to help you prepare for Stage 2 Monitoring. We will work closely with Rural Water Association to let you know when they are scheduled.

Also, sending in reports to DDWReports@utah.gov is proving hugely successful. Reports are getting to whom they should in a timely manner. One problem that we are having, however, is when some systems email in their reports and also fax or mail them. This results in duplication of effort on both our parts and some reports getting entered into the system multiple times. When you email in your report you should get a reply from an auto responder to let you know the report has been received. This is by far the simplest and most efficient way to send in your reports.

As always, keep up the good work, keep the DBPs low, and keep providing safe drinking water. Thanks for the good work you do!

When to sample for lead and copper? June, July, August and September only

*By Don Lore
Environmental Scientist
Division of Drinking Water*

It is late in December and I suddenly realize that lead and copper sampling is due this year! I am so glad that I remembered in the nick-of-time. Wrong!

Actually I am already late. According to the United States Environmental Protection Agency (that's the EPA to you and me), lead and copper samples are supposed to be taken in the warmest months of the year. So, if I am remembering now in December, I am already about three to six months late! Well, better late than never, right? Oh no, wrong again! If I sample in the winter, I will be guilty of a monitoring violation. (The EPA gets really annoyed if you do that.)

Okay, what have I learned? Lead and copper samples should be taken in the summer! For water systems in Utah, that means during June, July, August and September only! (Unless, of course, the water system is not open during the summer. But is that very likely? Who doesn't use water during the summer?)

So, all community and non-transient non-community water systems need to take lead and copper samples during the summer. How many? Well, that depends on the number of people who drink your water all the time. Let's look at the chart the experts provide:

NUMBER OF LEAD AND COPPER SAMPLING SITES

System Size (# People Served)	# of Sites (Standard Monitoring)	# of Sites (Reduced Monitoring)
Greater than 100,000	100	50
10,001 to 100,000	60	30
3,301 to 10,000	40	20
501 to 3,300	20	10
101 to 500	10	5
100 or less	5	5

Actually, I just copied this chart from the Rule 309-210-6 (3) TABLE 210-3 on the internet at: www.drinkingwater.utah.gov.

IF YOU HAVE ANY QUESTIONS, you can always contact Don Lore at (801) 536-4204 or dlore@utah.gov. Yes that is me, I am an Environmental Scientist with the Utah Division of Drinking Water and they put me in charge of the Lead and Copper Rule in Utah. Thanks ■



LT2ESWTR updates and deadlines

The Long Term 2 Enhanced Surface Water Treatment Rule

By Mark Hansen
Environmental Scientist
Division of Drinking Water

The Environmental Protection Agency (EPA) finalized the LT2 ESWTR on January 5, 2006. This rule is part of a series of rules, the “Microbial-Disinfectants/Disinfection Byproducts Cluster.” The intent of this rule is to improve control of microbial pathogens while minimizing public health risks of disinfectants and disinfection byproducts (DBPs). The expectations of this rule are to reduce both illnesses and death associated with cryptosporidiosis. The LT2ESWTR primarily affects water systems that have surface water sources, and/or ground water sources that are under the direct influence of surface water (GWUDI). The key provisions of the LT2ESWTR include:

- Source water monitoring for Cryptosporidium, with reduced monitoring requirements for small systems.
- Additional Cryptosporidium treatment technique (TT) provisions for certain filtered systems based on source water Cryptosporidium concentrations.
- Inactivation of Cryptosporidium for all unfiltered systems.
- Disinfecting profiling and benchmarking to ensure continued levels of microbial protection while public water systems (PWSs) take necessary steps to comply with the new DBP standards.

Because the LT2ESWTR and the Stage 2 Disinfection Byproduct Rule are intertwined, Brad Holdaway and I have jointly given several training presentations in the last ten months, providing information for those systems that are affected by these rules. The implementation of this rule includes certain deadlines. The rule categorizes water systems based upon their population.

Schedule 1: Large systems serving >100,000

Schedule 2: Large systems serving >50,000 and <100,000

Schedule 3: Large systems serving >10,000 and <50,000

Schedule 4: Small filtered systems (serving fewer than 10,000)



Systems may choose to use Cryptosporidium data collected before the system is required to begin monitoring.

The deadlines have passed for Schedule 1, 2, & 3 Systems to submit the required data and documents for grandfather requirements. Those required to monitor should have already begun that process by now. (Schedule 3 systems no later than April 1, 2008.)

Upcoming compliance deadlines

Schedule 4 systems: By **July 1, 2008**, submit Intent to Grandfather Notice, with sampling location description, or intent to install full treatment. Submit Grandfathered Data **October 2008**.

For those that qualify to monitor for E. coli in lieu of crypto, monitoring begins **October 2008**

Also those systems that must monitor for crypto, monitoring begins **April 2010** because they exceed the E. coli trigger or do not monitor source water for E. coli.

Systems must conduct a second round of monitoring six years after completing the initial round to determine if source water conditions have changed significantly.

The above information and additional information, along with the acronyms (page ix), can be found in the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) Implementation Guidance at:

http://www.epa.gov/safewater/disinfection/lt2/pdfs/guide_lt2_stateimplementation.pdf ■

What do you mean... Our system is not approved?

By John Oakeson
Environmental Scientist
Division of Drinking Water

The Utah Division of Drinking Water (Division) assigns a rating to each public water system in order to provide a concise indication of its condition and performance. This rating is assigned based on the evaluation of the operation and performance of the water system in accordance with the requirements of the Utah Drinking Water Rules. The three water system ratings are: "Approved," "Not Approved" and "Corrective Action." System ratings are determined based on a point system outlined in R309-400, the IPS Rule. An "Approved" rating means that the public water system is operating in substantial compliance with all the Rules as measured by the IPS Rule. A "Not Approved" rating means the water system does not fully comply with the Rules as measured by this rule. A "Corrective Action" rating means a provisional rating for a public water system not in compliance with the Rules, but making all the necessary changes outlined by the Executive Secretary to bring them into compliance. The approval rating threshold varies depending upon the type of system. In order to remain approved a community system must not exceed 150 points, a non-transient non-community system must not exceed 120 points and a non-community system must not exceed 100 points. Points are assessed in the following categories: Quality, Monitoring and Public Notification; Physical

Deficiencies; Operator Certification; Cross Connection Control; Administrative Issues; and Reporting and Record Maintenance.

Water Quality, Monitoring and Public Notice

Water quality and monitoring points are based on violations of the quality standards in R309-200-5; or the monitoring requirements in R309-205, 210 and 215; and the associated public notification requirements in R309-220. Points are assessed for failure to complete routine monitoring requirements for water sources and/or distribution systems. Failure to collect source nitrate samples is one of the most common monitoring violations. A nitrate sample is required for each source annually. Points for the above violations are removed once the Division receives the required sample analyses. Points are also assessed for exceeding water quality parameters for a maximum contaminant level (MCL).

Failure to meet bacteriologic monitoring and quality requirements account for a significant number of violations. Several types of bacteriologic monitoring violations may occur. They include failure to collect routine monthly or quarterly samples, failure to collect the correct number of routine monthly or quarterly samples, failure to collect required repeat samples or to collect a sufficient number of repeat samples for a TC + routine sample result, and for those systems that collect less than 5 routine samples on a monthly or

quarterly bases failure to collect a total of 5 routine samples the following month. Points are also assigned for exceeding the MCL for bacteriologic water quality. Bacteriological quality and monitoring violation points remain in place for a revolving twelve-month period or 4 consecutive quarters depending upon the routine monitoring schedule that applies to the system.

Systems are required to provide public notice for all water quality and monitoring violations. A copy of the public notification must be forwarded to the Division. Points are assigned for failure to provide public notice.

Physical Deficiencies

Points for physical deficiencies are assessed based upon deficiencies identified during a sanitary survey. The Electronic Sanitary Survey program (ESS) program currently utilized by the Division encompasses the 8 elements of a sanitary survey required by the Groundwater Rule: Sources; treatment facilities; distribution systems; finished water storage; pumps, pump facilities, and controls; monitoring reporting and data verification; water system management and operations; and operator compliance/Utah requirements. The number of points assigned for individual deficiencies is based on the public health effects related to that deficiency. For example, a well that is missing a smooth nosed
(continued page 13)



What do you mean... (continued)

sample tap on the discharge piping is assessed 1 point. A system utilizing an unapproved source is assessed 150 points. Points assessed for physical deficiencies are removed once the deficiencies are corrected and notification of those corrections has been submitted to the Division. Notification to the Division must be in writing, substantiated with photos or submitted on an IPS Deficiency Correction Notice. This notice is available on the Division website www.drinkingwater.utah.gov. The notice can be downloaded and submitted or completed and submitted electronically.

Operator Certification

All community and non-transient non-community water systems are required to have an operator certified at the appropriate grade and classification. Non-community water systems are not required to have a certified operator unless the system employs treatment techniques for surface water or ground water under the direct influence of surface water. However, if a non-community system falls into this classification, it must have an appropriately certified operator. A water system that does not have the required certified operator(s) or does not have an operator or operators certified at the appropriate level is assessed points. Points are also assessed if the certified operator does not live within a one hour response time.

A water system may be assigned credit points if the system is not required to have a certified

operator and does, if the system has operators that are certified at a higher level than required, or if the system has operators certified in other areas that are not required by that water system, such as treatment or backflow prevention certification.

Cross-Connection Control

All public water systems are required to have a cross connection control program regardless of their size or classification. The program may be very simple for a small system, including a non-community water system, or very complex for a major municipal water system or service district. A complete cross-connection control program consists of five components: A local authority statement to enforce a cross-connection control program, public education or awareness materials on an annual basis, someone trained in the area of cross-connection control, written records of cross-connection control activities, and ongoing enforcement activities. Points are assessed for each missing or undocumented component of a cross-connection control program.

Drinking Water Source Protection

Drinking water source protection plans are required for ground water and surface water sources. DWSP points are assessed for a number of reasons which include: Failure to complete required source protection plans, failure to appoint a designated person for source protection and notify the Division who the designee is, failure to maintain a current copy of their source protection plan(s) or source assessment(s) on the water system

premises, failure to maintain a current inventory of potential contamination sources or susceptibility analysis, or failure to maintain current records of land management strategies (such as ordinances, codes, permits, public education programs, meeting minutes). Points are also assessed for any new sources for which a Preliminary Evaluation Report has not been submitted. Points are also assessed for a water system which has any old sources that have come into use for which a source protection plan has not been submitted and/or for a water system which has reconstructed or redeveloped a water source and has not submitted a revised source protection plan. Points are removed as issues are resolved.

Administrative Issues

Points are assessed for a number of administrative issues. Unless otherwise specified, points are removed as the issues are resolved.

- *Administrative Data* - Points may be assessed for failure to designate a person or organizational official responsible for the system along with their current contact information. Water system projects constructed without proper plan approval will be assessed points based on a case-by-case evaluation of the project. These points will remain on record for a period of one year.

- *Emergency Response Program* - Credit points are given to a system for having an emergency response program as long as the program remains current.

- *Sampling Site Plans* - All public water systems must have a bacteriological sample site plan. *(continued page 14)*

What do you mean... (continued)

Points are assessed for not having the plan.

- *Customer Complaints* - Points may be assessed for valid and documented customer complaints. Customer complaints include but are not limited to the following: Turbidity, pressure, taste and odor, sickness (water suspected) and waterborne disease outbreak or periods of water outage. The number of points will be based upon the extent and documentation of the problem and the potential impact to public health. The documentation will consist of an investigation by Department of Environmental Quality, Department of Health or local health department personnel and may include an epidemiological study linking the drinking water to reported outbreaks of illness where appropriate. In the case of a documented waterborne disease outbreak the water system will automatically be rated "Not Approved" for at least the duration of the threat to the quality of the drinking water and as long as it takes the water system to correct any deficiency that caused the outbreak. Points will only be assessed once per issue and will not be additive based on the number of calls per issue. These points will be assessed and updated upon verification of the complaint by the Executive Secretary and will remain on record until the issue or deficiency no longer exists. Points may have already been assessed in other areas as appropriate.

- *Agency Directives* - When a directive consistent with the authority of the Drinking Water Board is not complied with, points

may be assessed to a water system. Agency directives include but are not limited to the following: Administrative orders, rule defined actions, rule defined compliance schedules, variance/exemption requirements, and bilateral compliance agreements. Points will be assessed based upon the severity of the non-compliance, the threat to public health and the underlying basis for the original directive.

- *Data Falsification* - Points may be assessed for data falsification. The water system may be assessed points for each occurrence based upon: The severity of the falsification, the threat to public health, the intent of the water system personnel, and the type of falsification.

Reporting and Record Maintenance Issues

Points may be assessed for failure to provide required reports to the Executive Secretary by the reporting deadline. The points shall be assigned as the failure occurs and shall remain on record for a period of one year. The types of reports include: Monthly treatment plant reports, quarterly disinfection reports, and annual reports including consumer confidence reports.

Division staff, Department of Environmental Quality district engineers, U.S. EPA representatives, and Rural Water Association of Utah staff meet at quarterly CAP meetings to discuss system ratings and related compliance and enforcement issues. During the CAP meetings determinations are made as to which system ratings should be changed from Not Approved to Approved, from Approved to Not

Approved, or from Approved or Not Approved to Corrective Action. These determinations are based on the type of system and total number of points the system has accumulated. Unrated systems typically must have a sanitary survey conducted before a rating is assigned to that system. Systems currently rated Not Approved are discussed on a system-by-system basis. Assignments are made to either RWAU or Division staff to assist these systems with compliance issues. In those cases that warrant administrative actions, individual Division staff members are assigned to draft an Administrative Order, Penalty Letter, or Bilateral Compliance Agreement for the system. Particular emphasis is given to the "25 Worst Systems" list. This list contains the systems with the highest number of points. In some cases EPA may over file the Division and assume enforcement activities. Division staff is available to provide guidance and to work with systems to resolve outstanding compliance issues. We encourage all water systems to contact the Division any time we can be of assistance. ■

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Show me the money... Or at least where we can get it!

By Karin Tatum
Federal SRF Program Coordinator
Division of Drinking Water

So, your last sanitary survey showed some deficiencies with your water system which prompted you to hire an engineer to take a look at your entire system and develop a Water Master Plan for your community. The bottom line from your engineer...your water system needs \$2,000,000 worth of storage/distribution/source/treatment improvements to be in compliance with the Drinking Water Rules established by the State of Utah as defined by the Federal Government's Environmental Protection Agency.

If you are thinking that your community is too small and cannot afford these improvements, there are in fact several options for you! The Division of Drinking Water, USDA-Rural Development, Community Impact Board (CIB), Water Resources, and the Community Development Block Grant (CDBG); to name a few of the Funding Agencies we have here in the State of Utah offer low interest loans and in some cases even grant money to cover necessary improvements. Both the State and Federal Government have provided these resources to communities, recognizing the need to offer low interest loans to upgrade and build infrastructure for drinking water systems.

Since there are several Agencies you can apply to for funding, it is highly recommended that you visit Rural Water's website first (www.rwau.net)! Once you are at the site, click on "Project Funding Options" located in the left hand toolbar.



The Project Funding Options page has a series of questions that are geared to help eliminate some of those Funding Agencies which will ultimately save you time and unnecessary stress. Each Agency has certain requirements, for instance, USDA-Rural Development cannot assist a community that has a population greater than 10,000 and the Division of Drinking Water cannot assist your community in making improvements to your secondary water system. The questions are designed to help "weed out" the Agencies that your community would be ineligible to apply for funding. This should help to minimize confusion and time.

Once you have answered all of the questions, click on the "Submit Project Profile" button at the bottom of the page. You will be informed immediately of which Funding Agency or Agencies your community may qualify for.

Loan:	\$	<input type="text"/>	.00	Grant:	\$	<input type="text"/>	.00
Local Participation:	\$	<input type="text"/>	.00	Other:	\$	<input type="text"/>	.00

Form make take 30-60 seconds to process depending on your Internet Connection speed.

(continued page 16)

Show me the money... (continued)

The Final Step will be for your community to fill out an application for funding with the Agency or Agencies that were selected based on your responses. Remember, there are no guarantees that your community will obtain funding from those Agencies even after going through the Rural Water website. There are governing Boards for most of the Funding Agencies and it will ultimately be their decision on whether or not to fund individual projects. With that said, it is important to note that most projects are funded.

For larger and more expensive projects, it may be necessary for more than one Agency to partner with the community to cover the cost for the entire project. This is nothing new! The Division of Drinking Water, USDA-Rural Development and the CIB have worked together on several projects in the past and will continue to do so in the future. Our jobs at each of the Agencies are to help you through the funding process!

Now you are on the right path to secure funds for your \$2,000,000 project. Good luck and we look forward to working with you! Contact Karin Tatum: office (801) 558-0195, or email ktatum@utah.gov ■

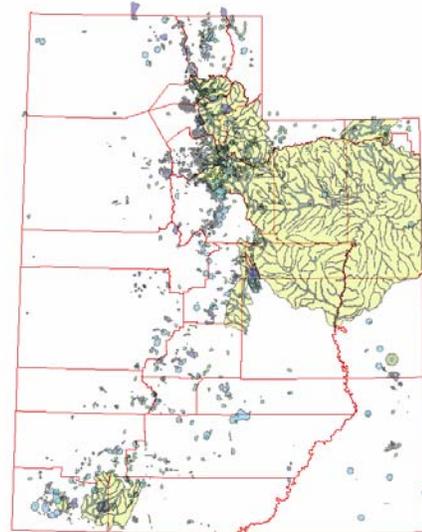
Protection zones available for planners

By Mark Jensen, Geologist
Utah Division of Drinking Water

The first step in a Drinking Water Source Protection Plan is to delineate your protection zones. But then, these protection zones are useful for protecting your well, spring, or intake only when the right people know about them. The right people can be a great help in protecting your public water sources. It is important that people like community planners and planning commissioners, who are making decisions regarding land use within your zones, know where your zones are and what activities should be taking place in those zones. The right people can plan and apply the proper management strategies to protect your valuable water sources.

We introduced source protection zones in electronic format in the previous *OpenLine* (vol. 18, Fall 2007, page 8). These electronic files are in a format that is used by a geographic information system (GIS), a computerized mapping program. Most planning agencies now days use a GIS, and this is also a great way to share data.

To make these zones available to the right people, the Division of Drinking Water (DDW) is working with other DEQ divisions and the Utah Automated Geographic Reference Center (AGRC) to make the zones available through a secure website. The first time that someone needing the files tries to enter the website, they will complete an application to use the



data. The application is sent electronically to DDW. When DDW approves the application, the planner will be able to enter the website and obtain the applicable information.

This website will also assist with your inventory of potential contamination sources. Data on potential contamination sources, which is available from other DEQ divisions, will be available as GIS layers. Using the GIS, your community planner will be able to search for potential contamination sources that are located within your protection zones, and obtain additional information about those sites.

We anticipate that this secure website will be working by September 2008. If you need the protection zones in electronic format for your county or municipal planning efforts before that time, contact Mark Jensen at 801-536-4199 or mjensen@utah.gov. ■

Countering IPS Points with Exception-to-Rule

By William B. Birkes, P.E.
Division of Drinking Water

First let me say that no one is perfect, not even the few engineers who believe otherwise. Likewise the real world is not all black and white, but of all colors and all shades of gray in between; therefore there will always be situations where a simple straight forward rule may not be appropriate for a given situation.

For this reason we have rule R309-105-6(2)(b) which reads *“There may be times in which the requirements of the applicable standards contained in R309-500 through R309-550 are not appropriate. Thus, the Executive Secretary may grant an ‘exception’ to portions of these standards if it can be shown that the granting of such an exception will not jeopardize the public health.”*

One might now ask “How do I go about getting an exception-to-rule.”

First, we don’t give exceptions to just any developers or design engineers; only to the management of public drinking waters systems (pws) to which our rules apply. Therefore we ask that any such request come from the management of the concerned pws on their letterhead.

Second, we ask that in order for the Executive Secretary to consider your request that we receive as part of the written request the following items:

1. a citation of the specific rule for which the “exception” is being requested;
2. a detailed explanation, drawings may be included, of why the conditions of rule cannot be met;
3. what the system proposes, drawings may be included, in lieu of rule; and
4. the system’s justification that the proposed alternative will protect the public health to a similar or better degree than required by rule.

Cost as well as physical conditions may be justification for requesting an “exception-to-rule.”

Some exceptions have been previously granted, if not separately, then perhaps as part of a plan review approval. We have not been diligent in maintaining a separate database of all such exceptions. We plan to track

any future exceptions-to-rule and perhaps even retrieve former ones from our document scanning system and make such available to the inspectors prior to starting a survey, but as I first indicated, no one is perfect, and we cannot guarantee you will not encounter an inspector who has not taken the time to research any and all exceptions that may have been granted your system. So we advise you pws operators review your files for such, keep copies of them handy, and show them to any inspector who may wish to access points during a sanitary survey of your system for what he sees as a violation of rule. ■

Certification for on-call water operators

Recently, the issue has been raised by several water agencies of whether or not operators who are on call should be certified if the system already has a direct responsible charge operator. The State of Utah Public Drinking Water Rules define a direct responsible charge operator as the following:

“Direct Responsible Charge (DRC) means active on-site charge and performance of operation duties. A person in direct responsible charge is generally an operator of a water treatment plant or water distribution system who independently makes decisions during normal operation which can affect the sanitary quality, safety, and adequacy of water delivered to customers. In cases where only one operator is employed by the system, this operator shall be considered to be in direct responsible charge.”

With this definition in mind, the rule clearly states that any operator who makes independent decisions that can affect the quality, safety, and adequacy of the water needs to be certified. For example: An operator is called out to respond to a water main leak. Upon arriving, the operator determines that the water main needs to be shut down. He then proceeds to shut down the main to prepare to fix the leak and protect public property. In effect, this operator needs to be certified because he had to make an independent decision.

If an operator responds to a water main leak and cannot proceed without calling a DRC operator to make a decision, he does not need to be certified if the DRC operator can be reached by phone. ■

CAPACITY REQUIREMENTS FOR PUBLIC DRINKING WATER SYSTEMS

PART I – PHYSICAL CAPACITIES

by
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Engineering Section
Utah Division of Drinking Water

This is Part 1 of a two-part series. This part mainly covers the physical capacities of a water system. And Part 2, to be published in the next issue of the OpenLine, will cover the technical, managerial, and financial aspects of water system capacity.

This article deals with the physical capacity requirements of a water system's infrastructure, including source, storage, and distribution facilities. A water system needs to have all these various components to meet the demands of its customers. The requirements set forth should be considered minimum requirements. Many water utilities choose to increase the capacities of facilities beyond the minimum requirements to meet their specific needs and to provide better service to their water users. To ensure the reliability of water systems, rules are in place specifying minimum requirements for sources, treatment, storage tanks, and distribution system piping networks. Each of these individual components work together to satisfy the demands placed on the system. Interestingly, the demand varies significantly during the day as well as during the year. Consequently in addition to talking about each component, a discussion will also be presented on how the different components cooperatively work together.

Source Capacity

The source capacity issue is particularly complex because there are three measures of this capacity. Specifically, a water system must have sufficient: (a) water rights, (b) source capacity, and (c) pumping or infrastructure capacity to actually divert water from the source into the water system's distribution or storage facilities.

(a) Water Rights

A water right means that an individual or entity has a legal right to use water for a particular purpose, during a particular time, at a particular place ("point of diversion"), and for a specific quantity. These "rights" are administered by the Division of Water Rights. Before approving a right to use water the Division of Water Rights evaluates whether there is sufficient water available to meet the proposed use for the period of time requested. Unfortunately, over the years some areas of the state have become "over allocated", meaning that there is insufficient water actually available to fill all the "rights" that have been

granted. There are a number of reasons why this occurs such as a prolonged period of less than normal precipitation, but it is the situation we have faced with. Consequently, it is important to understand that having a right to use water does not mean that the water will be available when needed.

We usually say a water system must have water "legally and physically" available. The above paragraph describes what it means to have legally available water. Probably having water physically available is better understood. Of course the water must be available in the stream, spring, ditch, river, or well, but then it must be put into the pipes for delivery to customers. Compared to getting a water right and finding real "wet" water, the diversion of water is pretty straight forward. It can be diverted into a pipe directly or be pumped into a storage tank. The laws of Mother Nature apply here and not the laws of the state.

Water rights are typically expressed either as a volume (acre-feet per year) or as a flow

Capacity Requirements (cont.)

rate (gallons per minute, gpm, or cubic feet per second, cfs). The amount of water approved for diversion and the rate at which it can be taken is based upon its availability and the use to which it would be put.

The uses to which water can be legally put to use are varied, but most common water rights uses are: municipal (can be used for most anything including irrigation and drinking water), domestic (can be used for usual indoor household purposes), and irrigation (a particular crop usually alfalfa). The period of time in which water for municipal and domestic purposes can be used is usually year round, January 1 through December 31. Irrigation water can only be used seasonally, typically April through October. Water approved for irrigation use cannot be used to water livestock or provide water for homes.

By the Utah Drinking Water Rules (*Title R309 of Utah Administrative Code*) a public system must have sufficient water rights to meet its yearly average demands. The typical year round water system will use most of its annual water allocation (usually about 15%) in the peak month of July. By contrast, during February where only indoor water use is used, less than 5% of the annual allocation is used. It is very important to plan for the varying demands of a water system when working with water rights so enough water is legally

available when the customers want or need it.

(b) Source Capacity

The term source capacity is the specific amount of water a well, spring, or treatment plant can actually produce. The source capacity of a well or a spring may not be the same as the volume or flow rate listed in a water rights document. In many cases, a water system acquires sufficient water rights for a point-of-diversion location but may not find sufficient wet water to meet its system demand.

When considering the actual availability of water, the Utah Drinking Water Rules considers both the maximum day demand of the year (so-called peak day demand) and the average yearly demand. The peak day demand is typically preceded and followed by multiple days of near maximum day use. Because the supply must equal or exceed the demand, both the peak day demand and the average yearly demand are used in evaluating source requirements for both indoor and outdoor water uses.

A default value of 800 gallons per day per equivalent residential connection is used when we evaluate the source requirement to meet peak day demand for indoor water use only. This figure is pretty close to a statewide average based on the data available. For example, a water system serving 100 residential connections for indoor water use only will need a total of 80,000 gallons per day (or equivalent 56 gallons per minute) source capacity. Some water

systems in the State have been collecting metered water use data. For these water systems, instead of using the default peak day demand value, they can request the Division to re-evaluate the peak day demand per connection based on reliable historical data.

If a water system also supplies outdoor irrigation water to its customers, additional source capacity will be needed. The outdoor demands vary depending on temperature, precipitation, prevailing winds, elevation, etc. The detailed information of outdoor use source demand is available at our website <http://drinkingwater.utah.gov> (see R309-510).

Also, when considering the actual water availability, the seasonal variability of the supply and its historical variability must be considered, for instance, the stream flow in 1983 far exceeded the stream flow in 1977. This is accounted for by using the minimum historical yield as the reliable flow from spring sources and by assuming the reliable yield from a well may only be 67% of its tested rate when determining the allowable number of connections that could be served from a well.

(c) Diversion Capacity

The design of diversion works, similar to the requirement for source availability, must be capable of producing enough water to satisfy the peak day demand. For wells, the design engineer may choose to select a well pump based on the full capacity tested during aquifer

Capacity Requirements (cont.)

pump tests, but the Rule considers only 67% of the pump capacity as being available to satisfy water demand acknowledging the possibility of reduced water production through drought or other phenomena. For example, if the aquifer pump test data show that a well is capable of producing 100 gallons per minute (gpm), the Division would use 67 gpm (67% of 100 gpm) to calculate the number of connections that can be served by this well regardless of whether this well is equipped at 100 gpm, 75 gpm, or 67 gpm.

For springs, the engineer tries to over design the spring development works to ensure that all the water, particularly the high flow conditions, is either captured or diverted. The engineer takes this approach to ensure that excessive flows do not compromise the spring collection and delivery systems. If the high flow that might occur from a spring is not captured or diverted, the excess water will find its way to the surface using pathways other than the piping and wash out the spring development works. Notwithstanding the design capacity of spring development works, the allowable number of connections that can be served by a spring source is based on historical minimum flow conditions.

River and stream type surface water sources are evaluated similarly to the way springs are evaluated. River and stream flow is similar in nature to the flow fluctuations found in springs.

Consequently, one takes into account the historic low flow as representative of “available” maximum day flow. Surface water impoundments, such as lakes and reservoirs are unique in that they, generally speaking, have more capacity than is needed and the diversion structure and/or pumping equipment is designed solely based upon water use needs, taking into account available water rights.

Storage Capacity

When evaluating storage capacity, an engineer considers average day demand from indoor and outdoor water use, water required for fire suppression and an allocation for other emergencies.

A default value of 400 gallons per equivalent residential connection is used to evaluate the storage requirement for indoor water use only. For example, a water system serving 100 residential connections with indoor water use only will need a total of 40,000 gallons of storage capacity. If this water system also supplies outdoor irrigation water to its customers, additional storage capacity will be needed. The detailed information of outdoor use storage volume is available at our website <http://drinkingwater.utah.gov> (see R309-510).

Further, if water from the system is used for fire suppression, that demand must be taken into consideration. The fire suppression requirement is usually expressed as a flow rate in gallons per minute (gpm) for a specified period of time. For

example, the fire flow requirement could be a flow of 1,000 gpm for 2 hours (120 minutes). This demand would translate to an additional storage volume of 120,000 gallons needed for fire suppression.

Some water utilities may choose to have additional storage capacity to handle unexpected emergency situations, such as a treatment plant breakdown, a significant line break, wild fire, etc.

Distribution System Capacity

The distribution system capacity is evaluated based on whether minimum pressures exist at all points within the system while meeting the flow demands. The Rules require a minimum of 20 psi at any point in the distribution system even when a fire suppression demand is underway. The reasons for this are many folds. First, we assume that all pipelines have leaks and to protect the water quality the leaks need to flow out of the pipes and not allow contaminated shallow groundwater to flow into them. Secondly, despite efforts to the contrary we assume cross connections exist and a reasonable amount of pressure in the piping system can mitigate minor cross connections. A third, but less important reason is to allow water using appliances to operate as designed. Most appliances are designed for a minimum acceptable operation at 20 psi. We understand most people prefer water pressures in the range of 40 to 60 psi.

(continued page 21)

Capacity Requirements (cont.)

If the distribution system is equipped with fire hydrants, during the engineering plan review process, we will ask for a letter from the local fire authority stating specific fire flow in gpm and duration required of the area. For a water main not connected to any fire hydrant, the minimum pipe size is 4 inches in diameter. For a water main serving a fire hydrant lateral, the minimum pipe size is 8 inches in diameter unless a hydraulic analysis indicates the required flow and minimum pressures can be met by smaller lines.

We frequently use a network hydraulic analysis of either the entire system (for new water systems) or the new expansion project (for existing water systems) to determine whether the proposed distribution design can adequately meet the following minimum pressures specified in R309-105-9:

- 20 pounds per square inch (psi) during fire flow and peak day demand,
- 30 psi during peak instantaneous demand, and
- 40 psi during peak day demand.

Functioning of the Aggregate Water System

Each individual component of a drinking water system is dependent on the other components and contributes to the overall success or failure of the system to fulfill its purpose of

delivering an adequate amount of safe drinking water to its customers. Without a legal right to use the water there is no surety of a supply. The water has to be available to divert. If not, water demands can not be met. If the storage is inadequate there is not a sufficient buffer between the water supplied from the source and the demands at the tap. If the distribution system is inadequate, the water can not be delivered to the users.

Let's use a fire flow scenario to illustrate the interaction between these components (source, storage, and distribution). Before a fire flow demand occurs, a water system maintains its regular operation. Once a fire flow demand is placed on the system in addition to peak day demand, one or two fire hydrants may be opened to supply the water to fight the fire. It could be 1,000 gpm (or 2,000 gpm) of water flowing out the fire hydrant that is connected to the distribution system. If the distribution pipe is undersized, the fire engine pump may not get sufficient flow from the fire hydrant. If the storage tank is not located at an elevation to maintain adequate pressure for this situation, the water pressure within the distribution lines may drop below the minimum pressure and result in a cross connection contamination. If the system has a total storage volume of 100,000 gallons and if the fire fighting goes on for 120 minutes at 1,000 gpm (i.e., 120,000 gallons in volume), the tank and the distribution system may both run dry because the sources rarely

pump enough to keep up with the fire demand.

Each of the components mentioned above work together to ensure reliable and safe drinking water supply under both normal and extreme conditions. Therefore, when an engineer designs or evaluates the physical capacities of a water system, the interactions between the water system's source, storage, and distribution must be considered as a whole. ■

Joke of the Day

A kangaroo kept getting out of his enclosure at the zoo. Knowing that he could hop high, the zoo officials put up a ten-foot fence. But the kangaroo was out the next morning, just roaming around the zoo. A twenty-foot fence was put up. Again the kangaroo got out. When the fence was forty-feet high, a camel in the next enclosure asked the kangaroo, "How high do you think they'll go?" The kangaroo said, "About a thousand feet, unless somebody remembers to lock the gate at night."



Water Operator Certification 2008 Exam Schedule

ATTENTION ALL WATER SYSTEM OPERATORS AND MANAGERS, AND ANYONE SEEKING EMPLOYMENT IN THE WATER INDUSTRY. Utah's Department of Environmental Quality, Division of Drinking Water (DDW), is offering operator certification exams for water distribution and treatment systems. All grade levels, including small systems, will be offered:

- ▶ **April 11, 2008**, at 16 Utah exam sites (see exam application for list of cities).
Exam application deadline: March 21, 2008.
- ▶ **November 7, 2008**, at 16 Utah exam sites (see exam application for list of cities).
Exam application deadline: October 17, 2008.



ADDITIONAL EXAM DATES AND TRAINING

The Rural Water Association of Utah (RWAU) will sponsor certification exams in conjunction with their annual conferences:

- ▶ **Operator Exam: February 29, 2008 (St. George) → Certification Review Class: February 26-28, 2008**
- ▶ **Operator Exam: August 28, 2008 (Layton) → Certification Review Class: August 25-27, 2008**

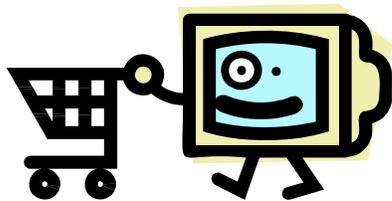
For more information, contact RWAU: Telephone (801) 756-5123; Website <http://www.rwau.net>.

HOW TO REGISTER FOR AN EXAM

Fill out the official 2008 exam application completely and mail it, along with the \$100.00 fee, to: Division of Drinking Water, Operator Certification Program, 150 North 1950 West, P.O. Box 144830, Salt Lake City, Utah 84114-4830. Make the check or money order payable to the "Division of Drinking Water (DDW)."

Examination Fee: \$100.00

The exam application and fee must arrive at the Division of Drinking Water office on or before the deadline listed on the announcement. Applications and fees received after the deadline will not be accepted. A confirmation letter will be mailed to all applicants. If you do not receive your confirmation letter, please contact the Operator Certification Program staff immediately at (801) 536-4200, or E-mail: mhand@utah.gov.



You can pay your exam fee online at: <http://www.drinkingwater.utah.gov> (go to DDW Shopping Cart). The date listed on your credit card E-check receipt will be considered your actual application submittal date. Important note: If you pay online on or before the application deadline, please mail or fax your completed application and your receipt to the DDW office as soon as possible so that your name can be added to the exam reservation list. DDW fax number: 801-536-4211.

Exam Cancellation Policy: Only one cancellation, per applicant, is allowed. An applicant making a written or phone-in cancellation by 9:00 a.m. on the day of the exam may request a refund of the exam fee or take the next scheduled exam. If the applicant should also cancel the next scheduled exam, the exam fee will be forfeited.

2008 EXAM APPLICATION

New information is contained in the 2008 version of the application. The 2008 exam application is available online, or you may request a copy by telephone: (801) 536-4192, or by e-mail: mhand@utah.gov.

Water operators who renewed their certificates in 2007

A total of 659 water operator certificates expired on December 31, 2007. Approximately 69% of these operators renewed their certificates for another three-year period. According to the State of Utah Operator Certification Rules, "an operator may renew a certificate by showing evidence of required training and by payment of a renewal fee." An operator who fails to renew the certificate is listed as inactive in the Utah operator certification database.

The operators listed below submitted a renewal application and fee, and successfully completed the required water-related training. The certificates will be valid until December 31, 2010. The Rules state that these operators must again earn a sufficient number of CEUs in the three-year period January 1, 2008, to December 31, 2010, in order to be eligible for renewal again in 2010.

Operator Name	Certificate #	Water System	Type of Certificate
Adams, Samuel L.	23020	Coalville City	D-II
Allen, Jerry K.	98101	Bona Vista Water Improvement District	D-IV
Allen, Vilo J.	21058	Sigurd Town	D-S
Allred, Greg S.	98500	Lehi City	D-III
Alvey, Frank D.	24100	Calf Creek Campground	D-S
Alvey, Steven L.	21001	Joseph Town	D-S
Ames, Ronald B.	95100	Glen Canyon-Dangling Rope Marina	D-I
Anderson, David A.	89101	Nucor Steel	T-IV
Anderson, Dirk O.	00715	Jordan Valley Water Conservancy District	D-IV
Anderson, Gene	23077	Jordan Valley Water Conservancy District	T-IV
Anderson, James R.	21102	Logan City	D-III
Anderson, Lester J.	00321	Salt Lake City	T-IV
Anderson, Lynn J.	24001	Snowville Water Works	D-S
Anderson, Nick V.	95101	West Jordan City	D-II
Anderson, Steve D.	89102	Jordan Valley Water Conservancy District	D-IV
Anderson, Thomas J.	95102	Tremonton City	D-III
Applonie, Paul T.	21047	Layton City	D-IV
Armitage, Jim R.	24002	Pinnacle Homeowners Association	D-S
Astill, Michael H.	95501	Jordan Valley Water Conservancy District	D-IV
Atkin, Steve L.	92102	Beaver City	D-I
Avery, Chad E.	21501	Smithfield City	D-II
Bain, Thomas M.	24500	Zion National Park - Kolob Visitor Center	D-II
Bancroft, Brandon G.	23079	South Salt Lake City	D-IV
Bancroft, Donald L.	86030	Murray City	D-I
Banks, James B.	84210	Wolf Creek, Liberty Pipeline	D-IV
Bardwell, Matthew E.	22504	Weber Basin Water Conservancy District	D-IV and T-IV
Barney, Gary L.	89500	Richfield City	D-III
Barney, Gary	21060	Morton Salt	D-S
Bascom, Robert D.	24036	Spring Lake Water Works	D-S
Batt, Gordon N.	98102	Jordan Valley Water Conservancy District	D-IV
Bell, Randy	98504	Castle Valley Special Service District	T-III
Bertelsen, Micheal A.	98103	Salt Lake City Corporation	T-IV
Bess, Shaun M.	21055	Brigham City	D-IV
Blackburn, Ryan W.	99504	Vernal City	D-IV
Blackburn, Tyler H.	21005	Axtell Community Special Service District	D-S
Blanton, Scott V.	87808	Salt Lake City Corporation	D-IV
Blonquist, Blair E.	88505	Water Specialist	D-IV
Bollwinkel, John E.	89502	Gorgoza Mutual Water Company	D-IV and T-IV
Bond, T. Lynn	24004	Meadow Town	D-S
Bowler, Larry W.	21105	Sandy City	D-IV
Boyack, Marvin A.	87697	West Jordan City	D-IV

Operator Name	Certificate #	Water System	Type of Certificate
Boyington, Kirk G.	21503	Midvale City	D-IV
Bradshaw, Tom G.	98104	Milford City	D-II
Brandon, Joe A.	24503	Ophir Canyon	D-S
Brems, Aaron M.	24005	American Fork City	D-III
Brennan, Jason J.	20071	South Ogden City	D-IV
Bretthauer II, Erich W.	24006	Bryce Woodland Estates	D-S
Brewer, Kolton	22109	Murray City	D-IV
Brewer, Ronald L.	88174	Price City	T-IV
Brinkerhoff, Garth M.	21061	US Magnesium	D-S
Brown, Timothy L.	94109	Ogden City	D-IV
Bryant, Jeffrey J.	86559	Jordan Valley Water Conservancy District	D-IV
Buchei, Danny B.	95107	Granger-Hunter Improvement District	D-I
Budge, Jeffrey D.	95506	White City Water Improvement District	D-IV
Bullock, Ted C.	98505	Ogden City	D-IV
Bullough, Randy B.	86674	Salt Lake City Corporation	D-IV
Burgener, Kelvin R.	21109	Jordanelle Special Service District	D-IV and T-IV
Carlson, Michael S.	88153	Centerville City	D-IV
Carter, Kevin B.	21046	Minersville Town	D-I
Carter, Robert T.	91106	Provo City	D-IV
Casperson, Frank B.	24008	American Pacific Corporation	D-S
Castoldi, Steven F.	21062	Woodland South Hills Irrigation Company	D-S
Chappell, F. LaMont	92502	Capitol Reef National Park	T-III
Chatwin, Maurice C.	88811	Heber City	D-III
Chavis, Danna R.	94002	Water Specialist	D-IV
Child, Michael W.	85088	Clinton City	D-IV
Christensen, Kirk L.	21111	Duchesne County Upper Country	D-IV
Church, D. Brandon	24103	Fairview City	D-I
Clark, Kenneth J.	98108	Delta City	D-IV
Clark, Stephen L.	93110	Ogden City	D-IV
Claypool, Daniel L.	96505	Jordan Valley Water Conservancy District	T-IV
Coleman, Gary W.	21036	Coleman Mobile Home Court	D-S
Collett, Craig W.	98507	Greendale Water Company	T-II
Cook, Gordon P.	96506	Metropolitan Water District of Salt Lake & Sandy	T-IV
Coon, J. Lynn	95510	Metropolitan Water District of Salt Lake & Sandy	T-II
Cramer, Dan J.	24104	West Jordan City	D-II
Crittenden, Matt	23089	Kamas City	T-I
Crockett, Alden W.	89110	Ukon Water Company	D-III
Crofts, Jackson A.	88815	Central Utah Water Conservancy District	D-IV
Crook, Tyson D.	24044	Kennecott Utah Copper	D-IV and T-IV
Cummings, Douglas W.	98111	Clearfield City	D-III
Cummings, Larry B.	21510	American Pacific Corporation	D-IV
Cunningham, Steve R.	20512	WaterPro, Inc	D-IV
Dallin, Gaylon V.	89111	Springville City	D-II
Dalton, Lester C.	24010	Washington City	D-IV
Dansie, Boyd	21051	Dansie Water Company	D-S
Dansie, Richard	21053	Dansie Water Company	D-S
Dansie, Rodney	21052	Dansie Water Company	D-S
Davenport, Brian D.	99116	Mountain Regional Water Special Service District	D-IV and T-IV
Davis, David Guy	89112	Energy West Mining - Deer Creek Mine	T-IV
Davis, Jack W.	24506	North Salt Lake City	D-IV
Davis, Paul S.	94513	Provo City	D-IV
Davis, Robert C.	21511	Interlaken Mutual Water Company	D-I
Day, Jerry L.	98510	Hill Air Force Base	D-II
De Jong, Britt A.	85612	Weber Basin Water Conservancy District	D-IV
Denison, Robert E.	21512	West Jordan City	D-IV
DeVries, Michael J.	98511	Metropolitan Water District of Salt Lake & Sandy	T-IV

Operator Name	Certificate #	Water System	Type of Certificate
Dewey, Brad J.	92111	Murray City	D-IV
Dodge, Craig A.	89506	Salt Lake City Corporation	T-IV
Dorman, Richard D.	21063	Morton Salt	D-S
Dotson, Timothy M.	24545	St George City	T-II
Doyle, Jason J.	22117	Kennecott Utah Copper	T-IV
Draper, Douglas M.	21514	Canyon Fuel Company - Skyline Mine	T-I
Drewes, Karl D.	97116	Brigham City	D-IV
Duce, Bart C.	95111	Logan City	D-II
Duke, Gaylon L.	21116	Taylorville-Bennion Improvement District	D-II
Dumpert, Eric A.	23091	Water Specialist	T-III
Dunn, Ronald L.	97117	Ogden City	D-IV
Durtschi, Norman E.	24509	Heber Valley Camp	D-II
Earley, Gary G.	96110	South Jordan City	D-IV
Eckenbrecht, Kurt H.	97119	Washington Terrace City	D-III
Edmunds, Clair	24013	Mt Pleasant City	D-II
Edwards, Justun D.	24510	Herriman City	D-IV
Ellis, Mitchell L.	94121	Salt Lake City Corporation	T-IV
Evans, Douglas W.	00756	Mountain Regional Water Special Service District	D-III
Evans, Michael A.	24047	Water Specialist	D-I
Ewell, Dallin D.	84039	Metropolitan Water District of Salt Lake & Sandy	T-IV
Fahrni, Craig F.	89114	Jordan Valley Water Conservancy District	D-IV
Farnsworth, Bruce A.	98513	Water Specialist	D-II
Fearn, Robert B.	86659	Weber Basin Water Conservancy District	D-IV
Ferrell, Michael A.	21064	Intermountain Power Service Corporation	D-S
Fillmore, Richard P.	98119	South Salt Lake City	D-IV
Finstick, Sue A.	20013	Bulloch Brothers Engineering, Inc	T-I
Folkman, Mike S.	21517	Summit Water Distribution	D-IV
Fordham, Marvin G.	21074	Thompson Special Service District	D-S
Frandsen, David R.	20520	Murray City	D-IV
Frandsen, Jay T.	95161	Kennecott Utah Copper	D-IV and T-IV
Frank, Brad V.	21120	Elwood Town	D-I
Frisk, Aron J.	20521	Murray City	D-IV
Frost, Melvyn P.	21518	Riverside-North Garland Water Company	D-II
Fuell, H. Louis	98121	Granger-Hunter Improvement District	D-IV
Gagon, Darel L.	24050	Metropolitan Water District of Salt Lake & Sandy	D-IV and T-IV
Gale, Lyle W.	95113	Elsinore Town	D-I
Galloway, M. Nick	24051	Benson Culinary Water Improvement District	D-IV
Gardner, David A.	00466	WaterPro, Inc	D-IV
Garner, Gary L.	99124	Kaysville City	D-IV
Giles, David B.	24511	Weber Basin Water Conservancy District	T-IV
Gill, Michael D.	97520	Salt Lake City Corporation	T-IV
Giordano, Michael G.	23097	South Ogden City	D-IV
Giordano, Randy L.	21041	West Warren-Warren Water Improvement District	D-I
Glover, Shawn E.	96116	Cedar City	D-IV
Goodrich, Kenneth	92505	Ashley Valley Water & Sewer Improvement District	T-IV
Goodsell, Bryan V.	24108	Clarkston Town	D-I
Goodwin, Bret	21521	Metropolitan Water District of Salt Lake & Sandy	T-IV
Goss, Bill D.	86679	North Ogden City	D-IV
Grandpre, Jamie E.	97125	Morgan City	D-IV
Griffin, Ronald K.	21523	Grantsville City	D-II
Grunig, Michael L.	92506	Hyde Park City	D-II
Grygla, Ryan D.	95517	Sandy City	D-II
Gwynn, Brett T.	99129	Syracuse City	D-IV
Hadfield, Larry A.	22125	Lehi City	D-IV
Hanson, Keith J.	89510	Salt Lake County Service Area #3	D-III
Hanson, Virgil V.	21526	Sandy City	D-IV

Operator Name	Certificate #	Water System	Type of Certificate
Hardy, David K.	85013	Central Utah Water Conservancy District	D-IV and T-IV
Hardy, David K.	00731	Weber Basin Water Conservancy District	T-IV
Haskell, Kent	94521	Elk Ridge City	D-II
Hawkins, John D.	98515	Silver Spur Ranchos	D-I
Hawkins, Richard Paul	21527	Spanish Fork City	D-II
Haws, Steven L.	93114	Provo City	D-IV
Healey, Jay C.	95519	Alpine City	D-III
Heaton, Ingo H.	22516	Holliday Water Company	T-IV
Hellstrom, Fred C.	88132	Pleasant View City	D-IV
Hendricksen, David	24109	Charleston Water Conservancy District	D-I
Hennessee, Mickey W.	86207	Sunset City	D-III
Hensley, Robin D.	21528	Grantsville City	D-II
Herring, Daren K.	89511	Provo City	D-IV
Hiibner, Scott	21065	Pepperidge Farm, Inc	D-S
Hilbert, Richard W.	86213	Park City Municipal Corporation	D-III
Hill, Dellas Scott	88119	Riverton City	D-IV
Hill, Gregory G.	22127	Murray City	D-IV
Hill, Richard A.	97129	Bountiful City	T-II
Hoagland, Karen L.	98125	Sandy City	D-IV and T-IV
Hobbs, Jason R.	24110	Draper City	D-IV
Hobbs, Travis R.	24111	Garden City	D-II
Hoggan, Steven J.	24514	ATK Thiokol	D-IV
Hohnbaum, Chris D.	97531	Water Specialist	D-IV and T-IV
Holland, Dennis L.	00589	Salt Lake City Corporation	D-IV
Holmstead, Cal D.	87748	Lehi City	D-IV
Honey, Randall B.	24018	American Fork City	D-IV
Houser, Lance E.	24112	Logan City	D-IV
Hoyt, Monica B.	95502	Central Utah Water Conservancy District	T-IV
Huffman, Kendall D.	94133	West Jordan City	D-IV
Huntington, Royal Mack	84259	Castle Valley Special Service District	T-IV
Illum, Mark D.	21530	IM Flash Technologies, LLC	D-II
Isbell, John D.	89118	West Jordan City	D-IV
Jacobson, Adam D.	24020	Water Specialist	D-IV
Jacobson, John R.	24056	Weber Basin Water Conservancy District	T-IV
James, Keith R.	95123	Centerfield City	D-II
Jaterka, Robert A.	20101	Magna Water Company	T-IV
Jenkins, Jeremy R.	22190	Gorgoza Mutual Water Company	D-IV
Jensen, Andrew J.	95124	Maddox Ranch House	D-I
Jensen, Darrin L.	98521	WaterPro, Inc	D-II
Jensen, Dennis	89119	Salem City	D-I
Jensen, Jeff M.	21531	Ephraim City	D-IV
Jensen, Jonathan P.	99139	Ogden City	T-II
Jensen, Scott L.	86586	Price River Water Improvement District	D-IV
Jeppson, Brian K.	97535	St George City	D-IV
Jessop, Victor Y.	24517	Hildale/Colorado City	D-III
Johanson, Michael D.	97536	Water Specialist	D-IV
Johnson, Harper L.	95557	Mantua Town	D-I
Johnson, John L.	94525	NPS Canyonlands-Island in the Sky	D-II
Johnson, Matthew G.	24058	Weber Basin Water Conservancy District	T-IV
Johnson, Robert S.	88516	Jordan Valley Water Conservancy District	D-IV and T-IV
Jones, Kenneth J.	24059	Grand Water and Sewer Agency	D-II
Jones, Levi G.	24518	Moab City	D-II
Jones, Richard D.	23527	St George City	D-IV
Kelsey, Roger L.	97537	Salt Lake City Corporation	D-IV
Kennedy, Travis M.	98523	West Jordan City	D-IV
Kesler, Larry D.	94528	South Jordan City	D-IV

Operator Name	Certificate #	Water System	Type of Certificate
Kesler, Roger A.	98129	Circle Four Farms	D-I
Ketten, Theodore L.	93561	Sandy City	D-IV
Kidd, Ronald G.	84017	Jordan Valley Water Conservancy District	D-IV and T-IV
Killpack, Andrew B.	20108	Salt Lake City Corporation	T-IV
King, Jeffrey L.	85014	Jordan Valley Water Conservancy District	D-IV
Kirkman, Max	98130	Clearfield City	D-III
Knight, Gary L.	21135	St George City	D-IV
Korth, Kourtney J.	24120	Kennecott Utah Copper	D-II
Kozak, Kevin B.	98132	Weber Basin Water Conservancy District	T-IV
Kuwada, Dennis H.	24060	Salt Lake City Corporation	D-IV
Lake, Lloyd L.	24520	Kennecott Utah Copper	D-I
Lake, Melvin L.	24121	US Magnesium	T-I
Lambson, Ivan G.	21136	Kennecott Utah Copper	D-I
Lammert, Branden L.	21137	Maeser Water Improvement District	D-II
Lane, William W.	21017	Mountain Springs Water Company	D-I
Langston, Nathan W.	97540	Monticello City	D-IV and T-IV
Larsen, Gary M.	84051	Millville City	D-III
Larsen, Ronald J.	21018	InSite Engineering	D-S
Larson, Brad P.	90516	West Jordan City	D-II
Laub, Samuel G.	94530	St George City	D-IV
Lawrence, Daniel J.	87822	Hill Air Force Base	D-IV
Lawson, John S.	96519	Kearns Improvement District	D-IV
Layton, Zachery T.	96134	Clearfield City	D-III
Leonard, Doug W.	95129	Jordan Valley Water Conservancy District	T-IV
Lewis, Victor E.	21139	Micron Technology	D-I
Limb, Chad M.	89516	Beaver City	D-II
Looock, Max G.	89122	Taylor-West Weber Water Improvement District	D-II
MacArthur, Kyle P.	24521	Park City	D-IV
MacKay, Wayde P.	21141	Sandy City	D-II
Magleby, Devin B.	89517	Monroe City	T-IV
Manglona, Pedro J.A.	21043	Hill Air Force Base	T-II
Mangum, David C.	84020	Castle Valley Special Service District	D-IV and T-IV
Marquez, Michael C.	21142	Sunnyside City	D-S
Martinez, Feliberto J.	84055	Water Specialist	D-IV and T-IV
Mascher, Leonard F.	98142	Jordan Valley Water Conservancy District	D-IV
Mastin, Troy R.	87824	Price River Water Improvement District	T-IV
Mattson, Ralph J.	92134	Ogden City	D-II
Maughan, Bill	24123	Utah State Parks and Recreation	D-S
Maughan, Kevin R.	97546	Hyrum City	D-IV
Maughan, Perry N.	89142	Wellsville City	D-III
Maxwell, Robert B.	21541	Kearns Improvement District	D-I
McCoard, Stoney	94534	Provo City	D-IV
McFarland, Ronald	24124	US Magnesium	T-I
McKnight, Robert	87674	Heber City	D-III
Mecham, Austin Q.	21019	Axtell Community Special Service District	D-S
Mecham, David G.	95528	Jordan Valley Water Conservancy District	T-IV
Millard, Steve E.	97548	Salt Lake City	T-IV
Miller, Dennis D.	89126	Duchesne City	D-II
Miller, Wyatt G.	97549	Cedar City	D-IV
Millward, Glen R.	88137	Grantsville City	D-II
Mitchell, Kenneth G.	99151	Park City	T-IV
Montoya, Frank J.	88150	Jordan Valley Water Conservancy District	T-IV
Moore, Douglas V.	84352	Cluff Ward Pipeline	D-S
Morgan, Robert L.	24527	Cedar Breaks National Monument/Zion Canyon	D-II
Morris, Chance	24065	Jordanelle Special Service District	D-III
Moss Jr., David H.	87780	Bountiful City	D-IV

Operator Name	Certificate #	Water System	Type of Certificate
Moulding, G. Lynn	84354	Riverdale City	D-III
Moulding, LeRoy	95133	Washington Terrace City	D-II
Munns, Michael R.	21144	West Jordan City	D-IV
Murphy, Troy T.	21545	West Jordan City	D-IV
Musselman, Benjamin R.	20119	Monticello City	D-II
Muir, Jerry D.	24125	Manila Town	D-I
Myers, Kurt R.	92512	Central Utah Water Conservancy District	D-IV
Naranjo, Raul	24528	West Wendover City	D-III
Necaise, Ricky J.	20120	Granger-Hunter Improvement District	D-IV
Negley, Kevin R.	24126	NPS - Canyonlands Needles	T-I
Nelson, Edward A.	95135	Draper City	D-I
Nielson, Jerry O.	93123	WaterPro, Inc.	T-IV
Nielson, Kurt A.	20123	Cedar City	D-IV
Nielson, Michael R.	84280	Salem City	D-II
North, Kirk D.	24127	Heber Ranger District/Uintah National Forest	D-I
Noyes, Norman K.	95136	Sunset City	D-II
Nuttall, David V.	21146	Fairview City	D-II
Obray, Randell G.	21020	Cove Special Service District	D-S
O'Gwin, Carl L.	21021	Pine Mountain Mutual	D-S
Olsen, Scott C.	88734	Jordan Valley Water Conservancy District	D-IV
Oman, Kirk G.	93533	Jordan Valley Water Conservancy District	D-IV
Opfar, Paul D.	24066	Provo City	D-II
Orton, Kenneth W.	84282	Highland Water Company	D-II
Owens, Kory B.	21147	Panguitch City	D-II
Owens, Marie E.	97152	Jordan Valley Water Conservancy District	D-IV
Pace, D. Lee	00701	West Jordan City	D-IV
Pace, James A.	00416	Orem City	D-IV and T-III
Pace, James M.	21022	Teasdale Special Service District	D-S
Palmer, Brett	95137	Stansbury Park Improvement District	D-IV
Palmer, Robert D.	24067	Metropolitan Water District of Salt Lake & Sandy	D-IV
Park, Colten T.	98150	Stansbury Park Improvement District	D-II
Parker, Stephen L.	86661	American Fork City	D-IV
Parkinson, Timothy A.	95531	Zion National Park	D-II
Parry, Chad J.	98151	Ephraim City	D-II
Parry, Theodore	21148	Fruit Heights City	D-III
Parslow, Douglas K.	87830	Weber Basin Water Conservancy District	D-IV and T-IV
Pattee, Brian H.	96140	Logan City	D-IV
Payne, Ronald D.	23537	Metropolitan Water District of Salt Lake & Sandy	D-IV
Pedersen, Mark L.	95532	Deseret Generation & Transmission	T-II
Persico, Mark C.	96143	Hill Air Force Base	D-IV
Peters, Jonathan H.	91129	Metropolitan Water District of Salt Lake & Sandy	T-I
Petersen, Debra P.	21068	Sheep Creek Cove Homeowners Association	D-S
Petersen, Douglas K.	92142	Smithfield City	D-III
Peterson, Craig K.	92143	West Jordan City	D-IV
Peterson, Devan E.	22146	Lehi City	D-III
Peterson, Justin C.	21150	USDA Forest Service - Dixie NF	D-I
Phelps, Howard L.	24069	Glen Canyon - Bullfrog Basin	D-II
Pierpont, Paul S.	21548	Central Utah Water Conservancy District	D-IV
Pierson, Dale F.	84442	Spanish Valley W&SID / Grand W&S Agency	D-II
Poll, Bart M.	97557	Riverdale City	D-IV
Pollock, Troy S.	21550	Panguitch City	D-II
Pope, Jim R.	21151	Spring Creek Water Users	D-S
Poulsen, Todd R.	24131	Canyon Fuel Company - Skyline Mine	D-S
Powell, William E.	94162	Salt Lake City	T-IV
Proulx, Cory C.	99166	Draper City	D-IV
Pugsley, Tyler D.	96145	Brigham City	T-II

Operator Name	Certificate #	Water System	Type of Certificate
Purissimo, Lorena D.	24532	Jordan Valley Water Conservancy District	T-IV
Quigley, John F.	24071	Glen Canyon-Bullfrog Basin	D-I and T-II
Quilter, Eugene R.	24132	Calf Creek Campground	D-S
Quinn, Edward D.	87677	Tremonton City	D-IV
Rackham, Scott D.	92517	Weber Basin Water Conservancy District	T-IV
Rager, Gary C.	88835	Sandy City	D-IV and T-IV
Raines, Mark	96527	Water Specialist	D-IV
Ranck, Russell S.	94544	Salt Lake City	T-IV
Rasmussen, Dan L.	87406	Aurora City	D-II
Rasmussen, George E.	21048	Midvalley Estates Water Company	D-S
Reynolds, Mark A.	21551	Bear Canyon Water System	D-S
Rhodes, Nathan J.	90524	St George City	D-IV
Robbins, Brett F.	24084	WaterPro, Inc.	D-II
Roberts, Ed W.	21154	Spanish Fork City	D-IV
Roberts, Kelly J.	21027	Austin Special Service District	D-S
Robertson, Michael J.	96146	Price River Water Improvement District	D-IV
Robinson, Alan H.	92166	Springville City	D-II
Robinson, Shayne W.	24025	Lincoln Culinary Water	D-S
Rodriguez, Fred T.	97002	Sandy City	D-IV
Roper, John B.	24072	Water Specialist	D-II
Ross, Lanny W.	87737	Johnson Water District	D-II
Ross, Ray W.	95145	Central Iron County Water Conservancy District	D-IV
Roth, David B.	22149	Metropolitan Water District of Salt Lake & Sandy	D-IV
Roundy, Michael P.	97160	Logan City	T-IV
Rowberry, Darin	24073	South Jordan City	D-IV
Rufener, Edward L.	85001	South Salt Lake City	D-IV
Russell, Boyd A.	21553	Deseret Generation & Transmission	T-II
Sabey, Rick C.	93129	Orem City, Wallsburg Town	T-IV
Sabuco, Francisco C.	00656	Metropolitan Water District of Salt Lake & Sandy	T-IV
Sadler, D. Wayne	20545	Mt Regional Water Special Service District	T-II
Saunders, Kurtis M.	94189	Logan City	D-IV
Saunders, William D.	21157	Nibley City	D-II
Schmidt, Steve J.	24533	Jordan Valley Water Conservancy District	D-IV
Schofield, Nathan R.	21554	West Haven Special Service District	D-IV
Shakespeare, Tom	92150	Cannonville Town	D-I
Shurtleff, Charles D.	85457	Ogden City	D-IV and T-IV
Siddoway, Gary N.	22541	Kamas City	T-II
Siddoway, Steve H.	21159	Draper City	D-II
Sieverts, Luke D.	24027	Herriman City	D-IV
Sigler, Michael C.	92107	Jordan Valley Water Conservancy District	D-IV
Skogerboe, Matt R.	96531	Magna Water Company	D-IV
Slagowski, Mark E.	84300	Bountiful City	T-IV
Smith, Alan F.	21557	Lewiston City	D-II
Smith, Gerald D.	94551	Manila Town	D-IV
Smith, Kelly D.	21161	Orem City	D-IV
Smith, Terry K.	91139	Provo City	D-IV
Snook, Kenneth H.	00561	Price River Water Improvement District	D-II
Snow, John A.	87789	Granger Hunter Improvement District	D-IV
Snyder, Cody	24134	Woodenshoe Water Company	D-S
Snyder, Robert	24028	Rockville Pipeline Company	D-I
Soper, Gregory B.	20139	Lehi City	D-III
Spivey, Don G.	94169	Provo City	D-IV
Squire, Robert P.	98153	Jordan Valley Water Conservancy District	T-IV
Stansfield, Clyde	21056	Roosevelt City	D-III
Staples, James E.	95539	University of Utah	D-III
Stapley, Michael J.	98535	Logan City	D-II

Operator Name	Certificate #	Water System	Type of Certificate
Steadman, Chad P.	24535	Jordan Valley Water Conservancy District	D-IV
Stevens, Michael R.	21162	Central Utah Water Conservancy District	D-IV and T-IV
Stevens, Todd A.	88532	Ogden City	T-IV
Stewart, Benjamin W.	21163	Milford City	D-II
Stewart, Scott G.	99172	Salt Lake City	D-IV
Stillman, John D.	24029	Herriman City	D-IV
Stockdale, Richard A.	20551	Stockton Town	D-I
Stones, Kelly B.	98156	Parowan City	D-II
Stoyanoff, Jack J.	86645	North Emery Water Special Service District	D-IV
Strand, Robin P.	94170	Hill Air Force Base	D-II
Stringham, David E.	92152	Bear Lake Water Company	D-I
Suffern, Gregory W.	98536	Oak Meadow Subdivision	D-I
Sundara, Robert V.	88491	Salt Lake City	T-IV
Sutherland, Mark W.	21560	Central Utah Water Conservancy District	D-IV
Taylor, Allen A.	86676	Jordan Valley Water Conservancy District	D-IV
Taylor, Darrin B.	95148	Layton City	D-IV
Taylor, George C.	92164	Ogden City	T-IV
Taylor, Melvin B.	21164	Woods Cross City	D-II
Taylor, Paul Y.	99174	Spanish Fork City	D-IV
Terry, Jacob D.	23545	St George City	D-IV
Terry, Shazelle	98538	Jordan Valley Water Conservancy District	T-IV
Testa, Michael E.	24076	Park City Mountain Resort	D-I
Thomas, Darrell J.	98159	Kamas City	D-II
Thomas, Joshua C.	23546	Jordan Valley Water Conservancy District	D-IV
Thomas, Landon K.	24031	Escalante Valley School	D-S
Thomas, Robert A.	94556	Provo City	D-IV
Thompson, Christopher L.	91521	Glen Canyon National Park Service	T-III
Thompson, David Z.	24137	Cedar Ridge Subdivision	D-S
Thompson, Guy Wallace	20552	Bryce Canyon National Park	T-II
Thorpe, Carol L.	21166	Dammeron Valley Water Works	D-II
Tietje, Matthew J.	98539	Metropolitan Water District of Salt Lake & Sandy	T-IV
Timm, Randy V.	95150	West Jordan City	D-II
Tom, Pat	24538	Metropolitan Water District of Salt Lake & Sandy	T-IV
Tuft, Wade T.	94561	Jordan Valley Water Conservancy District	D-IV
Turner, Duff G.	89140	Jordan Valley Water Conservancy District	D-IV and T-IV
Underwood, Brian C.	24138	West Desert School	D-S
VanWagenen, Greg L.	94174	Salt Lake City	T-IV
Varney, Jon M.	95153	American Fork City	D-III
Vasquez, Jr., Max	24116	Kennecott Utah Copper	D-II
Vercimak, Michael V.	24032	Hurricane City	D-IV
Vigil, John A.	96156	Water Specialist	D-IV
Walker, Gerald A.	24033	Mountain Springs Water Company	D-I
Walker, Kent E.	89522	Washington County Water Conservancy District	D-IV and T-IV
Wall, Shawn R.	94177	Magna Water Company	T-II
Wall, Troy K.	97179	Wasatch County	T-IV
Wallentine, Max V.	21039	Bradford Acres Water Association	D-S
Wallin, Robert V.	95154	Salt Lake City	D-IV
Ward, Michael H.	95155	Cedar Breaks National Monument	D-I
Wareham, Kit C.	98163	Cedar City	D-IV
Warnick, K. Reed	21167	West Jordan City	D-IV
Warr, Devin D.	21168	Riverton City	D-IV
Washburn, Kevin E.	95548	Canyon Fuel Company	T-IV
Watkins, Clyde R.	91144	Water Specialist	T-IV
Wayas, Wayne A.	95549	Orem City	D-IV
Webb, Jeremy T.	24080	Water Specialist	D-II
Webster, Tyler G.	21169	Layton City	D-IV

Operator Name	Certificate #	Water System	Type of Certificate
Westlund, Ronald A.	88135	Intermountain Power Service Corp	D-II
White, David F.	84063	Water Specialist	D-IV
White, Gordon	95156	Payson City	D-III
White, Ray B.	92161	Farmington City	D-II
White, Sam A.	88175	Price City	D-IV
White, Stanley J.	95157	Glen Canyon National Park Service	D-I
Whiting, Daniel L.	95551	Deseret Generation & Transmission	T-II
Wilde, Douglas D.	21035	Holcim (US) Inc	D-S
Williams, David C.	89141	Clinton City	D-III
Williams, Mark B.	00763	Sandy City	D-IV
Williford, Joe F.	90140	Duchesne Valley Water Treatment Plant	D-IV
Wilson, Steven D.	85604	Granger Hunter Improvement District	D-IV
Wims, Ernest H.	94108	Hill Air Force Base	D-II
Wood, Brett G.	24081	Herriman City	D-IV
Woodcox, Gregory H.	96001	Pleasant Grove City	D-III
Woolsey, Blake K.	98166	Jordan Valley Water Conservancy District	T-IV
Woolsey, Layne V.	95160	Escalante City	D-II
World, Robert L.	21566	Kearns Improvement District	D-I
Wunderlich, Ronald J.	98167	Water Specialist	D-I
Yates, Daniel G.	99570	West Jordan City	D-IV
Yates, Gerard	87841	Central Utah Water Conservancy District	T-IV
Zampedri, Timothy S.	99186	South Ogden City	D-IV

Active duty military personnel

The Operator Certification Commission recognizes that water system operators serve in all branches of the military and may be called to active duty. The Commission has a policy in place regarding those operators who are called to active duty in the United States military. The Commission resolves to freeze the certification status of operators called to active duty while serving in the military. Once the operator returns, he/she may start from the status they were at before being called to active duty. The operator may also choose to submit CEU credit hours that qualify for training received while serving active duty.

The operator will retain the CEUs earned before being called to active duty. The time spent on active duty will not count as part of the three-year renewal cycle and the operator will have a full three years of operator or specialist status to obtain the remaining required CEUs and to pay any renewal fees required by rule. If the tour of duty were extended for a period of time longer than three years, it would be reviewed on a case-by-case basis.

To report active military duty, please write to or contact the Operator Certification Program staff. A copy of your official orders containing the length of your tour of duty would be helpful. ■



Utah Operator Certification Program
 150 North 1950 West
 P.O. Box 144830
 Salt Lake City, Utah 84114-4830
 Telephone: 801-536-4200
 Fax: 801-536-4211
 E-mail: kdyches@utah.gov (Kim)
 E-mail: mhand@utah.gov (Margaret)

Utah Backflow Technician Certification and Recertification Classes

THE STATE OF UTAH draws on instructors from several outside training organizations to ensure adequate training of those who choose to apply as a Backflow Assembly Tester. All backflow technician instructors are approved by the State. The training organizations have provided the following list of training courses for 2008.

Utah Valley State College (UVSC) closed down their backflow training program in February 2008. There had been concern of an inadequate number of classes for those interested in becoming certified or those who need recertification. Since February 2008, the Rural Water Association of Utah (RWAU) has contracted with UVSC to provide training at UVSC. The training dates set by RWAU complete the schedule planned for UVSC.

2008		
<p>Rural Water Association of Utah 76 East Red Pine Alpine, Utah 84004 Call: (801) 756-5123</p> <p>Register Online: www.rwau.net/training.html</p>	<p>Class II Tester Certification Class: Apr 28-May 2, 2008 UVU, Orem, UT Jul 28-Aug 1, 2008 Logan, UT Sep 8-12, 2008 UVU, Orem, UT Sep 15-19, 2008 St George, UT Oct 06-10, 2008 UVU, Orem, UT Dec 08-12, 2008 Ogden, UT</p> <p>Class I Administrator Certification: May 19-22, 2008 Cedar City, UT Jun 09-12, 2008 UVU, Orem, UT Aug 25-28, 2008 Layton UT</p>	<p>Class II Tester Re-certification Class: Jul 30-Aug 01, 2008 Logan, UT Sep 17-19, 2008 St George, UT Nov 17-19, 2008 UVU, Orem, UT Dec 03-05, 2008 Ogden, UT Dec 15-17, 2008 UVU, Orem, UT</p> <p>Class I Administrator Re-certification (Please see Certification Classes)</p>
<p>Backflow Training Services 2071 West Byron Circle West Valley City UT 84119 Call: (801) 554-6052 E-mail: bckflwsrvcs@netscape.net</p> <p>Location: Salt Lake Community College Miller Campus 9750 South 300 West Sandy UT</p>	<p>Class II Tester Certification Class: Mar 17-21, 2008 May 05-9, 2008 Aug 11-15, 2008 Dec 15-19, 2008</p> <p>Class I Administrator Certification: Mar 18-21, 2008 May 6-9, 2008 Aug 12-15, 2008 Dec 16-19, 2008</p>	<p>Class II Tester Re-certification Class: Mar 19-21, 2008 May 7-9, 2008 Aug 13-15, 2008 Dec 17-19, 2008</p> <p>Class I Administrator Re-certification (Please see Certification Classes)</p>

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This schedule of all Backflow Assembly Tester and Program Administrator training can be found at http://www.drinkingwater.utah.gov/documents/compliance/BF_Training.pdf. The complete training calendar is found at <http://www.calendarwiz.com/uwwtccal>. If you have questions concerning Backflow Assembly Tester and Program Administrator certification, call Michael Moss at (801) 536-0089 or email at msmoss@utah.gov. ■

Meet the new Division of Drinking Water professionals

Pete Keers **Environmental Scientist**

I have a Bachelor of Science degree in Recreation Management from the University of Vermont. I am a certified water operator in distribution grade 4 and treatment grade 3. I am also a class 3 backflow technician. I have also been a certified wastewater operator, treatment 2.

I came to Utah in 1982 to find a job in the ski industry. I worked for 15 years in several areas of Snowbird Ski and Summer Resort. In my position as assistant director of public safety, I was responsible for employee and guest safety/risk management, customer service, and parking services. I was also involved in emergency response with the Salt Lake County Fire Department. My other hat was as a water operator for Salt Lake County Service Area #3, the purveyor of canyon water and sewer services. I would attend Rural Water and other training for CEUs and began to consider the water industry as a great career opportunity.

As backflow technician for Riverton City, I administered the cross connection control program as the new secondary pressurized irrigation system was

completed. I spent 4 years there as a water operator as well as my backflow duties.

I then took a system manager position with White City Water Improvement District. I spent 6 years on system maintenance duties and administered the cross connection program. I also did new water line and facilities construction inspections, plan reviews, and updated the system mapping with asbuilt documentation.

The duties of my current position with the Division of Drinking Water include operator training, sanitary surveys, emergency response, and cross connection control. ■

Sean Jordan **Environmental Engineer**

On May 1, 2008, Sean Jordan began work in the Division's Engineering Section. Mr. Jordan's background includes civil and environmental engineering consulting in the private and government sectors. His most recent projects include sewer studies, floodplain modeling, environmental review, and water and sewer construction/inspection projects. He enjoys fishing with his kids. ■

Division of Drinking Water **Staff Directory**

Mission Statement

"To protect the public against waterborne health risks through assistance, education and oversight."

Division of Drinking Water
150 North 1950 West
P.O. Box 144830
Salt Lake City, Utah 84114-4830
Main Telephone: (801) 536-4200
Fax: 801-536-4211
Website: <http://drinkingwater.utah.gov>

Continued on next page 

Division of Drinking Water Staff Directory

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Heath, Cheri	536-0070	crheath@utah.gov
Holdaway, Brad	536-0063	bholdaway@utah.gov
Lee, Janet	536-0088	jjkeller@utah.gov
Lore, Don	536-4204	dlore@utah.gov
Oakeson, John	536-0057	joakeson@utah.gov
Shakespear, Brett	536-4198	bshakespear@utah.gov
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Field Services Section		
Dyches, Kim, <i>Manager</i>	536-4202	kdyches@utah.gov
Hand, Margaret	536-4192	mhand@utah.gov
Hansen, David	536-4203	dfhansen@utah.gov
Keers, Peter	536-4150	pkeers@utah.gov
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Olsen, Elden	536-4097	eldenolsen@utah.gov
Engineering Section		
Macauley, Ying-Ying, <i>Manager</i>	536-4188	ymacauley@utah.gov
Bertelson, Mark	536-0087	mbertelson@utah.gov
Birkes, Bill	536-4201	bbirkes@utah.gov
Georgeson, Michael	536-0092	mgeorgeson@utah.gov
Hart, Bob	536-0054	bhart@utah.gov
Jordan, Sean	536-0098	sjordan@utah.gov
Mortensen, Michael	536-0039	mmortensen@utah.gov
Onysko, Steven	536-0096	sonysko@utah.gov
Construction Assistance Section		
Wilde, Ken, <i>Manager</i>	536-0048	kwilde@utah.gov
Bobb, Heather	536-0093	hbobb@utah.gov
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Dev, Nagendra	536-4195	ndev@utah.gov
Grange, Michael	536-0069	mgrange@utah.gov
Peterson, Rich	536-4035	richpeterson@utah.gov
Tatum, Karin	536-0099	ktatum@utah.gov

Division of Drinking Water

Contact List

DIRECTOR'S OFFICE	
DIRECTOR	ENGINEER SPECIALIST
Ken Bousfield (801) 536-4207	Eva Nieminski, Ph.D. (801) 536-4189

SUPPORT STAFF	
Main telephone number: (801) 536-4200	
ADMINISTRATIVE SECRETARY	GRAMA REQUEST/RECORDS INFORMATION SPECIALIST
Linda Matulich (801) 536-4208	Carolyn Esser (801) 536-4190
CONTRACT GRANT SPECIALIST	SECRETARY
Heather Bobb (801) 536-0093	Jennifer Yee (801) 536-4216
CONTRACT GRANT SPECIALIST	DATA ENTRY
Sandy Pett (801) 536-4212	Cherie Heath (801) 536-0070

ADMINISTRATIVE SERVICES SECTION	
SECTION MANAGER	ADMINISTRATIVE SECRETARY
Kate Johnson (801) 536-4206	Linda Matulich (801) 536-4208
SOURCE PROTECTION/PERS	GRAMA REQUESTS/RECORDS INFORMATION
1. Jim Martin (801) 536-4494	Carolyn Esser (801) 536-4200 or (801) 536-4190
2. Mark Jensen (801) 536-4199	
3. Kate Johnson (801) 536-4206	CONTRACT GRANT SPECIALIST
	Sandy Pett (801) 536-4212

CONSTRUCTION ASSISTANCE SECTION	
SECTION MANAGER	CONTRACT GRANT SPECIALIST
Ken Wilde (801) 536-0048	1. Heather Bobb (801) 536-0093 2. Sandy Pett (801) 536-4212
FEDERAL SRF PROGRAM	STAG GRANT PROGRAM
1. Karin Tatum (801) 536-0099	1. Bob Hart (801) 536-0054
2. Julie Cobleigh (801) 536-4197	2. Ken Wilde (801) 536-0048
3. Michael Grange (801) 536-0069	3. Karin Tatum (801) 536-0099
4. Heather Bobb (801) 536-0093	
5. Ken Wilde (801) 536-0048	COMMUNITY IMPACT BOARD
6. Nagendra Dev (801) 536-4195	Karin Tatum (801) 536-0099
STATE SRF PROGRAM	DIVISION WEBSITE
1. Rich Peterson (801) 536-4035	1. Rich Peterson (801) 536-4035
2. Karin Tatum (801) 536-0099	2. Mark Jensen (801) 536-4199
3. Michael Grange (801) 536-0069	
4. Julie Cobleigh (801) 536-4197	DRU DATABASE
5. Heather Bobb (801) 536-0093	1. Mark Jensen (801) 536-4199
6. Ken Wilde (801) 536-0048	2. Rich Peterson (801) 536-4035
<i>(continued page 36)</i>	

CAPACITY DEVELOPMENT/ASSESSMENT	
1. Michael Grange (801) 536-0069	
2. Ken Wilde (801) 536-0048	

ENGINEERING SECTION	
SECTION MANAGER	PLAN REVIEWS/OPERATING PERMITS & NEW SOURCES & SYSTEMS
Ying-Ying Macauley (801) 536-4188	1. Bill Birkes (801) 536-4201
	2. Bob Hart (801) 536-0054
WATER TREATMENT/SOURCE CLASSIFICATION	3. Steve Onysko (801) 536-0096
1. Bob Hart (801) 536-0054	4. Mark Bertelson (801) 536-0087
2. Steven Onysko (801) 536-0096	5. Michael Mortensen (801) 536-0039
3. Bill Birkes (801) 536-4201	6. Sean Jordan (801) 536-0098
4. Mark Bertelson (801) 536-0087	7. Michael Georgeson (801) 536-0092
NEW SOURCES AND SYSTEMS	RULE WRITING
1. Steven Onysko (801) 536-0096	1. Bill Birkes (801) 536-4201
2. Bill Birkes (801) 536-4201	2. Steve Onysko (801) 536-0096
3. Bob Hart (801) 536-0054	
4. Mark Bertelson (801) 536-0087	WATER TREATMENT TECHNICAL ASSISTANCE
5. Michael Mortensen (801) 536-0039	Eva Nieminski (801) 536-4189

FIELD SERVICES SECTION	
SECTION MANAGER	ENVIRONMENTAL PROGRAM COORDINATOR
Kim Dyches (801) 536-4202	Margaret Hand (801) 536-4192
OPERATOR CERTIFICATION	EMERGENCY PREPAREDNESS & VULNERABILITY ASSESSMENT
1. Kim Dyches (801) 536-4202	1. Kim Dyches (801) 536-4202
2. Margaret Hand (801) 536-4192	2. John Oakeson (801) 536-0057
3. John Oakeson (801) 536-0577	3. Elden Olsen (801) 536-4097
4. Mark Hansen (801) 536-4205	4. Pete Keers (801) 536-4150
SANITARY SURVEY ISSUES	CROSS CONNECTION
1. Elden Olsen (801) 536-4097	1. Mike Moss (801) 536-0089
2. John Oakeson (801) 536-0577	2. John Oakeson (801) 536-0577
3. Dave Hansen (801) 536-4203	3. Kim Dyches (801) 536-4202
4. Kim Dyches (801) 536-4202	4. Elden Olsen (801) 536-4097
5. Mark Hansen (801) 536-4205	5. Pete Keers (801) 536-4150
SANITARY SURVEY SCHEDULING	
Dave Hansen (801) 536-4203	

(continued page 37)

RULES SECTION	
SECTION MANAGER Patti Fauver (801) 536-4196	SECRETARY Jennifer Yee (801) 536-4216
ORGANICS & INORGANICS 1. Rachael Cassady (801) 536-4467 2. Patti Fauver (801) 536-4196 3. Don Lore (801) 536-34204	DATA ENTRY Cherie Heath (801) 536-00070
SURFACE WATER TREATMENT RULES & DISINFECTION BYPRODUCTS RULE 1. Brad Holdaway (801) 536-0063 2. Mark Hansen (801) 536-4205 3. Patti Fauver (801) 536-4196	LEAD & COPPER 1. Don Lore (801) 536-4204 2. Rachael Cassady (801) 536-4467 3. Patti Fauver (801) 536-4196
RADIONUCLIDES & RADON 1. Rachael Cassady (801) 536-4467 2. Brett Shakespear (801) 536-4198 3. Patti Fauver (801) 536-4196	GROUNDWATER RULE 1. John Oakeson (801) 536-0057 2. Elden Olsen (801) 536-4097 3. Mark Hansen (801) 536-4205
RULES & PUBLIC NOTIFICATION 1. Janet Lee (801) 536-0088 2. Patti Fauver (801) 536-4196 3. Rachael Cassady (801) 536-4467	CONSUMER CONFIDENCE REPORTS 1. Brett Shakespear (801) 536-4198 2. Rachael Cassady (801) 536-4467 3. Jennifer Yee (801) 536-4216
SDWIS DATABASE 1. Brett Shakespear (801) 536-4198 2. Mark Jensen (801) 536-4199	TOTAL COLIFORM RULE (TCR) 1. Janet Lee (801) 536-0088 2. Rachael Cassady (801) 536-4467 3. Patti Fauver (801) 536-4196
ARSENIC RULE 1. Don Lore (801) 536-4204 2. Patti Fauver (801) 536-4196	

EMERGENCIES	
In an emergency, contact the Division of Drinking Water (DDW) staff:	
During normal working hours:	DDW telephone: (801) 536-4200
After hours:	Department of Environmental Quality (DEQ) Emergency response telephone: (801) 536-4123
	DDW cell phones: #1: (801) 556-7333; #2: (801) 556-9486
	DDW pager number: (801) 536-0880