

OpenLine



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Special points of interest:

- The Division of Drinking Water has moved!!! See new location information on page 28 of this issue



Primacy by Kenneth H. Bousfield

In the last edition of the OpenLine I discuss issues about “Primacy”, or the implementation of the federal Safe Drinking Water Act. The focus of that article was how the Division’s approach to implementation of EPA’s regulations differs from EPA’s approach. In this article I will talk about Primacy in the context of workload increases.



While the Division is involved in a number of State and/or federal programs, including: a) Source protection, b) Engineering plan review, c) Operator certification, d) Sanitary surveys, e) Emergency response, f) Capacity development, and g) Financial assistance; the program most people attribute to EPA and the federal Safe Drinking Water Act is the monitoring and reporting requirements.

Anyone who has been involved in supplying drinking water to their customers is aware that over the years EPA has added a number of new regulations. For example, since January 1, 2000 the following regulations have been added:

1. The Public Notification Rule; promulgated in May of 2000,
2. The Drinking Water SRF Rule; promulgated in August of 2000,
3. The Radionuclides Rule; promulgated in December of 2000,
4. The Arsenic Rule; promulgated in January of 2001,
5. The Filtered Backwash Recycling Rule; promulgated in June of 2001,
6. The Unregulated Contaminant Monitoring Rule; promulgated in September of 2001,
7. The Long Term 1 Enhanced Surface Water Treatment Rule; promulgated in January of 2002,
8. Minor Correction to the Lead Copper Rule; promulgated in June of 2004,
9. The Long Term 2 Enhanced Surface Water Treatment Rule; promulgated in January of 2006,
10. Stage 2 Disinfection Bi-Products Rule; promulgated in January of 2006, and Ground Water Rule; promulgated in November of 2006.

As the above list shows, a number of regulations have been added, and EPA is not finished with adding regulations. For example, EPA is currently proposing revisions to the Total Coliform Rule and more regulations are on the horizon.

Of particular note is the fact that the more recent regulations carry with them added requirements beyond the traditional monitoring, reporting, and treating of waters that do not comply with the quality standards. The following three examples are given to illustrate this point:

The Long Term 2 Enhanced Surface Water Treatment Rule requires sampling of raw water sources on a rigid schedule and then categorizing the source water into one of four “bins” based on the quality of the results of samples. Then depending on the assigned “bin” the water utility must select and implement a satisfactory combination of additional treatment options and/or management strategies to comply with the regulation.

The Stage 2 Disinfection Bi-Products Rule requires the preparation of an Initial Distribution System Evaluation Report. This involves proceeding with a defined method to determine where the highest values of disinfection by-products exist in the distribution systems and then following up with reporting on how the determinations were made and the findings of the evaluation.

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Primacy continued



“The change in this approach has resulted in increasing the number of water systems on EPA’s watch list “



The Ground Water Rule requires that significant deficiencies found during sanitary surveys be followed up with a corrective action plan that is reported to the primacy agency. Then the water utility is required to implement the plan to correct the deficiency and the primacy agency is expected to track the correction activities and report them to EPA.

The addition of complexities carries on with the proposed revisions to the Total Coliform Rule. As proposed, a water system must conduct an investigation regarding the cause of a coliform positive sample and report the findings of the investigation to the primacy agency. These added complexities create additional work and expense for water utilities as well as with the Division of Drinking Water.

In addition to workload increases that new rules bring, the Division is also burdened with implementing new EPA programs. An example of this is EPA’s move away from a significant non-complying list to a new enforcement targeting tool (ETT) list. The new ETT list, as it is referred to in discussions and correspondence with EPA, involves the identifying of violations for every water system within the previous five years on a rolling calendar basis as time moves on. EPA divides the violations into three broad categories:

1. **Acute Contaminants**; specifically acute coliform violations, (fecal or E. Coli contaminants), and nitrate quality violations, (this group of violations has a weighting factor of 10 points)
2. **Non-acute Contaminants**; consisting of mostly of all other chemical quality violations, (this group of violations has a weighting factor of 5 points), and
3. **Monitoring and Reporting Violations**, (this group of violations has a weighting factor of 1 point).

Each of these three categories of violations has a weighting factor assigned to it as shown parenthetically above. Each violation in a given category is counted by the weighting factor for that category. For example a single nitrate quality violation would be 10 points because this violation is in category 1 above. Similarly 5 points are involved for violations in category 2 and 1 point is involved for violation in category 3. The points for each violation are added together to obtain a sub total. Then the number of years that the longest unresolved violation has existed is added to the water system’s sub total score to obtain the water system’s final score.

EPA then arranges the water systems within each state by the numeric score from the highest to the lowest. Any water system with a score of 11 or greater is considered a candidate, by EPA, of an enforcement action. Hence the name of the program: “Enforcement Targeting Tool”. As an example, if a water system had a nitrate quality violation in the past 12 months, that one violation would be worth 10 points and because it occurred within the past 12 months an additional point would be added to the score for a resultant score of 11. Similarly an arsenic quality violation and an antimony quality violation would also yield at least 11 points.

The change in this approach has resulted in increasing the number of water systems on EPA’s watch list for Utah from the 25 for the old significant non-complier list to 104 for the new enforcement targeting tool list. This is a four fold increase in the expected work load of the Division.

A water system can come off the list in one of two ways: 1) the system receives a **formal** enforcement action from the primacy agency, or 2) the water system returns to compliance. EPA defines **formal** enforcement actions as: a) the state issuing an administrative order with a penalty, b) the filing of a civil or criminal case in district court, or c) the assessment of a penalty. If the Division fails to initiate a **formal** enforcement action as indicated above, EPA is at liberty to over file, which means EPA may initiate a **formal** enforcement action against the non complying water system.

The Division would prefer to address the violation in an **informal** way including: a) technical assistance via phone calls, e-mails, letters or site visits, b) informational mailings such as monitoring schedules, rule compliance instructions and violation notices or c) entering into Bilateral Compliance Agreements with the water system. Hopefully, these efforts will result in returning the water system to compliance, and thus remove the water system from EPA’s list.

I would like you to make note of three specific take home messages from this discussion: The Division of Drinking Water is very cognizant of the burdens the rules have placed on water systems as the Division is seeing similar burdens in its workload,

Primacy

The Division is very anxious in avoiding the intrusion of EPA in the state's business as we implement the Federal Safe Drinking Water Act, and

Water systems are encouraged to pay attention to monitoring schedules and other mailers discussing issues that water systems need to be aware of. In taking a proactive position water systems can avoid: 1) appearing on EPA's violation list, and 2) avoid EPA enforcement.

Primacy is a small word, but it encompasses a lot of activities and issues. If at any time you have questions or need assistance, please feel free to contact Division personnel.



Community Financial Assistance Program

By Julie Cobleigh

The Drinking Water State Revolving Fund (DWSRF) financial assistance program had huge success in 2009! With the addition of stimulus money from the American Resource and Recovery Act (ARRA), we had over \$40 million available for drinking water infrastructure projects needed to achieve or maintain compliance with Drinking Water Rules. To put this in shocking perspective, ten years ago, following the introduction of the new federal DWSRF financial assistance program, we had roughly \$10 million in annual funding. By 2008 our funding had grown to approximately \$19 million annually. While 2009 was a big money year for us because of the ARRA, our normal funding will increase every year because the DWSRF is a revolving fund. We receive annual payments from borrowers on the loans, which are added to new money received each year. We expect to have at least \$23 million available each year from now on.

Some highlights and success stories of 2009.....

Beaver City received funding to replace approximately 62,500 feet of deteriorating 2-inch and 4-inch, 60-yr old galvanized steel and cast iron waterlines. These old pipes caused a significant amount of water loss - 174,514,607 gallons of water per year were unaccounted for. Beaver City estimated that approximately 80% of the unaccounted water would be saved annually by replacing the identified leaking waterlines. Great example of water conservation! Upon completion of the project, cost savings from the reduction in pumping and waterline breaks, along with increased revenue from replacing worn service meters will save a total of \$134, 759 per year.

Central Iron County Water Conservancy District received funding to take over the Park West subdivision, which was on the Worst 25 list. With this project, the District connected to the Park West subdivision, replaced all of their old, undersized waterlines and their well and well house. These improvements will bring their facilities into compliance with Drinking Water Rules and will eliminate all of their violations.

Daggett County (Dutch John) received funding to install a SCADA system at their water treatment plant, a back-up generator and new transmission lines. This project is a result of the privatization of Dutch John, Utah. Dutch John was turned over to the management and governing authority of Daggett County by the Bureau of Reclamation. At the time of this agreement, the town's culinary water distribution system lacked pressure and the required fire flows to meet Drinking Water Rules. As a result, the large cost of upgrading the water distribution system is being incurred by Daggett County. By upgrading the existing system, new areas of the town will be opened up to the availability of water service, in turn, reducing the impact cost of new land development.

Washington County Water Conservancy District received funding to construct a new, 10 million-gallon (MG) storage tank at the Quail Creek water treatment plant. Currently the storage capacity of the treatment plant is 14 MG, yet the peak daily demand is 26 MG. The District provides water to six communities in the area.

“We expect to have at least \$23 million available each year from now on.”





Community Financial Assistance *continued*

Cannonville received funding to rebuild a severely deteriorated storage tank and construct a new transmission line, all for under \$450,000. Prior to funding, there was no transmission line from the well to the storage tank. The storage tank was filled by back-feeding through the distribution system, which caused extremes in pressure fluctuation during pumping and allowed sediment and minerals to settle in the distribution system rather than in the storage tank.

What is new and exciting in 2010.....

The 2010 funding came with a couple of new requirements that are likely here to stay in the federal DWSRF program. Davis-Bacon wages now apply to all future projects (or until further notice). We are also required to use 20% of our annual funding on green infrastructure projects to address water and energy efficiency improvements or other environmentally innovative activities. Examples of green infrastructure projects include energy efficient retrofits to pumps, clean power (wind, solar, hydroelectric, geothermal), leak detection equipment, water meters, and wet weather management systems. If you have a Green project, we would love to discuss it with you!

On Line Exams *by Kim Dyches*

**“The
Commission
voted in
support of
hosting online
exams.”**

At the last Operator Certification Commission meeting the Commission voted in support of hosting online exams. The exams would be held at the local health departments and the operators would be able to schedule exams to take them anytime the health department could schedule them. This would allow water systems that needed to have a certified operator to take the exam without having to wait for the regular exam cycle. The operator would also know their score once they hit the submit button and would have to wait to get the results. It seems that several States have piloted the online testing and the support continues to grow. The only drawback would be that there would be a fee charged to cover the cost of the outside testing firm handling the exam. The Association of Boards of Certification currently administers the online exams. They have the software and the built in security to protect the integrity of the ex-

ams. The online exams would still need to be procured to ensure all of the rules for taking the exams are followed. We should begin pilot testing in the coming months to see how the system works. Once we have sites set up and the pilot testing is complete, we should be able to move ahead full scale with the program.



What if You Have Contaminated Water System from Leaking Fuel Storage Tanks?

Authors: Nathan Lunstad, P.E. and Ying-Ying Macauley, P.E.

There have been a few incidents in Utah where leaking fuel storage tanks (underground and above ground) have contaminated ground water, soil, and even public drinking water systems. This article will discuss briefly how this contamination occurs and steps to take to plan and respond to a similar incident.

How did the contamination enter the water system?

AWWA's M41 Manual of Water Supply Practice for Ductile-Iron Pipe and Fittings indicates that: "Research has documented that certain pipe materials (such as polyethylene, polybutylene, polyvinyl chloride (PVC), and asbestos cement) and elastomers (such as those used in jointing gaskets and packing glands) may be subject to permeation by lower-molecular-weight organic solvents or petroleum products".

In documented incidents in Utah where soils contaminated with volatile organic compounds (VOC) such as gasoline from leaking underground and above ground storage tanks have contaminated drinking water systems; the contamination has resulted from permeation of the distribution system piping, gasket material, water meters, and service lines down stream of water meters. Plastic pipe walls and gasket materials are susceptible to permeation that can damage the material and contaminate the water. These chemicals can solvate and permeate the walls of the plastic pipe, potentially swelling and weakening the pipe and/or adversely affecting the taste and/or odor of the drinking water. With ductile iron pipe, the only opportunity for permeation is at the gasket. The standard gasket used in push-on and mechanical joints is made from the elastomer styrene butadiene (SBR).

In an EPA Region VIII document on VOC permeation the following 5 myths and facts were provided:

- Many believe that if the pressure in the pipe always remains positive that permeation by organics cannot occur. This is not true in fact, VOC permeation of plastic pipe occurs independently of water pressure.
- Many believe that the more rigid, thicker PVC material cannot be permeated by organics. This is also not true. PVC pipe can be permeated by organics. However, it takes longer to permeate PVC pipe than polyethylene or polybutylene and involves two distinct diffusion mechanisms.
- The rate of permeation of VOCs through plastic pipe is not significantly increased or decreased by repeated exposure to organics.
- The age of the plastic pipe makes little difference in the rate of permeation.

There is a ten-fold increase in the diffusion coefficient in plastic pipe when the temperature increases from 50-113 °F. However, temperature variation in the ground is insignificant (except in very warm areas in the nation) and therefore, temperature is not a large concern in the permeation of plastic pipes.

The EPA Region VIII document on VOC permeation also provided the following general considerations:

- There are no EPA regulations in effect now that will protect water customers from this route of exposure from VOC contamination. The drinking water rules only require VOCs to be tested at the source, not at the most vulnerable areas within the distribution system.
- Most incidents were found by individuals complaining about taste and odors in their drinking water.
- Routine testing of the drinking water is not done at leaking underground and above ground storage tank sites, even when they are within the boundaries of a city.
- There is no way to know if the water is contaminated when the levels of VOCs are below the taste and odor threshold and the source of contamination is in the distribution system. Some individuals may be drinking water with low levels of carcinogens for years at a time.

Contamination will follow the path of least resistance or least compacted soil, which is most likely where

“VOC permeation of plastic pipe occurs independently of water pressure.”



UTAH DIVISION OF DRINKING WATER



We're on the Web:
www.drinkingwater.utah.gov



the water and sewer pipes are laid.

Water Lines in Contaminated Soils

State Drinking Water Rule [R309-550-5\(10\)](#) - *Special Precautions in Areas of Groundwater Contamination by Organic Compounds* requires the following:

Where distribution systems are installed in areas of groundwater contaminated by organic compounds:

- (a) pipe and joint materials which are not subject to permeation of the organic compounds shall be used.*
- (b) non-permeable materials shall be used for all portions of the system including water main, service connections and hydrant leads.*

If contaminated soils are encountered or anticipated, PVC, HDPE or other plastic pipe and standard gaskets shall not be used. When these contaminated conditions are encountered, welded steel pipe, ductile iron pipe or other pipe material not subject to permeation shall be used. When using ductile iron pipe in contaminated conditions special gasket material should be specified to be made of permeation-resistant materials such as Nitrile or fluorocarbon. Viton or Nitrile gaskets are impermeable to hydrocarbons and are suitable to installation in contaminated conditions. In addition, when ductile iron pipe is installed in corrosive soils it is recommended to use a polyencasement (or so-called poly-wrap) method to protect the pipe.

Emergency Response and Recovery

Utah's public drinking water suppliers are encouraged to develop emergency response plans. For more information see www.drinkingwater.utah.gov/emergencies.htm for a copy of the Division's Emergency Response Guidebook. An additional resource is AWWA's M19 Manual of Water Supply Practice for Emergency Planning for Water Utilities. A leaking fuel storage tank would be classified as a human-caused disaster. Since most communities have gas stations or fuel storage facilities, we recommend that this type of emergency be included in the water system's Emergency Response Plan.

AWWA M19 Manual lists seven general steps to follow when such an emergency strikes. The bullet items under each step are our recommended actions that may be taken for this type of leaking fuel storage tank emergency.

Step 1: Analyze the type and severity of the emergency

- Determine the source of the contamination. If the source of the contamination is unknown, immediately start Step 3 sampling plan to obtain initial preliminary results of VOC levels in the drinking water, groundwater, and soil.
 - If the source of the contamination is known, eliminate the source of contamination.
 - Notify the appropriate State or Federal Agencies, for example, Utah Division of Drinking Water (801-536-4200) and Utah Division of Emergency Response and Remediation (801-536-4123). These agencies are experienced in dealing with this type of emergency, and can be good resources for technical assistance. Please note that the Division of Emergency Response and Remediation's funding assistance is limited to the sampling and remediation costs of the contamination caused by underground fuel tanks only (not for the contamination caused by aboveground fuel tanks.)
- Notify the affected water users immediately if the severity of the situation warrants such action.

Step 2: Provide emergency assistance to save lives

- Safeguard the lives and health of employees and the public.
 - Turn off water supply to affected area, or flush the waterlines with uncontaminated supply in the affected area.
 - Turn off water services to affected connections.
 - Re-route water supply lines to deliver uncontaminated drinking water to the affected area, if feasible. Or provide emergency drinking water (e.g., provide bottled water).
- Issue public notices if the sampling results from the laboratory indicate exceedance of drinking water Maximum Contaminant Levels (MCLs).

Step 3: Reduce the probability of additional injuries or damage

- Obtain sufficient quantity of sampling bottles for analyses from a laboratory that is certified for drinking water VOC analysis, such as Unified State Lab (801-965-2400), Chemtech Ford (801-262-7299), etc.
- Strategically select sampling locations to identify the extent of the affected area.

Collect drinking water samples to determine extent of contamination in the distribution system. Following steps are key issues for sampling for VOCs in the drinking water system:

Determine the type of distribution piping (mains and services) materials used in the contaminated area.

Create a map of the location of mains and service lines in relation to the source of contamination. Also include on the map the flow of water supply and the flow of contamination in the soil and ground water.

From the map, select the sample sites that would most likely show contamination.

Let the water sit undisturbed for six to eight hours or overnight (may need to valve off the line if it is a main distribution line).

Take first draw water directly from the service line or main. If this is not possible, take the first draw sample from the most vulnerable tap.

Take another sample after 5 minutes of running water from the same tap.

- Collect soil and groundwater samples to determine extent of the soil and groundwater contaminations. (Depending on local conditions the pipe trench may be the path of least resistance for the contaminants to follow.)

Inspect and test internal plumbing systems and the meter boxes in the affected area.

Step 4: Perform emergency repairs based on priority demand

- Map the locations of the drinking water, groundwater, and soil samples. Analyze the relationship of sample locations and test results. Determine the appropriate follow-up actions, such as additional flushing, additional sampling, etc.

- Remove or mitigate the contaminated soil.

Repair and/or replace water distribution piping, gaskets, meters, service connections, and appurtenances as needed. If needed, replace affected plastic service lines and PVC mains. In some cases where the soil still contain residual petroleum contaminants, the use of ductile iron pipe with Viton or Nitrile gaskets, soldered copper pipe, or welded steel pipe is needed.

Step 5: Return system to normal levels (recovery)

- Cleanup source of contamination to a level that will not promote further permeation to occur.
- Re-sample the VOC level in the affected area to verify meeting drinking water MCLs.
- Lift any public notice.

Perform less urgent repairs

Step 6: Evaluate response and preparedness plan

Review response and compare them to those outlined in the plan.

Step 7: Revise plan as necessary

Modify and update the emergency response plan from “lessons learned”.



“If contaminated soils are encountered or anticipated, PVC, HDPE or other plastic pipe and standard gaskets shall not be used.”

Mapping Ground Water Rule Requirements: Sanitary Survey and Corrective Action

This is the fourth article in a series of five developed by US Environmental Protection Agency (EPA), Office of Ground Water and Drinking Water (OGWDW) that summarize key components of the Ground Water Rule (GWR). As with all drinking water rules, please check with your Primacy Agency for specific State-related requirements.

What are the Basic Requirements of the Ground Water Rule (GWR)?

Two of the four GWR requirements (Source Water and Compliance Monitoring) have been discussed in previous articles. Source Water Monitoring, which includes Triggered, Additional, and Assessment Monitoring, is required for systems not providing 4-log treatment. Compliance Monitoring is how an operator documents 4-log treatment of viruses by monitoring and maintaining a State-determined minimum disinfectant residual. In this article we will discuss the two remaining requirements: **Sanitary Surveys** and **Corrective Action**.

How the GWR impacts the State's role in Sanitary Surveys

The purpose of a sanitary survey is to review the public water system's source, equipment, facilities and treatment procedures to ensure they have been properly maintained and operated to make certain that safe drinking water is distributed to the public. Under the TCR, the States conducted sanitary surveys on a five-year cycle for community and non-community water systems (CWSs and NCWSs) that collected fewer than five TCR samples per month and every 10 years for NCWSs that disinfected their source. Under the GWR, the sanitary survey requirements have been revised for GWSs to be consistent with surface water systems by increasing the frequency and completeness of the sanitary surveys to enhance the public health protection. GWR requirements regarding sanitary survey frequency and deadlines are shown in Table I.

Table I. Sanitary Survey Frequencies and Dates

System Type	Minimum Frequency	Compliance Date ¹
Community GWS (conducting triggered source water monitoring)	Every 3 years	December 31, 2012
Community GWS providing 4-log treatment (conducting compliance monitor-	Every 5 years	December 31, 2014
Community GWS with an outstanding performance record ²		
Non-community GWS		

¹Initial sanitary survey must be completed by the compliance date.

²Outstanding performance records are determined by the State.

How the Sanitary Surveys Might Impact Public Water Systems

The GWR requires that a sanitary survey address eight specific elements and for the surveyor to identify any significant deficiencies that may exist at the water system. A significant deficiency identified during the sanitary survey must be addressed by the public water system within a specified time frame determined by the State. GWSs should be aware of the eight elements in a sanitary survey and what might be considered a significant deficiency by the State to avoid compromising the quality of the water and public health. The eight elements and some examples of what might be evaluated are described below:

1. *Source* – well construction, potential source contamination, setback distances, source quantity and quality, well locations, source water transmission mains, site security, and general housekeeping.
2. *Treatment* – design criteria, plant records, past inspections, operation, maintenance, and overall management of treatment facility.
3. *Distribution System* – review schematics, operation and maintenance records, operating procedures, construction standards, and distribution system water quality data.
4. *Finished Water Storage* – tank integrity, operational readiness, site security, potential sanitary risks, proper maintenance checks, and operation & maintenance procedures.
5. *Pumps, Pump Facilities, and Controls* – pump capacity, maintenance, pump control system, emergency power back up, pump tests, remote monitoring, controls and alarms.
6. *Monitoring, Reporting and Data Verification* – compliance with site sampling and monitoring plans, monthly reports, daily logs, analytical results

and monitoring data, and record keeping requirements.

7. *System Management and Operation* – managerial, and financial and technical sustainability.
8. *Operator Compliance with State Requirements* – properly certified staff depending on the size and type of system.

If while conducting a sanitary survey the State identifies a significant deficiency, it is the State's responsibility to inform the public water system of the deficiency and to work with the public water system to correct the significant deficiency.

Corrective Action

Corrective action is required if the GWS falls into one of the scenarios described below:

- ✦ Significant deficiencies identified by the State during a field visit or a sanitary survey.
- ✦ One of the samples collected during triggered source water monitoring is fecal indicator-positive (FI+) and the State requests the system to go straight to corrective action.

One of the samples collected during additional source water monitoring is FI+

There are four main corrective action options:

1. Correct all significant deficiencies.
2. Provide an alternate source of water.
3. Eliminate the source of contamination.

Provide treatment that reliably achieves 4-log treatment of viruses.

The GWR specifies a schedule for corrective actions. The State notifies the GWS of a significant deficiency. The public water system has 30 days to consult with the State to determine an appropriate corrective action. The GWR states that the system has 120 days to complete measures or steps as indicated in their corrective action plan or they must be in compliance with a state-approved corrective action schedule. Table 2 below provides a graphic representation of the GWR requirements for corrective action.



Table 2. Corrective Action Timeline

Frequently Asked Questions for Sanitary Surveys and Corrective Action

Question #1: Can the system alone (without input from the State or Primacy Agency) decide whether to go directly to corrective action or to conduct additional source water monitoring?

Answer #1: No. If a triggered source water sample is FI +, the GWS must conduct additional source water monitoring unless it is directed by the state to complete a corrective action. If any of the additional source water monitoring samples are FI+ the system must take corrective action. GWSs must consult with the state within 30 days of being notified by the state of a significant deficiency or receiving the results from the lab that one or more of the additional source water monitoring samples were FI+.

Question #2: Can a significant deficiency only be identified during a sanitary survey?

Answer #2: No. Under the GWR, states have the authority to identify a significant deficiency at any time.

Question #3: Are significant deficiencies limited to fecal contamination (i.e., only virus-related contamination)?

Answer #3: No. A significant deficiency is defined as a situation that is causing, or has the potential to cause, introduction of contamination into the water delivered to consumers.

Training Opportunities

EPA has concluded conducting its workshops and webcast trainings on the GWR at this time; however there still may be trainings sponsored by your State, EPA Region, or technical assistance providers. Contact your EPA Region or State for more information on workshops or trainings that might be conducted near you. For more information on the GWR, please visit the GWR homepage at: www.epa.gov/safewater/disinfection/gwr. The next and last article will cover the GWR requirements for Public Notification, Consumer Confidence Report and Special Notice.

The DBP Evolution by Brad Holdaway

Time is flying by and so is the Stage 2 DBP Rule. The good thing about this rule is that it lets you know if you have high levels of THM's and HAA's in your distribution system so you can do something about it. It's also a very good thing to know if you have low levels in your system for liability purposes.

All water systems that were required to do standard monitoring as part of the Initial Distribution System Evaluation should now have their IDSE Report turned in as the deadline for Schedule 4 systems was July 1, 2010. If you haven't turned it in, the IDSE Report for Standard Monitoring is located on the Division's web site at drinkingwater.utah.gov under "blank forms".

Compliance Monitoring, Looking to the Future

Stage 2 compliance monitoring begins April 1, 2012, for Schedule 1 systems (population of at least 100,000). Schedule 2 systems (population 50,000 to 99,999) begin sampling October 1, 2012. Schedule 3 (10,000 – 49,999) and 4 (less than 10,000) systems begin October 1, 2013. Refer to Table 4 to see your system's requirements.

If your system participated in the IDSE then you don't need to worry about submitting a sampling plan, your IDSE Report becomes your Stage 2 sample plan. If however, your system got a waiver from the IDSE via the Very Small System Waiver or the 40/30 Waiver then you need to create and submit a sample site plan before your required Compliance Monitoring date.

The Division will be hosting a work shop at the Rural Water Conference in February, 2011 to help systems create their sample site plans. Look for further information to be posted on our web site in early 2011.

Table 4: Stage 2 DBPR Compliance Monitoring Requirements

Source Water Type	Population Size Category	Monitoring Frequency ¹	Distribution System Monitoring Location			
			Total per monitoring period ²	Highest TTHM Locations	Highest HAA5 Locations	Existing Stage 1 DBPR Compliance Locations
Subpart H	<500	per year	2	1	1	-
	500-3,300	per quarter	2	1	1	-
	3,301-9,999	per quarter	2	1	1	-
	10,000-49,999	per quarter	4	2	1	1
	50,000-249,999	per quarter	8	3	3	2
	250,000-999,999	per quarter	12	5	4	3
	1,000,000-4,999,999	per quarter	16	6	6	4
Ground	≥5,000,000	per quarter	20	8	7	5
	<500	per year	2	1	1	-
	500-9,999	per year	2	1	1	-
	10,000-99,999	per quarter	4	2	1	1
	100,000-499,999	per quarter	6	3	2	1
≥500,000	per quarter	8	3	3	2	

¹ All systems must monitor during the month of highest DBP concentrations.

² Systems on quarterly monitoring must take dual sample sets every 90 days at each monitoring location, except for Subpart H systems serving 500-3,300. Systems on annual monitoring and Subpart H systems serving 500-3,300 are required to take individual TTHM and HAA5 samples (instead of a dual sample set) at the locations with the highest TTHM and HAA5 concentrations, respectively. Only one location with a dual sample set per monitoring period is needed if highest TTHM and HAA5 concentrations occur at the same location, and month, in monitored annually.

Batch Chlorination


By Brad Holdaway

It has come to the Division of Drinking Water's attention with concern, that some Utah Drinking Water Systems are practicing "Batch Chlorination". This is defined as the practice of adding chlorine immediately before taking Total Coli form samples with the intent of guaranteeing sterile samples. The Division recognizes the need for periodic chlorination of un-chlorinated drinking water systems such as when bringing a seasonal system on line, emergencies or routine maintenance of reservoirs, lines, etc. However, "batch chlorination" to get clean samples blatantly goes against Drinking Water Rules and in our view falls under data falsification.

This practice is doing the system patrons a huge disservice and potentially providing them with unsafe drinking water and the system operator with a huge liability. If a person is caught practicing batch chlorination they will be placing their system in violation and may be subject to losing their Operator Certification license for a "demonstrated disregard for the public health and safety and/or misrepresentation of falsification of figures, and reports of both submitted to the State." The Operator Certification rules state:

R309-300-9. Certificate Suspension and Revocation Procedures.

2. Grounds for suspending or revoking an Operator's or a Specialist's certificate shall be any of the following:
 - (a) demonstrated disregard for the public health and safety;
 - (b) misrepresentation or falsification of figures and reports, or both, submitted to the State;
 - (c) cheating on a certification exam.



Rural Water Northern Conference: A TOOL For Turbulent Times

September 13 - 16, 2010

Conference Info:

Don't miss the 2010 Rural Water Northern Conference, Operator Rodeo and Water Operator Certification in Layton this September!

Not only is the RWAU Northern Conference one of the few times you can take the Operator Certification training course followed directly by the state certification exam the next day (while all the information is still fresh), but it offers CEU training to system personnel of all types and to systems of all sizes in one convenient location. (It also happens to be one of the best values available for your training dollar!) Highlight include:


- Water Operator Certification Training classes from Monday, September 13, to Wednesday, September 15, with the test offered on all levels on Thursday, Sept. 16 from 9:00—12:00

- Training tracks in Water, WW, Management & Large Systems
- Earn 1.6 water CEUs for Operator Certification course or 1.0 CEU for the Full Conference in both Water and WW
- All Northern Conference registrants are eligible to participate in the RWAU Operator Rodeo. Events include:
 - ⇒ Backhoe Obstacle Course
 - ⇒ GPS Confidence Course
 - ⇒ Meter Installation
 - ⇒ Pipe Tapping
- Vendors from across the state will be there with the latest goods and services available to you!
- Register to attend the Conference either at www.rwau.net or on the form in the booklet coming to you in the mail

Don't miss this chance to receive some excellent training and network with your peers—we'll see you there!

See www.rwau.net or call 801-756-5123 for more details.

2010 Northern Conference
DAVIS CONVENTION CENTER 1651 NORTH 700 WEST, LAYTON, UT





**“Changes in
the
membership
of the
Drinking
Water Board
were
needed”**



CHANGES IN THE DRINKING WATER BOARD

Changes in the membership of the Drinking Water Board were needed when Helen Graber, representing the public, moved out-of-state, and when Jay Franson, representing elected official, was not reelected. These vacancies have been filled by Russell O. Donoghue, representing the public and Heather Jackson, representing elected officials.

Russell Donoghue, currently retired, has work experience that brings value to the Board. Mr. Donoghue has been involved in operating and managing an RV Park in Moab. Included with his responsibilities, he operated the water system for the Park. Mr. Donoghue has also served as the Rural Water Association of Utah’s Executive Director on two separate occasions. Between his services in Utah, Mr. Donoghue worked with the National Rural Water Association. While Mr. Donoghue represents the public, he comes with a wealth of experience covering a wide variety of drinking water issues.

Heather Jackson is the Mayor of the City of Eagle Mountain in Utah County. As the Mayor she oversees the many departments in city government, including the water system serving the community. The community of Eagle Mountain came into existence in mid 1990’s and has since grown to a population exceeding 23,000 people. In her role as Mayor of the city, Ms. Jackson has received the Distinguished Budget Award in 2008 and 2009, from the Government Finance Officers Association. Because of Ms. Jackson’s experience, she brings an understanding of the competing issues facing cities and towns in Utah. She also has a wealth of management and budget experience to draw on as she deliberates on Board issues.



Sanitary surveys enable the State of Utah to provide a comprehensive and accurate review of the components of the water systems, to assess the operating conditions and adequacy of the water system and to determine if past recommendations have been implemented effectively. The purpose of the sanitary survey is to evaluate and document the capabilities of the water system's sources, treatment, storage, distribution network, operation and maintenance, and overall management to ensure the provision of safe water. In addition,, sanitary surveys provide an opportunity for States to visit the water system and educate operators about proper monitoring and sampling procedures and to provide technical assistance. The purpose of the survey is to:

Ensure the operational, monitoring, reporting, recordkeeping practices are in compliance with drinking water regulations.

Identify any significant deficiencies

Better ensure that safe drinking water is distributed to the public.

The sanitary survey should be a proactive public health measure that allows the State of Utah to better understand the needs of the water system operator.

Eight Elements of the Sanitary Survey

Source

Protecting the source prevents contaminants and pathogens from reaching consumers. The state will review information relating to source water quality and wellhead protection. Observations will be made about well construction, potential sources of contamination, setback distances, source quality and capacity, well locations, sources water transmission mains, site security, and general housekeeping.

Possible source significant deficiencies

- Well near source of fecal contamination
- Well in flood zone
- Improperly constructed well
- Spring boxes are poorly constructed and/or subject to

Treatment

Treatment varies among GSWs based on the quality of the source water and state regulatory requirements. The state will take into consideration design criteria, plant records and past inspections during the review. The overall design, operation, maintenance, and management of the treatment facility will be examined.

Possible treatment significant deficiencies

- Improper application of treatment chemicals
- Lack of redundant mechanical components were treatment is required
- Unprotected cross-connections with treatment sys-

Distribution System

Improper upkeep and maintenance of pipes and fixtures comprising the distribution system can compromise the safety of drinking water. Since the infrastructure is typically underground, the state will usually do a paper review of schematics, operation and maintenance records, operating procedures, construction standards, and distribution system water quality data.

Possible distribution system significant deficiencies

- Low or negative pressure that could result in contamination
- Lack of system flushing

Finished water storage

The condition of the storage facility can affect both water quality and water quantity. The state will review the GWS' files; perform field inspections to assess the tank's integrity, operational readiness, site security, and potential sanitary risks; ensure maintenance checks have been completed; and discuss current operation and maintenance (O&M) procedures with staff.

Possible finished water storage significant deficiencies

Inadequate internal cleaning/maintenance of storage tanks
Improper screening of overflow pipes, drains, or vents

Pumps, Pump Facilities, and Controls

The purpose of reviewing the pumps is to see if they

are in proper working order, are the best fit for their intended use, and to determine their reliability and establish if there are any sanitary risks. The state will obtain information about the pumps, including available data from previous sanitary surveys, the emergency power system (if available), pump tests, and remote monitoring controls and alarms.

Possible pumps, pumps facilities, and controls significant deficiencies

Inadequate pump capacity
Inadequate maintenance
Inadequate/inoperable control system

Monitoring, Reporting, and Data Verification

Verifying the quality of the drinking water distributed to the public ensures that the water complies with drinking water regulations and requirements. The state will determine whether site sampling and monitoring plans are being followed and requirements are being met by checking test results, monthly reports, and daily logs. The surveyor will determine whether the system has complete, up-to-date, and reasonable monitoring data.

Possible monitoring, reporting, and data verification significant deficiencies

Not monitoring according to site sampling plan or monitoring plan
Not meeting reporting requirements
Improper recordkeeping

System Management and Operation

Proper management can provide a GWS with direction, sufficient funding, and strong support. Reviewing a system's goals, plans, and budgets can give the state a good idea of whether the system's team is working well together or might need some assistance. The state will evaluate whether the GWS is sufficiently staffed and has enough funding for equipment to operate in a sustainable and safe manner.

Possible system management and operation significant deficiencies

Failure to meet water supply demands
No approved emergency response plan
Inadequate follow-up to deficiencies

Operator Compliance with State Requirements

Operators and staff must be properly trained based on system type, size and treatment. The state will confirm that operators are properly certified for their roles and responsibilities.

Possible operator compliance with state requirements significant deficiencies

Operator is not qualified as required by the state
Lack of operator training

2009 Water Operator Renewals

A total of 583 water operator certificates were renewed in 2009. 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 a certificate is listed as "expired" in the Utah operator certification database.

The operators listed below have submitted a renewal application and fee, and have successfully completed the required water-related training. The certificates will be valid until December 31, 2012. The Rules state that these operators must again earn a sufficient number of CEUs in the three-year period January 1, 2010, to December 31, 2012, in order to be eligible for renewal again in 2012.

D=Distribution; T=Treatment; DS=Small System

Operator Name	Certificate #	Water System	Type of
Agard, Roger F.	23019	Fountain Green City	D-I
Abrahamson, Shelly A.	23144	Draper City	T-II
Adams, Collin A.	26100	Water Specialist	D-IV
Adams, Wesley O.	20062	Layton City	D-IV
Aitken, Robert J.	22101	Central Utah Water Conservancy District	D-IV
Allen, Bevan H.	92100	Holliday Water Company	D-IV
Allen, Chris J.	99184	Ashley Valley Water & Sewer ID	T-IV
Allred, Clayton R.	22502	Park City	D-IV
Allred, John A.	87319	Water Specialist	T-IV
Alsup, Philip	93100	Bona Vista Water District	D-IV
Andersen, James A.	86629	Tooele City	D-IV
Anderson, Blake R.	87760	Kearns Improvement District	D-IV
Apedaile, G. John	23078	Casper's Ice Cream	D-S
Argentos, Bradley G.	90501	Salt Lake City	T-IV
Armenta, Ventura J.	94102	Water Specialist	T-IV
Ashton, Paul H.	26003	White City	D-IV
Ashworth, Randy C.	99101	Salt Lake City	D-IV
Atwood, Lee	23143	Paradise Town	D-I
Austin, Travis W.	06034	Cedar Hills City	D-IV
Averett, Christopher B.	21500	Salem City	D-IV
Axelgard, Mikel A.	23502	Jordan Valley Water Conservancy District	T-IV
Babcock, Keith L.	91100	Dutch John Town	T-I
Bacon, Keith L.	23022	St George City	D-I
Baggs, Kevin L.	20003	Browning Arms	D-S
Baldwin, J. Jeff	97102	Ogden City	D-IV
Banks, James B.	84210	Wolf Creek Water & Sewer	T-II
Barfuss, Jeffery S.	97103	South Ogden City	D-III
Barker, Joe A.	23081	Springdale Town	T-II
Barker, Shawn C.	94104	Springville City	D-IV
Barnett, Timothy S.	96101	Bountiful City	D-IV
Batty, Layne E.	94105	Orem City	D-IV
Baum, Robert D.	20500	Sandy City	D-IV
Bayer, Helmar G.	23503	Water Specialist	T-IV
Beauregard, Samuel L.	20501	Moab City	D-II
Bell, George Randall	98504	Castle Valley Special Service District	
Bell, Gregory R.	23082	Alta Ski Area / Watson Shelter	D-II

Bennett, James A.	23026	Spring City	D-I
Bertola, Harold L.	23027	Offshore Marinas	D-S
Bevins, Michael J.	93504	Water Specialist	D-IV
Bilbrey, Willis J.	95503	Sandy City	D-IV
Blackett, Justin M.	97503	Nephi City	D-III
Blake, Stephen J.	90503	Jordan Valley Water Conservancy Dis-	
trict			D-IV & T-IV
Blankenship, Michael A. Jr.	23083	Ogden City	D-IV
Blood, Devin D.	26004	Sterling Town	D-S
Bodell, Bryon J. 99505	Salt Lake City	T-IV	
Bodell, Reed L. 94107	Kennecott Utah Copper	D-III	
Bogenschutz, Jim J.	06036	Jordan Valley Water Conservancy Dis-	
trict			D-IV
Bonnett, Val D. 23148	Utah State Hospital	D-I	
Bowler, Trent C.	22506	St George City	D-IV
Bown, Ronald J.	88538	Jordan Valley Water Conservancy Dis-	
trict			T-IV
Bracken, Dustin L.	99110	St George City	D-IV
Bradbury, A. Scott	93548	Camp Steiner	T-I
Bretthauer, Erich W.	20006	Bryce Woodlands	D-S
Brinck, Jeffrey R.	06037	Salt Lake City	T-IV
Brinkerhoff, C. Kent	23029	Monte Vista Community & Water	
Company			D-I
Brinkerhoff, Jarad J.	26007	Best Friends Animal Society	D-S
Bristol, Louis 23084	Ashley Valley Water & Sewer ID	D-IV	
Brooks, William D. Jr.	20504	Zion National Park	D-II
Brough, Blaine E.	20072	Uintah Highlands Improvement Dis-	
trict			D-II
Brown, Jeff K. 20145	Kaysville City	D-IV	
Brown, Steven J.	20073	Mountain Green LDS Church	D-S
Brown, Timothy L.	94109	Ogden City	T-IV
Budd, Cameron C.	06039	Jordanville Special Service District	
			T-IV
Bullock, Ted C. 98505	Ogden City	T-IV	
Bundy, Talen L. 24039	St George City	D-IV	
Burch, Blake 86693	Metropolitan Water District of Salt Lake & Sandy	D-III	
Busch, Chad D. 22110	Metropolitan Water District of Salt Lake & Sandy	D-IV	
Butterfield, Eddie W.	21110	Ogden City	D-IV
Cain, Barry H. 91105	Ashley National Forest / Ross Springs	T-I	
Call, Jerilyn J. 23086	Uintah Highlands Improvement District	D-II	
Callister, Brian J.	97504	Jordan Valley Water Conservancy Dis-	
trict			T-IV
Campbell, Michael G.	94562	Sandy City	D-IV
Carlin, Blake R. 98107	Bona Vista Water District	D-IV	
Carpenter, Jamie	97107	Washington County Water Conser-	
vancy District			T-IV
Carter, Alden M.	97108	Centerville City	D-IV
Carter, Barry K.	92106	Water Specialist	D-IV
Carter, Dale E. 97109	Provo City	D-II	
Carver, Kimberley	25534	Metropolitan Water District of Salt	
Lake & Sandy			D-IV
Cedillo, Rene 93139	Brigham City	D-IV	
Chadburn, Jeremy J.	99114	St George City	D-IV
Chappell, Charles P.	20008	Loa Town / Aspen Ranch	D-S

Chappell, Lane 97110 Childers, Henry F.	Lyman Town / Fremont Waterworks 85003	D-I Washington County Water Conser-
vancy District T-IV		
Christensen, David L.	20507	Cove Fort LDS Historic Site D-I
Chynoweth, Brett H.	94111	Tropic Town D-I
Clark, Bradley Shane	24505	Washington County Water Conser-
vancy District T-IV		
Clark, Mark H. 90107	Weber Basin Water Conservancy District	T-IV
Clark, Steven D.	95509	Magna Water Company T-I & D-IV
Clement, Michael J.	88162	Salt Lake City T-IV
Coleman, Samuel R.	90108	Provo City D-IV
Collett, Craig W.	98507	Greendale Water Company D-S
Comp, Joey 26012	Kodachrome Basin State Park	D-S
Condie, John Kevin	94510	St George City D-IV
Connor, Jeff D. 20077	Weber Basin Water Conservancy District	T-IV
Cook, Calvin J. 20146	Water Specialist	D-S
Cook, Gordon P.	96506	Metropolitan Water District of Salt
Lake & Sandy D-IV		
Coon, Joseph L.	95510	Metropolitan Water District of Salt
Lake & Sandy D-IV		
Cox, Dennis W.	23035	Monte Vista Community & Water
Company D-I		
Cox, Ervin D. 22209	Washington County Water Conservancy District	T-IV
Cox, Steven W.	06009	Hurricane City D-IV
Crawford, Jon M.	21509	Kearns Improvement District T-IV
Crawford, Steven S.	88168	Jordan Valley Water Conservancy Dis-
trict T-IV		
Crittenden, Matt	23089	Kamas City D-II
Crofts, Brie N. 06010	Washington County Water Conservancy District	T-IV
Crookston, Brandon K.	26109	South Jordan City D-IV
Culver, James R.	23036	Washington County Water Conser-
vancy District T-IV		
Cunningham, Steve R.	20512	Water Pro Inc T-II
Curtis, Jay R. 97511	Logan City	D-IV
Daines, Steven M.	94511	Logan City D-II
Davis, Bill L. 97112	Provo City	D-II
Davis, David Guy	89112	Deer Creek Mine D-IV
Davis, Gary A. 90110	Cedar City	D-IV
Davis, Hal 92109	Ogden City	T-I
Davis, Jon G. 98509	Magna Water District	D-IV
Davis, Steven P.	92503	Murray City D-IV & T-I
Dawdy, Timothy L.	20081	Hill Air Force Base T-IV
Dea, Margaret 06041	Jordan Valley Water Conservancy District	D-IV
Dearing, Ryan C.	95109	West Jordan City D-IV
De Jong, Britt A.	85612	Weber Basin Water Conservancy Dis-
trict T-IV		
DeLeeuw, James Gary	23038	Greenwich Water Association D-S
Dennis, Patrick P.	94514	Water Pro Inc D-IV
Dillman, David H.	23508	Heber Valley Camp D-IV
Domingo, Manuel	21513	Kearns Improvement District D-II
Donahue, William M.	92112	Layton City D-IV
Douglas, Shawn G.	97514	Riverdale City D-IV
Doxey, James G.	98117	Ogden City D-IV
Dunton, Brian 20083	Sandy City	D-IV

Durrant, Gary C.	00640	Metropolitan Water District of Salt Lake & Sandy
Lake & Sandy D-IV		
Durrant, Spencer L.	88143	Salt Lake City D-IV & T-IV
Eames, Alton B.	06043	Brigham City D-II
Eames, Thomas D.	95112	Logan City D-IV
Earl, Jody L. 26014	ATK Promontory	D-II
Echevarria, Robert M.	20084	Water Specialist D-IV
Eck, Randy L. 26015	Providence City	D-III
Ecker, David R. 94119	Redmond Town	D-I
Eddy, Louis K. 00260	Weber Basin Water Conservancy District	T-IV
Edwards, Timothy P.	99514	St George City D-IV
Egan, Christopher B.	23509	Jordan Valley Water Conservancy District
Eggett, Brett K. 91110	Bountiful City	D-IV
Ellett, Pace N. 97121	Fishlake National Forest	D-I
Erickson, Kasey C.	96113	Logan City D-IV
Ericson, Edwin R.	90111	Wellington City D-II
Ernest, Danny 88510	Jordan Valley Water Conservancy District	D-IV
Ertmann, Lee E.	23512	South Jordan City D-IV
Eskelson, Enoch F.	23155	Cool Springs Mutual Water D-I
Evans, Charles H.	23041	Central Valley Town D-S
Evans, Cobe L. 26016	Parowan City	D-II
Ewell, Dallin D. 84039	Metropolitan Water District of Salt Lake & Sandy	D-IV
Fage, Fredrick L.	20517	Santa Clara City D-III
Farr, Wayne N.	93514	Summit Water Distribution Company
Favero, T. Kirk 96511	Riverdale City	D-IV
Fearn, Robert B.	86659	Weber Basin Water Conservancy District
Fenton, Quinn W.	97517	Orem City D-IV
Ferguson, Kristy K.	20518	Timpanogos Cave National Monument
Fillmore, Carl L.	23513	North Emery Water Users SSD D-II
Finstick, Sue A. 20013	Water Specialist	D-S
Fisher, Barton M.	20085	Milford City D-II
Fisher, Mark N.	06013	Kane County Water Conservancy District
Fryer, Keith B. 26019	Oquirrh Mountain Water Company	D-II
Frandsen, Darren H.	94123	Fruit Heights City D-IV
Frandsen, David R.	20520	Murray City T-IV
Frew, Nathan D.	06014	Weber Basin Water Conservancy District
Fritz, David J. 88159	Sandy City	D-IV
Fulgham, Paul C.	88129	Tremonton City T-IV
Fuller, Matthew S.	20090	Weber Basin Water Conservancy District
Funk, Daniel B. 21519	Harrisville City	D-IV
Gardner, Dana D.	97519	US Army - Dugway D-II
Gardner, Nolan L.	85004	St George City D-IV
Gifford, Dean J.	94127	Weber Basin Water Conservancy District
Giles, Clinton R.	99520	Magna Water District D-IV
Giraud, Jerry W.	26112	Price City T-IV
Glazier, Jay A. 93516	Park City	D-IV

Goodrich, Kenneth D-IV	92505	Ashley Valley Water & Sewer ID
Gordon, Brent H.	23159	LDS Church D-I
Gordon, Thomas W.	21125	Taylorsville-Bennion Improvement
District D-IV Grammer, Brad C.	99522	Central Utah Water Conservancy Dis-
trict D-IV		
Grandpre, Jamie E.	97125	Morgan City T-IV
Green, Lynn R. 23098	Tremonton City	D-III
Grundy, Stanley R.	99523	Jordan Valley Water Conservancy Dis-
trict T-IV		
Guffey, Rauni L.	23160	Tabiona Town D-I
Gunter, Kenneth G.	23100	Energy West Mining T-II
Guymon, Darce D.	97524	Huntington Canyon T-IV
Hacking, Scott D.	23162	Water Specialist D-II
Hadfield, Larry A.	22125	Lehi City T-IV
Hall, Larry A. 97525	Aqua Environmental Services Inc	D-IV
Halliday, Lynn 06045	American Land & Leisure	D-S
Hamblin, Jason B.	20093	Logan City D-IV
Hanks, Joseph S.	20020	Skyline Mountain Special Service Dis-
trict D-S		
Hanmann, Jeffery L.	97526	Water Specialist T-IV
Hansen, Chris P.	91114	Morgan City D-II
Hansen, Douglas A.	92508	Holliday Water Company D-IV
Hansen, Garrett L.	91115	Castle Valley Special Service District
T-III		
Hansen, W. Courtney	23518	St George City D-IV
Hardin, James R.	24017	Bluff Water Works Special Service
District D-I		
Harper, Richard D.	20094	Echo Mutual Water Company D-I
Harrah, Gregory R.	92122	Layton City D-IV
Harrington, Scott P.	96122	Copperton Improvement District
D-IV		
Harris, Brian L. 97527	Geneva Rock Products	T-IV
Harrison, Rustin R.	26113	Central Utah Water Conservancy Dis-
trict D-IV & T-IV		
Hatch, Alan B. 97528	Weber Basin Water Conservancy District	T-IV
Hatch, James H.	84255	South Davis Water District D-IV
Hatch, Roger K.	00354	Central Utah Water Conservancy Dis-
trict T-IV		
Hatfield, Pat B. 26114	Santaquin City	D-III
Hatfield, Shad 20095	Pleasant Grove City	D-III
Havens, Robert J.	23145	Cedar Highlands D-IV
Hawkes, R. Craig	20022	Howell Town D-S
Hayes, James F. 23102	Kearns Improvement District	D-I
Hayward, Dean G.	23046	Shiloah Wells Water Company D-S
Heaps, William D.	20097	Energy West Mining T-II
Heaton, Ingo H.	22516	Holliday Water Company D-IV
Heitman, Todd A.	97529	Water Specialist D-IV
Henderson, Patrick M.	84045	Murray City D-IV & T-II
Herbert, Lorin K.	23104	Ogden City T-I
Herrera, Ray 23521	Sandy City	D-IV
Higbee, Kelly D.	97530	Logan City D-III
Higham, Thomas R. Jr.	00080	Water Specialist T-II

Johnson, Joel M.	97135	Granger-Hunter Improvement District
D-IV		
Johnson, Moyle C.	20032	Bryce Canyon National Park D-II
Johnson, Rick B.	99532	South Ogden City D-IV
Johnson, Tome E.	20104	Arches National Park D-I
Jolley, Kevin M.20528	Water Specialist	D-II
Jones, Joshua L.22192	Tooele Army Depot	D-I
Jones, Kirt R. 23108	Energy West Mining	T-II
Jorgensen, Voneene J.	23528	Bear River Water Conservancy Dis-
trict		D-II
Judkins, Kevin D.	21535	Ogden City D-IV
Kearl, Teddy D.	93140	Layton City D-IV
Kegel, William B.	88118	Water Specialist D-IV & T-IV
Kelly, Mark 24519	Kearns Improvement District	D-II
Kendall, Dennis K.	86643	Lindon City D-IV
Kennedy, Glen R.	97141	South Jordan City D-IV & T-IV
Kimball, Darek O.	23529	Water Specialist D-IV
Kimball, Richard J.	00007	Metropolitan Water District of Salt
Lake & Sandy T-IV		
King, Jeffrey L. 85014	Jordan Valley Water Conservancy District	T-IV
King, Karl R. 88139	Clinton City	D-III
Kirkland, Dent R.	23110	Delta City D-II
Klotz, Kirk N. 95525	St George City	D-IV
Kmetzsch, Greg R.	23051	Alpine City D-I
Knop, Michael E.	86677	Castle Valley Special Service District
T-IV		
Koch, Brian W.	99145	North Logan City D-IV
Kofford, Danny T.	00638	Price River Water Improvement Dis-
trict		
T-IV		
Korpi, Colin E. 23052	Angell Springs Special Service District	D-I
Kresser, Robert C.	86588	Pleasant Grove City D-III
Kubacki, Steve A.	94529	Water Specialistl T-IV
Lambert, Brody C.	06049	Spanish Fork City D-II
Langan, Patrick F.	23530	Tooele City D-I
Larkin, Darrin W.	20110	Water Specialist D-S
Larsen, E. Fred 84053	Metropolitan Water District of Salt Lake & Sandy	D-IV
Larsen, Trevor J.	20530	Sandy City D-IV
Larson, Mark L.	87758	Kearns Improvement District D-III
Lawrence, Brad J.	23113	Mapleton City D-II
Lawrence, Daniel J.	87822	Hill Air Force Base D-IV
Leavitt, Mason R.	25504	St George City T-IV
LeFevre, Jed K. 94143	Deseret Generation & Transmission	T-IV
Leslie, Darrell 22019	Lakeside Range	T-I
Lewis, Robert A.	23116	South Salt Lake City D-IV
Liston, Dal Robert	26026	Winchester Hills Water Company
D-I		
Lofley, Blane Deloss	89120	Castle Valley Special Service District
D-IV		
Lofley, Keith 89121	Castle Valley Special Service District	T-III
Long, Samuel A.	06018	La Sal School D-I
Lowe, Norm G.	06053	Nordic Mountain Water Inc D-I
Lunstad, Nathan T.	26118	Highland City D-IV & T-IV
Lutz, Robert L. 21539	Kearns Improvement District	D-IV
Lyman, Jeff M. 23167	Oak City	D-I

Lynn, Michael W.	26027	Nephi City	D-III
Magee, Terrance R.	20037	Bryce Woodland Estates	D-S
Magleby, Devin 89517	Monroe City	D-III	
Maras, Dennis K.	20039	Ashley National Forest	D-S
Marchese, Michael A.	89123	Clearfield City	D-IV
Mark, Greg N. 23120	Jordan Valley Water Conservancy District	D-IV	
Marler, Clair A.	94533	Utah State University	D-IV
Martin, Zac G. 26028	Springdale Town	T-II	
Martindale, Dustin K.	23121	Granger-Hunter Improvement District	
	D-IV		
Mascaro, Casey M.	06055	Jordan Valley Water Conservancy Dis-	
trict	D-IV		
Mashburn, Jay H.	20533	Water Specialist	T-III
Mastin, Troy R. 87824	Price River Water Improvement District	D-II	
Matheson, Jeffery E.	99539	Metropolitan Water District of Salt	
Lake & Sandy	D-IV		
Mathis, Rex B. 99148	Central Utah Water Conservancy District	T-IV	
Maxfield, Brien T.	06056	Draper City	D-IV
McDougal, Daniel R.	25542	Taylorville-Bennion Improvement	
District	D-IV		
McFarland, Michael J.	94537	Water Specialist	T-IV
McFarlane, Kurt D.	84086	Price River Water Improvement Dis-	
trict	D-IV		
McIntosh, Stephen G.	97148	Salt Lake County Service Area #3	
	D-IV & T-IV		
McKay, Thomas	84065	Tooele City	D-IV
McLachlan, Steve	23168	Hexcel Inc	D-I
McLaughlin, John M.	26120	Hill Air Force Base	D-II
Meier, Brice A. 23169	Metropolitan Water District of Salt Lake & Sandy	D-IV & T-IV	
Mellor, Brandon B.	20534	Water Specialist	D-I
Memmott, Thomas C.	26030	Scipio Town	D-S
Micheli, Donald A.	20041	Capitol Reel National Park	D-S
Miller, David W.	23532	Utah State University	D-IV
Mitchell, Douglas A.	26121	Salt Lake City	D-II
Mitchell, Robbie D.	95131	Cedar City	D-IV
Mitchell, Robert L.	26122	Kennecott Utah Copper	T-IV
Mitchell, Ronald	99152	Central Utah Water Conservancy Dis-	
trict	T-IV		
Mitton, Kurt K. 23124	Water Specialist	D-IV	
Moffitt, Jarod S.	97550	Jordan Valley Water Conservancy Dis-	
trict	D-IV		
Mondragon, Raymond C.	20536	Magna Water District	D-IV
Montague, Bryan K.	23533	Metropolitan Water District of Salt	
Lake & Sandy	D-I		
Montgomery, Marc A.	23125	Weber Basin Water Conservancy Dis-	
trict	T-IV		
Moon, Lee H. 97149	East Duchesne Culinary Water ID	D-II	
Moon, Steven M.	20043	Spring Lake Water	D-S
Moore, Douglas V.	84352	Cluff Ward Pipeline	D-III
Morgan, Danny J.	87622	West Jordan City	D-IV & T-IV
Morzelewski, David F.	88111	Bountiful City	D-III
Moss, David H. 87780	Bountiful City	T-IV	
Mott, Merlin L. 91515	Dinosaur National Monument	D-I	
Motte, Gary R. 94540	Wellington City	D-II	

Moulton, Jeffery W. District D-IV	00708	Jordan Valley Water Conservancy Dis-
Mower, Ben L. 20537	Ballard Water Improvement District	D-II
Mumme, John C.	26125	Hill Air Force Base D-II
Munsterman, David R.	20538	Santa Clara City D-II
Murn, Richard A. D-S	23056	Zion View Mutual Water Company
Neilson, Lad R. 06057	Nucor Steel	D-I & T-I
Neilson, Myron Ben	06021	Hatch Town D-II
Nelson, Charlotte E.	23057	Beaver Dam Water Company D-S
Nelson, Clayton J.	22142	River Heights City T-II
Nield, Naylene M. D-I	23171	Meadows Ranches Homeowners Assn
Nielsen, Casey R.	86353	Metropolitan Water District of Salt
Lake & Sandy D-IV & T-IV		
Nielsen, Mark R.	23535	Logan City D-IV
Nielson, Paul D.	96523	Brighton Girls Camp T-III
Oman, Kirk G. 93533	Jordan Valley Water Conservancy District	T-IV
Ott, Paul D. 99161	Salt Lake City	D-IV
Ovard, Andrew D. D-IV	20540	Granger-Hunter Improvement District
Owens, David V.	86624	Panguitch City D-III
Owens, Marie E. District T-IV	97152	Jordan Valley Water Conservancy Dis-
Owens, Robert S.	22025	Midway City D-II
Page, Allan J. 97153	Hill Air Force Base	D-IV
Palmer, Jay J. 94154	South Ogden City	D-IV
Palmer, Robert D.	24067	Sandy City T-IV
Paterakis, Randy L.	94157	Clearfield City D-IV
Paulson, Trevor	22531	Kennecott Utah Copper T-IV
Paxman, Bert E.	26126	Canyonlands By Night T-I
Paxman, Preston L.	26127	Canyonlands By Night T-I
Paxman, Rory C.	26128	Canyonlands By Night T-I
Payne, Pat K. 94158	Richfield City	D-III
Payne, Ronald D.	23537	Metropolitan Water District of Salt
Lake & Sandy T-IV		
Peay, David L. 97555	Spanish Fork City	D-IV
Pedersen, Rex M. Jr.	99162	Water Specialist T-IV
Perkins, Brett D.	20127	Layton City D-IV
Persico, Mark C.	96143	Hill Air Force Base T-IV
Peters, Jonathan H. Lake & Sandy D-IV	91129	Metropolitan Water District of Salt
Peterson, Don C.	86642	Lindon City D-IV
Peterson, Leon A.	06061	Salt Lake City T-IV
Peterson, Ryan T.	26033	Conoco Phillips D-S
Peterson, Todd M. District D-IV	23538	Jordan Valley Water Conservancy Dis-
Peterson, Tony D.	96525	Magna Water Company T-II & D-IV
Phan, Te V. 88525	Jordan Valley Water Conservancy District	T-IV
Pierce, Paul S. 23539	South Salt Lake City	D-IV
Pierpont, Paul S. District T-IV	21548	Central Utah Water Conservancy Dis-
Poe, Steve J. 98529	Ogden City	D-IV
Pollock, James G.	25028	Washington City T-IV

Pollock, Todd N. district T-IV	94560	Weber Basin Water Conservancy Dis-
Poppleton, Jeremie B.	22533	Logan City D-IV
Porter, Blaine P.	23173	Escalante City D-I
Porter, Jason M.	06062	Hurricane City D-IV
Preece, Abby Jo district T-IV	99553	Weber Basin Water Conservancy Dis-
Priest, Bart L. 95141	Hill Air Force Base	D-IV
Pulham, Alan K. tional Forest D-I	97157	USDA Forest Service / Ashley Na-
Pulsipher, Burton H.	23062	Wellington City D-II
Pyne, Roland Kay	23063	US Magnesium D-I
Quinn, Raymond L.	23540	North Emery Water SSD D-II
Ramsay, Daniel R.	06063	Boundary Springs D-I
Randall, Curtis E.	06025	Kaysville City D-IV
Randall, Randy K.	84287	Centerville City D-IV & T-IV
Raymond, Stephen C.	26130	Logan City D-IV
Reese, Michael 26131	Metropolitan Water District of Salt Lake & Sandy	D-IV & T-IV
Richardson, D. Brent district D-II & T-IV	99556	Price River Water Improvement Dis-
Richardson, Henry A.	25030	Ivins City D-IV
Richins, Kim R. 21153	Mountain Regional Water SSD	T-IV
Robinson, Shawn D. District D-IV	25550	Taylorville-Bennion Improvement
Rochell, Bradley L.	20543	Ogden City D-IV
Rochell, Paul R. 99182	West Point City	D-IV
Rogers, Alan A.	97559	Cove Fort LDS Historic Site D-I
Rose, Auggie P. 90130	Weber Basin Water Conservancy District	D-IV & T-IV
Roundy, Michael P.	97160	Logan City D-IV
Rueckert, Gale A.	86651	South Davis Water District D-IV
Runyan, Duane J. D-S	23174	East Grouse Creek Water Pipeline
Rushton, Dean A.	20015	Kearns Improvement District D-II
Sabey, James Edd	97180	Center Creek Water D-II
Sager, Ronald L.	92147	Washington Terrace City D-III
Sagers, Hal L. 94547	Water Specialist	T-II
Sainsbury, Aaron M.	20132	South Jordan City D-IV
Sawyer, Verl S. 20133	Orderville Town	D-I
Schade, Richard J. district D-IV	92518	Price River Water Improvement Dis-
Schmalz, Clay C. district T-IV	91134	Weber Basin Water Conservancy Dis-
Schnars, Jeffrey L. D-I	26134	South Duchesne Culinary Water
Schnoor, Steve J.	22539	Kennecott Utah Copper T-IV
Schofield, Daniel R. D-III	84756	Gorgoza Mutual Water Company
Schuler, Daniel Lynn	97164	Clearfield City D-III
Scott, Mark P. 90131	Orem City	D-IV
Seamons, Brent N.	96530	Mapleton City D-IV
Searle, JaiDe 26135	Mountain Regional Water SSD	D-II
Serrano, Kevin R.	20135	Salina City D-II
Shaw, Cary D. 00723	Jordan Valley Water Conservancy District	T-IV
Shaw, Michael D.	89134	Washington City D-IV & T-II

Shelley, Travis 23065	St George City	D-I
Simkins, Arlan M.	89519	Enterprise City D-II
Simons, Bart 84061	Provo City	T-IV
Simonsen, Archie M.	97562	Manti City D-II
Singleton, Gregory A.	21556	Kearns Improvement District D-IV
Smith, Kyle D. 23132	Casper's Ice Cream	D-S
Smith, Lee E. 26136	Weber Basin Water Conservancy District	T-IV
Smith, Terry K.84428	Water Specialist	D-IV & T-IV
Snowball, David M.	91140	Fruit Heights City D-IV
Snyder, Kim E. 20138	Jordanelle SSD / Twin Creek SSD	D-III
Snyder, Richard T.	94167	Provo City D-IV
Sorensen, Rodney S.	94168	Sandy City D-IV
Spackman, Tony K.	26037	Canyon Meadows Mutual Water
T-II		
Spaulding, Greg D.	25557	Water Specialist D-I
Spens, Paul J. 23134	Weber Basin Water Conservancy District	T-IV
St. Jeor, Wallace E.	89136	Woods Cross City D-IV
Stamatakis, Tracy	26137	Kennecott Utah Copper T-IV
Stanworth, Travis L.	23068	Delta City D-II
Stapley, Rob D.26038	Providence City	D-III
Starr, Brian S. 26039	Plymouth Town	D-S
Steadman, Chad P.	24535	Jordan Valley Water Conservancy Dis-
trict T-IV		
Steele, Robert James	06002	South Weber City D-II
Stevens, Todd A.	88532	Ogden City D-IV
Stockdale, Richard A.	20551	Stockton Town T-I
Stocking, Steven B.	86599	Metropolitan Water District of Salt
Lake & Sandy D-IV & T-IV		
Stokes, Ray L. 91519	Jordan Valley Water Conservancy District	T-IV
Stoyanoff, Jack J.	86645	North Emery Water SSD T-I
Strickland, Fred A.	22547	Metropolitan Water District of Salt
Lake & Sandy D-IV		
Sulser, Lynn Jay96152	Jordanelle Special Service District	T-IV
Sulser, Kirk L. 99173	Timberlakes Water Special Service District	T-IV
Summers, Thom S.	94552	Eden Water Works D-I
Swenson, Christopher D.	23070	Arches National Park D-I
Swenson, Lloyd A.	20140	Moab City D-II
Tait, Carson D.	93134	St George City D-IV
Talbot, Nathan W.	26138	Jordan Valley Water Conservancy Dis-
trict D-IV		
Tangren, Clifton G.	94172	Provo City D-II
Tanner, Stuart B.	22034	Utah County Parks D-II
Taylor, Everett W.	23135	Skyline Mountain Special Service Dis-
trict D-II		
Taylor, George C.	92164	Ogden City D-IV
Taylor, Gregory V.	94555	Water Specialist D-II
Taylor, Jason W.	20141	South Salt Lake City D-IV
Taylor, Kirk D.06029	Mendon City	D-II
Terrell, Linson C.	97168	Kearns Improvement District T-IV
Thacker, Roy D.	97564	Sandy City D-IV
The Dell, Devin R.	26139	Jordan Valley Water Conservancy Dis-
trict D-IV		
Theurer, Brady G.	20142	Brigham City D-III & T-IV
Thomas, Joshua C.	23546	Water Specialist T-IV

Thomas, Luke 06067	Francis Town	D-II
Thompson, Christopher L.	91521	Glen Canyon NRA / Bullfrog D-II
Thompson, Cody W.	23071	Kaysville City D-IV
Thompson, Guy W.	20552	Bryce Canyon National Park D-I
Thompson, Jason N.	06068	Tremonton City D-III
Thorpe, John D.	94557	Dammeron Valley Water Works
	D-II	
Tobin, William J.	23072	Deseret Land & Livestock D-S
Togstad, Gary 26001	Water Specialist	D-I
Tolbert, Mark A.	26140	Herriman City D-IV
Toomer, Casey Lynn	25079	Castle Valley Special Service District
	D-III	
Topham, Kirk 84309	Zion National Park	D-II
Tripp, Jack W. 20553	Meadows Ranches Homeowners Assn	D-I
Troseth, Thad M.	26040	Elsinore Town D-I
Trowbridge, Marla F.	26041	Trenton Town D-I
Trujillo, Jack D.95151	West Jordan City	D-IV
Tubbs, Kevin H.	23136	Roy City D-IV
Turpin, David L.	00550	Pine Creek Property Owner D-III
Turpin, Eun M. 23137	Weber Basin Water Conservancy District	T-IV
Vail, Gary L. 24078	Ogden City	T-I
Vogrinc, Cory J.	21561	Price City T-IV
Wadsworth, Dallan J.	98161	Hurricane City D-IV
Wahlstrom, Lee Ronald	23138	Roy City D-IV
Waite, Michael D.	97566	Syracuse City D-III
Walker, David O.	23139	Centerville City D-IV
Walker, Rex J. 06069	Timpanogos Cave National Monument	D-I
Walton, Randal M.	22554	Central Utah Water Conservancy Dis-
trict	D-IV	
Wanlass, Paul J.	87743	Jordan Valley Water Conservancy Dis-
trict	D-IV	
Wanlass, Rodney K.	23073	Monroe City D-II
Waters, Floyd Jr.	23140	Kennecott Utah Copper D-I
Waters, John A.	99567	Spanish Fork City D-IV
Watson, William	00423	Salt Lake City D-IV
Webb, James W.	26043	Circle Four Farms D-I
Webb, Steven L.	91145	Taylorville-Bennion Improvement
District	D-IV	
Webster, Wade C.	23141	Jordanelle Special Service District
	D-IV & T-IV	
Wells, Cory 92160	Murray City	T-IV
West, Craig W.	24541	Ogden City D-IV
Westlund, Ronald A.	88135	Intermountain Power Service Corp
	T-II	
Weyburn, Jeff A.	94559	Weber Basin Water Conservancy Dis-
trict	T-IV	
Wheeler, Brad M.	20558	Clearfield City D-III
Wheeler, Claudia	94103	Metropolitan Water District of Salt
Lake & Sandy	T-IV	
White, Carrie A.	97175	South Jordan City D-I
White, Richard L.	06071	Hidden Creek Water Company D-S
Whiting, Todd C.	91524	Springville City D-IV
Whitney, Mark W.	94001	Water Specialist T-IV
Wiley, Steven R.	22164	Salt Lake City D-IV

Wilhelm, Robert K.	88537	North Logan City	D-III
Wilkinson, Dusty	20059	Annabella Town	D-S
Williams, Eric L.	25083	Park City	D-IV
Williams, Leo E.	97004	Mountain Regional Water SSD	D-IV
& T-IV			
Williams, Ryan S.	20560	Mountain Regional Water SSD	T-IV
Williford, Joe F.	90140	Central Utah Water Conservancy Dis-	
trict			
			T-IV
Wims, Ernest H.	94108	Hill Air Force Base	T-II
Winters, Mark R.	00669	Jordan Valley Water Conservancy Dis-	
trict			
			D-IV
Wiscombe, Richard L.	97568	Richville Pipeline Company	D-II
Woerner, Steven C.	26025	Elwood Town	D-I
Wood, Larry D.	98543	Energy West Mining	D-II
Woodbury, Daniel K.	23552	Sandy City	D-IV
Woody, Jeffrey E.	97569	Riverdale City	D-IV
Woolsey, Blake K.	98166	Jordan Valley Water Conservancy Dis-	
trict			
			D-IV
Worthington, Larry D.	20060	Fruitland Special Service District	
			D-S
Worwood, Jason D.	93138	Levan Town	D-I
Wright, Clay D.	00621	Price River Water Improvement Dis-	
trict			
			D-IV
Wright, John H.	23075	Oak City	D-I
Wright, Kurt A.	92520	Water Specialist	T-IV
Wyan, John E. 21569	Clinton City	D-IV	
Yates, Gerard 87841	Central Utah Water Conservancy District	D-IV	
Young, William M.	23553	Logan City	D-IV

We've Moved

New DEQ Address

**Utah Department of Environmental Quality
195 North 1950 West, Salt Lake City**

Also Includes:

- Division of Air Quality
- Division of Environmental Response and Remediation
- Division of Radiation Control
- Division of Solid and Hazardous Waste
- Division of Drinking Water
- Division of Water Quality



New Mailing Addresses

Division of Air Quality

P.O. Box 144820
Salt Lake City, Utah 84114-4820
Phone: 801-536-4000
Fax: 801-536-4099

Division of Solid and Hazardous Waste

P.O. Box 144880
Salt Lake City, Utah 84114-4880
Phone: 801-536-0200
Fax: 801-536-0222

Division of Environmental Response and Remediation

P.O. Box 144840
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Fax: 801-359-8853

Division of Drinking Water

P.O. Box 144830
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Phone: 801-536-4200
Fax: 801-536-4200

Division of Radiation Control

P.O. Box 144850
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Phone: 801-536-4250
Fax: 801-533-4097

Division of Water Quality

P.O. Box 144870
Salt Lake City, Utah 84114-4870
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Fax: 801-536-4301

Department of Environmental Quality

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Phone: 801-536-4400