

This issue of "The Clarifier" is published by the Kansas Rural Water Association and is provided to water and wastewater utilities, associate members, agencies and other friends. Have a comment? Send it to KRWA at P.O. Box 226, Seneca, KS 66538; ph. 785/336-3760; e-mail: krwa@krwa.net. This newsletter is in addition to KRWA's regular news magazine, *The Kansas Lifeline*.



KRWA Conducting Survey of Water System Priorities and Needs

The Kansas Rural Water Association has an ongoing survey to determine what water system personnel see as needs and priorities. The survey was also submitted to the Kansas Department of Health and Environment for input. Additional surveys will be submitted to other state and federal agencies.

The concept for the survey stemmed from the need to provide comments to a new training and technical assistance contract that is funded through EPA and administered by the National Rural Water Association.

KRWA submitted the survey to 966 water system personnel on Saturday and Sunday, July 18 and 19. Personnel were targeted by group type: 1) Rural Water Operators/Managers and Office Staff; 2) Municipal Operators; 3) City Managers/Clerks; and, 4) RWD and City Council Governing Body Members.

Responses as of July 27th are shown in the tables at right. KRWA appreciates all those who have responded. Anyone not receiving the survey and wishing to do so is encouraged to email krwa@krwa.net with a request to have their email address added to the survey.

Q1. Please rank the following priority areas as you see them impacting your water system with 1 (one) being the LOWEST and 5 being the HIGHEST priority.

	Lack of adequate revenue and/or access to funding.	Retirement of operator(s) and/or the inability to recruit replacement staff members.	Managers or operators who lack the requisite financial, technical or managerial skills.	Lack of planning for infrastructure upgrade and/or the ability to respond to and recover from natural disasters.	Lack of understanding of existing or new regulatory requirements and treatment technologies.	Did not answer	Total
RWD Boards, City Council Members	3.18	3.03	2.63	3.47	2.97	0	48
Municipal Operators	3.55	3.09	2.62	3.36	2.88	1	66
City Administrators, City Clerks	3.60	2.01	2.35	3.35	2.76	0	64
RWD Operators, Offices	2.67	3.16	2.51	2.75	3.09	1	81

Q2. Please prioritize the areas listed below in terms of training or assistance need, with 0 (zero) being NOT NEEDED and 5 being HIGHLY NEEDED.

	Revised Total Coliform Rule	Stage 2 Disinfection Byproducts Rule	Ground Water Rule	Board, councils and SDWA requirements	Diagnose and troubleshoot system, operational and compliance related issues.	Microbial, nitrate/nitrite, arsenic, radionuclides and disinfection byproducts.	Source water protection planning	Drought, flooding and climate-related challenges	Operator certification and continuing education	Did not answer	Total
RWD Boards, City Councils	1.97	2.19	2.41	2.73	2.73	2.27	2.81	2.54	3.27	1	48
Municipal Operators	2.71	2.57	2.28	2.31	3.17	2.82	2.46	2.33	4.05	2	66
City Administrators, City Clerks	2.39	2.37	2.13	2.33	3.15	2.54	2.41	2.15	3.72	0	64
RWD Operators, Offices	2.84	2.96	2.09	2.69	2.96	2.56	2.12	2.15	3.83	3	81

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- Survey: Water System Priorities, Needs
- KCC Oil/Gas Remediation Program
- Public Water Use in Western Kansas
- Maintaining Chlorine Residuals
- Where Is Our Waterline?

KCC Releases Status Report on Abandoned Oil and Gas Well Remediation Program

The Kansas Corporation Commission (KCC) has released its annual report to the legislature to explain the use of funding in the Abandoned Oil and Gas Well Remediation Site Fund, as required by K.S.A. 55-194. In recent years, most of the funding for this program has been due to transfers from the State Water Plan. K.S.A. 55-193 was modified in 2013, suspending transfers from the state general fund in the fiscal years of 2013, 2014 and 2015, and stating that State Water Plan Fund would contribute no more than \$400,000 in those years. Before 2013, the

state general fund, the Water Plan Fund and the KCC's Conservation Fee Fund transferred \$100,000 each to the Abandoned Oil Well Fund. Because the results of the work funded by the Abandoned Oil Well Fund are important to the protection of public water system's source water, and money collected by public water systems is going into this fund, an understanding of this program is important.

Source Water Protection Planning is a tool that was developed in response to many

Continued on Page 3



Public Water Supply Water Use in Western Kansas

From Where is Water Reduction to Come?

There continues to be much discussion among water system representatives concerning the Governor's Vision plan for water supply in Kansas. One topic has been the reduction in water use by western Kansas citizens.

According to some, residential water usage is too high and must be reduced. Acting on such a belief will affect Kansas public water supplies and the citizens they serve. If reduction in public water system water use is to occur, it will occur by citizens reducing their residential water use. Such a reduction will adversely affect public water supplies economically and the rates the citizens pay. But will water reduction really accomplish anything beneficial?

KRWA Consultant Pat McCool reviewed water use data for the 39 western Kansas counties. These counties include the counties through which US Highway 183 is located and all the counties west of that line. These counties include a large percentage of Kansas groundwater irrigation and include 136 public water systems serving approximately 200,000 citizens.

As can be seen in the nearby table, the amount of residential water use by the citizens of public water systems in these 39 counties is very small when compared to the amount of water used for irrigation. In fact, the amount of irrigation in each of 22 counties is greater than all the residential water use by the citizens of these public water systems.

The public water system data are estimates of the citizens' residential water use. The estimates also include all commercial use, some of the water metered free, and some of the unaccounted water sometimes known as water "loss". Thus, the actual public water system residential water use is, in reality, somewhat lower than the estimates in the table.

Selected 2012 Water Use Data For 39 Western Kansas Counties			
	AFY	MGY	MGD*
Total Kansas Irrigation	4,007,680	1,305,810	3,578
Total Irrigation Use in 39 Counties	3,293,060	1,072,968	2,904
Finney County Only	339,419	110,592	303
All 136 PWS Residential Use	43,202	14,076	39
4 Largest Cities' Residential Use	15,511	5,054	14
* Irrigated based on MGY divided by 365			
AFY = acre feet per year			
MGY = million gallons per year			
MGD = million gallons per day			
If all the water used by the public water systems in 38 western Kansas counties were pumped evenly from only Ford County aquifer(s), the annual decline in static water level without any water recharge would be less than 0.75 inches.			

When citizens reduce their residential water use the revenue that the public water system receives is also reduced. This results in increased water rates to make up for the revenue loss caused by the water use reduction.

If reduction in residential water use is encouraged, mandated, or required, higher water rates will result. If so, then this is a very serious matter that has economic effects on Kansas citizens. Thus, any state action on residential water use should be made only by the citizens' elected representatives in the Kansas legislature.

As can be seen by the wide differences in public water system residential water use and irrigation water use in western Kansas, any effort to "save", "conserve", or reduce water usage should not be placed on the citizens' residential water use as the "gains" in reduction would be miniscule compared to the overall water use.

The Mayberry Deputy -- 2016 KRWA Conference Keynoter

KRWA is pleased to announce that the keynote address at the 2016 Conference will be by *The Mayberry Deputy/David Browning*.

For 45 years, David Browning has been a popular improvisational actor, speaker and host, using such characters as The Mayberry Deputy, Abe Lincoln and Scrooge to provide non-offensive, thoughtful, memorable performances. While honoring law enforcement, Browning's Mayberry Deputy incorporates costume, gestures, facial expressions and audience



participation to provide an atmosphere of good clean fun. With more than 5,000 performances in 41 states and Canada to more than five million people, Browning has been privileged to work with many stage, screen, music and sports celebrities. He was honored to open for Don Knotts, actor and original "Barney Fife" who said of Browning, "The Mayberry

Deputy/David Browning is a BRIDGE between the Andy Griffith Show and today. Browning is a newly published author of "We Have Extra Security Tonight" with Tom

Perry / Laurel Hill Publishing; www.freestateofpatrick.com.

Browning's experience consists of free-lance voice and acting, theatre directing, management and tourism development. Browning has been privileged to work with many other original stars of the "Andy Griffith Show" including George Lindsay "Goober", Howard Morris "Earnest T. Bass", Maggie Peterson "Charlene Darlin" and James Best, "Jim Lindsey" and "Rosco P. Coltrane" of Dukes of Hazzard.

The Mayberry Deputy will be attending many events during the KRWA conference. Mark your calendars now – March 29-31, 2016, Century II Convention Center, Wichita.

This pasture east of Wilson, Kansas, in northwest Ellsworth County, shows the effect of sloppy oil field brine disposal practices. Here salty water was allowed to escape and pool on the land. Visible at the edge of the scar are white patches of salt.



public water systems violating maximum contaminant levels of contaminants. Many of these contaminants entered the sources of drinking water by intentional application to fields or by accidental spills, willful negligence or intentional dumping. With a proper understanding of the source of a public water system's water, activities can be put into place to minimize the chances of a sudden or more subtle contamination event, usually at lower costs (if any at all) than the costs to build and operate a water treatment plant.

One kind of contaminant that is recognized as having a strong potential to impact water quality in Kansas is chloride from petroleum exploration and production. In some cases, historical oilfield activities have been identified as having a continuing effect on the quality of our environment. The Abandoned Oil and Gas Well Remediation Site Fund is to be used to investigate and remediate abandoned wells and polluted sites created by activities occurring prior to 1996. In the report, eight sites are reported to be affecting public water systems, and the narratives of six of these sites mention specific water systems. A brief explanation of the issues for these systems follows.

City of Hays: The Ruder Creek Contamination Site is impacted by multiple spills, leaks, former surface disposal ponds and shallow injection wells. Ruder Creek flows to the Smoky Hill River where the city of Hays Smoky Hill River Wellfield is located near Schoenchen. It is planned that one particular historical source of chloride will be investigated and a determination of its current contribution will be made. The city of Hays has a Source Water Protection Plan.

City of Jennings: Two public water supply wells (out of a total of three) have been impacted due to presumably poor oil field practices. Impacts have been observed since the 1950's. In 2012, chloride in the impacted wells was as low as 100 parts per million (ppm). In 2014 though, chloride as high as 950 ppm was observed after 60 minutes of pumping to waste. The KCC reports that a new operator has the lease and a cooperative relationship will be established to implement best practices. The city of Jennings now has a Source Water Protection Plan.

City of Little River: A plume of brine from an unknown source continues to impact the city of Little River. Well No. 7 continues to have chloride at a concentration of 3,000 ppm. Depending on movement of the plume and its direction, additional monitoring wells may be drilled and Well No. 13 could be removed from production as it currently produces water at 600 ppm before being blended with water from other wells. The city of Little River now has a Source Water Protection Plan.

Source water protection planning should include a recognition of the impact oil field activity can have on public water systems.

Rural Water District No. 1, Russell County: A water well drilled into the alluvium and Dakota Formation yields water with elevated chloride (650 to 750 ppm). No definitive source can be determined, although the Dakota was in the early years of petroleum production a zone of brine disposal. The Kansas Geological Survey has determined that 71 to 89 percent of the chloride in this area is naturally occurring (dissolution of salt in the Wellington Formation). It is planned that monitoring will continue.

City of Galva: Two contamination sites are located in the Galva area. One area had multiple brine disposal pits and a refinery. Galva Well No. 3 produced water with chloride at 1,200 ppm in 2008. In 2011, this same well produced water with chloride at 670 ppm. No sample was obtained in 2014. Phase III was started in August of 2014 to drill additional monitoring wells and a recovery well because the PWS wells are drilled over a presumed bedrock high, and brine-impacted water appears to be settling in the lower bedrock areas. The PWS wells remain usable. In 2014, more than 18 million gallons of brine impacted groundwater were recovered. The Running Turkey Creek Site is centered approximately one mile south of the old refinery, directly east of Galva. While not directly affecting the city of Galva source water, one monitoring well has chloride levels of 22,000 ppm. Left with no remediation, it could potentially impact a future water supply source.

Including the sites above, there are 52 sites in the KCC report. There were 109 original sites when the program was started. Since that time, four sites have been merged with other sites, 76 have been resolved and 23 have been added. These include sites where soil is no longer productive, where domestic, irrigation

and stock wells have been impacted and where sinkholes and depressions have appeared. In theory, these sinkholes and depressions can have an impact on water distribution systems, potentially impacting more water systems than those already with contaminated sources. Many of these remediation sites also remove areas that may have been a future source of groundwater for water systems. A copy of the report is available at

http://kcc.state.ks.us/pi/2015_remediation_site_status_report.pdf

Source water protection planning should include a recognition of the impact oil field activity can have on public water systems. While the impacts of early oil field practices continue to affect water systems, better and safer methods are now available. We need to make sure these methods are prioritized when oil wells are drilled and brine is disposed in source water protection areas. A source water protection plan is often a good first step to prevent chloride impacts on public water systems.

Watch for the legislature to review and change K.S.A. 55-193 in the next session. The previous and current funding mechanisms end on July 1, 2016. Funding to understand and control these sites will need funding from some source. While it might be right or wrong to have the State Water Plan fund the majority of this program, to kill the program by not renewing some kind of funding formula will be very unfortunate.

KRWA Wastewater System Training Attended by Hundreds

Training is a major aspect of the services offered by the Kansas Rural Water Association. Training is the mission of KRWA. Your Association provides water, wastewater, and distribution

system operator training. The operator training not only helps operators enter and advance in the profession, but also helps to address the operator workforce shortage in Kansas. KRWA further

compliments operator training with various administrative sessions such as Quickbooks, Excel, other office programs and many other topics.

A significant segment of the KRWA's training program includes specific training for wastewater utilities. In 2015, KRWA has scheduled 13 wastewater training sessions. As an example, because lagoons are used extensively across the state for wastewater treatment, KRWA continues to provide a solid day of training on the operation and maintenance of lagoons.

As of July 23, KRWA has provided seven sessions in 2015: St. Marys, Manhattan, Hays, Horton, Pomona, Belle Plaine and Minneapolis. Those sessions were attended by 182 people representing 113 utilities. An additional six wastewater sessions will be held in 2015.



KRWA Consultant Jeff Lamfers begins his presentation on the "Six Common Causes for Poor Effluent Quality in Lagoons" during a wastewater system training session on June 16 at Minneapolis, Kan.

Chlorine Safety – O & M Training Highly Attended, Again!

When water or wastewater system training seminars are packed with information, are down to earth and interactive – and taught by an expert in the field, there is no other secret formula for drawing an attendance. Such it is with the Chlorine Safety - Operation and Maintenance of Chlorinators workshops that were presented by Ron Grage in June under KRWA sponsorship.

Sessions were held June 22 at Ottawa, June 23 at El Dorado, June 24 at Dodge City and on June 24 at Salina. A total of 116 people attended; they represented 59 different water systems.

The sessions in 2015 are the sixth round of sessions that have been instructed by Ron Grage. Ron is retired Senior Sales Specialist for Chlorinators Incorporated, manufacturer of REGAL gas chlorinators, Stuart, FL. Ron has been involved in the waterworks supply industry since 1969, and rebuilding all brands of chlorinators since 1971 with companies in Georgia, Virginia and Texas. Ron has conducted seminars for colleges, universities,

associations such as KRWA, AWWA, WEF and WPCOA, making presentations in every state in the U.S., and Canada, Korea, Taiwan, Saipan and Guam.

Reviewing files from 2007, 2009, 2012, 2013, 2014 and 2015, these chlorine safety seminars have been attended by 715 operators, representing 423 systems. In 2015, twelve of those attending were repeating their experience.

Ron Grage has provided one of the preconference sessions at the annual KRWA in recent years. The classroom is generally filled. KRWA is pleased to announce that Ron will be appearing on the 2016 conference program also. The date is March 30.



Ron Grage, left, is joined by Tim Schafer, Director of Water Production at McPherson Board of Public Utilities, for this photo at during a break at the training session held June 25 in Salina.

The following is a comment by Tim Schafer, Director of Water Production for the McPherson Board of Public Utilities, concerning the training.

"I attended the chlorine class in Salina Thursday. I just wanted to say that I really enjoyed it and it was very informative."

"Ron Grage is an outstanding instructor. He is very interesting and makes everything easy to understand and he is very knowledgeable."

"Thank you for making such a good class/ Instructor available to us."

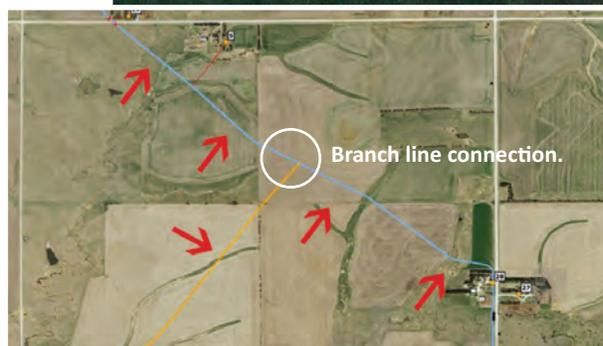
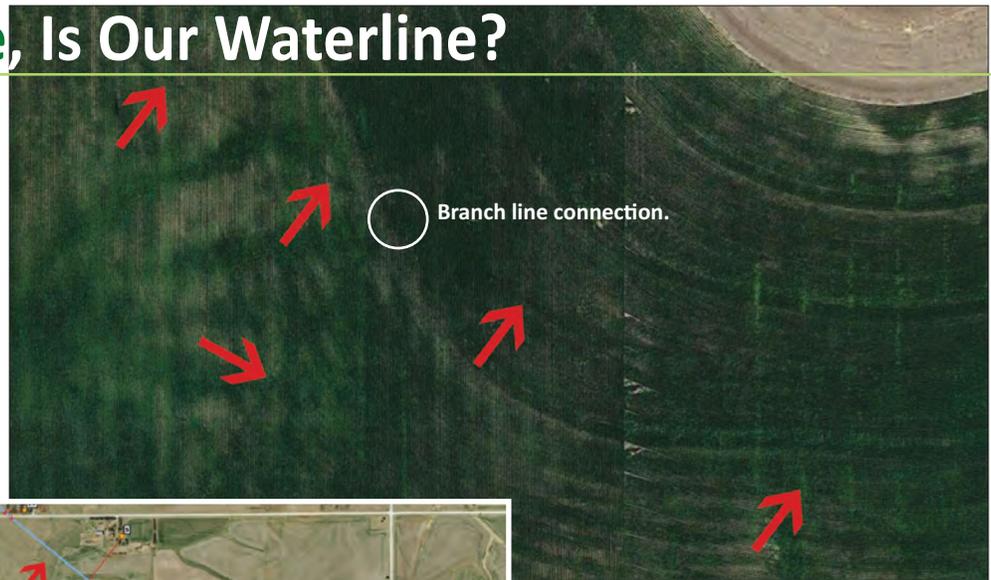
Where, O Where, Is Our Waterline?

If there's one shortcoming for most water and wastewater utilities, it's having accurate maps – and keeping those maps updated.

While KRWA Mapping Tech Mark Thomas was recently working on a GIS mapping project for a rural water district in northeast Kansas, he was stymied because the concerned project had many original pipelines that were installed diagonally across farm fields. In this case, KRWA staff spent time reviewing aerial maps/ One of the areas that was in question involved a pipeline that crossed through the center of a section of farmland. The water system personnel were also unsure of the location.

To everyone's surprise, changes in vegetation over the trenchline are visible on the 2014 Google Earth aerial.

All that, after more than 50 years since the installation took place!



The screenshot (above) of a 2014 aerial map still shows the changes in vegetation over a rural water pipeline that was installed in the early 1960's. The bottom graphic shows how KRWA mapped the pipeline. This RWD project has many pipelines that cut diagonally across country.

Using aerial photography is just one more example of the tools that KRWA uses to help rural water districts, and cities, gain improved mapping products.

KRWA also finds the Farm Service Agency (FSA) aerial maps helpful, especially those maps that were taken during periods of construction. FSA agency maps are available for 1991, 2002, 2003, 2006, 2008, 2010, 2012 and 2014. Many of those maps show rural water and other utility construction that is readily identifiable on the aerials.

Technical Assistance Provided by KRWA in 2014

Recently, KRWA was requested by agencies to summarize the various technical assistance provided by the Kansas Rural Water Association. This report is for work in calendar year 2014. KRWA works with nearly every public water and wastewater system annually – and many of them, numerous times.

- **Rural Water Circuit Rider Program**, funded by USDA Rural Development and administered by the National Rural Water Association: 162 systems
- **On-Site Technical Assistance**, contract funded thru the Clean Drinking Water Fee and administered by the Kansas Water Office: 411 systems (includes 126 water loss surveys)
- **Tech Assistance to Public Water Systems**, contract funded through a set-aside of the EPA grant to the state of Kansas for the public water supply program, administered by the Kansas Department of Health and Environment: 261 systems
- **Training and Technical Assistance**, contract funded by EPA and administered by the National Rural Water Association: 32 systems assisted; limited training sessions presented using approximately \$20,000 of this funding

- **Source Water Protection / Water Rights**, funded through USDA NCRS, administered by the National Rural Water Association: 37 systems
- **GIS Mapping**, internally funded by KRWA: 86 systems
- **Water Rate Reviews** conducted by KRWA: 21 reviews. (An important issue is that nine of the systems implemented the recommendations by KRWA)
- **Environmental Reviews and other assistance with financing**: 10 projects
- **Training Sessions**: Total of 105 days of training; KRWA invested more than \$230,000 of internal funds towards training in 2014
- **KAN STEP Program**: Water System Projects at Jamestown, Culver, Turon, Enterprise; community facilities at Pleasanton, Corning and Navarre, Troy and Osage County RWD 6
- **Wastewater Compliance**: funded through the Kansas Department of Health and Environment: 45 systems.
- **Wastewater Tech Assistance**: funded through USDA Rural Development and administered by the National Rural Water Association: 117 systems

Hot Issue July to October: Maintaining Combined Chlorine Residual

The Kansas Department of Health and Environment (KDHE) requires that a minimum chlorine residual of either 0.2 mg/l free chlorine or 1.0 mg/l combined chlorine be maintained in public water distribution systems. For those Kansas water supply systems that have combined chlorine, this requirement is difficult to meet during periods of hot weather and resulting warmer water temperatures.

Operators of systems should monitor residuals at the water storage tanks in order to determine when low residuals first occur and then monitor the mitigation efforts by tank operations.

Combined Chlorine and Nitrifying Bacteria

Combined chlorine is formed when free chlorine reacts with ammonia to form combined chlorine – that is, (free) chlorine combined with ammonia. Monochlorine is the most dominant and common form of combined chlorine.

Nitrifying bacteria grow and form biofilm on the wetted surfaces of storage tanks and waterlines. These bacteria do not show up in required bacteriological sampling. These bacteria need warm water temperatures and are a problem during the warmer water temperature months from July through October/November.

In the late spring and early summer, the water warms up considerably in storage tanks. The elevated water temperature is due to the warm air and sunlight on the tank even while the ground is still relatively colder. This temperature rise causes biofilm in the tanks and a resultant decrease in the combined chlorine residual in the tanks.

Measuring Chlorine Residual

Chlorine residual at storage tanks should be measured regularly and recorded in order to monitor the possible problem of chlorine loss and to determine corrective tank operations. If and when chlorine loss occurs in tanks, the low chlorine water then enters waterlines from the tank(s) and spreads throughout the system.

When monitoring the residuals at the tanks, the residual should be taken at or near the tank when the water in the tank is at its lowest level. Thus, this residual would probably best represent the lowest residual leaving the tank. If a residual were taken when the tank is filling or when nearly full, then that residual would likely be higher than the residual of water that had been in storage for a period of time.

If possible, a measure of the chlorine residual should also be taken of the overflow water. That residual would probably be the lowest residual as the water stratifies and results in a residual that is higher at the bottom to much lower at the top. Of course, this does not apply to a tank that fills at the top and draws off at the bottom.

It is important to monitor tanks from December through May to determine if any and how much chlorine loss occurs before the water temperature rises and nitrifying bacteria occur. This background data should be monitored and recorded on a two-week or monthly basis.

When water temperatures rise and residual loss increases, then residuals should be taken weekly or more often as needed to determine when the chlorine loss problem starts and its severity. Many systems monitor the residual at the tank with continuous chlorine residual analyzers connected to the utility's SCADA system. The continuous readings are sometimes shut down during colder months to save money and avoid freezing problems.

Storage Tank Operation

The reason for monitoring the residual at the tanks is that is where the chlorine loss first occurs and may be the sole source of the chlorine loss later in the waterlines. If the residual loss at the tank can be lessened or "controlled", then a system-wide residual loss can be delayed and possibly avoided.

Differences in tanks dictate differences in operations to avoid or lessen residual loss. Differences include storage capacity, the number of customers served, the daily water use, the location of the tank(s) in reference to water supply and service area, and inlet and outlet piping locations.



Maintaining adequate chlorine residuals becomes a problem when the summer sun warms water inside water storage tanks.

These differences determine among other things the daily number of fill-and-draw cycles. The lower the number of fill-and-draw cycles and the fewer gallons pumped into the tank daily, the likelihood of greater residual loss. Unfortunately in Kansas, many tanks are quite large and, thus, maintaining residual is a challenge.

Once the residual loss begins at the tanks, the operator has several choices how to address the matter. First, varying the water level more (by adjusting the pump turn-on level higher and/or the turn-off water level lower) might help. Such a change will add more "fresh", higher residual water to the tank when water is pumped to the tank. Unfortunately, this will result in fewer daily fillings of the tank also.

Also an operator might choose to not fill the tank to its capacity. In Kansas where some tanks are too large, this is a possible choice. For instance, if a tank were filled to only 35 to 65 percent of its capacity, the amount of fresh water daily as a percentage of the total water in the tank will be greater. This would decrease residual loss due to dilution with lower residual water in the tank. The method has been preformed with success in some systems.

The operator might also overflow the tank in order to get rid of the lowest residual water and to put more high residual water in the tank. Periodically overflowing, e.g., bi-weekly, might keep the problem of low residual water in the top of the tank and not let it spread to the distribution system. Of course, this does not apply to a tank that is designed to fill at the top and draw off at the bottom.

Also, the contents of the tank could be discharged, or “dumped”, onto the ground and then filled with high residual water. The tank piping would need to have the necessary discharge hydrant and valves to accomplish such. This “flushing” or “tank dumping” method is much better in getting rid of low residual water early than to wait and try flushing low residual water from the waterlines later, especially considering that the low residual water in the line likely originated from the storage tank.

“Tank dumping” or overflowing the tank will probably be more beneficial and take much less time than “flushing” waterlines once the problem spreads to the distribution system. Sometimes, flushing of waterlines just spreads the problem by discharging more low residual water from the tank to the waterlines.

Free Chlorine “Burnout”

When systems cannot maintain residual in the waterlines, then systems perform a free chlorine “burnout” – that is, the systems go back to a free chlorine residual for a period of approximately four weeks. The free chlorine kills the nitrifying bacteria. It is most important that the “burnout” include a complete “burnout” of the storage tanks.

One past summer a city had to do a second “burnout” a few weeks after it went back to combined chlorine after the first “burnout” because the elevated storage tank was not completely disinfected in the first “burnout” with free chlorine. It is most important that the storage tanks are “burnt out” with free chlorine, otherwise the chlorine loss will soon reoccur. During a “burnout” be sure to dump the tank and fill with free chlorine water or overflow the tank until a free chlorine residual is obtained

Here is a critical point: Be sure **NOT** to take disinfectant byproducts compliance samples for trihalomethanes (THMs) and haloacetic acids during “burnouts” as the tests will result in high levels of THMs and HAAs. The utility will then be in non-compliance with maximum contaminant levels (MCLs); public notification will be required. Systems that

Sometimes, flushing of waterlines just spreads the problem by discharging more low residual water from the tank to the waterlines.

purchase water must stay in contact with the system supplying the water in order to know when samples should not be taken.

In conclusion, it is important for operators using combined chlorine to monitor and record residuals at the storage tanks. Then operators can try different tank operations to hopefully maintain residuals at the tanks and not let the loss of residual in the tanks spread throughout the distribution system.

If anyone wishes to have assistance in determining how to operate storage tanks or what to do when chlorine loss is anticipated or realized, please contact KRWA. Many systems need to address this challenge each summer.



Twelve Basin Advisory Committees Transition to 14 Regional Advisory Committees

For almost 30 years, citizen advisors have been a vital voice for water resource issues in Kansas.

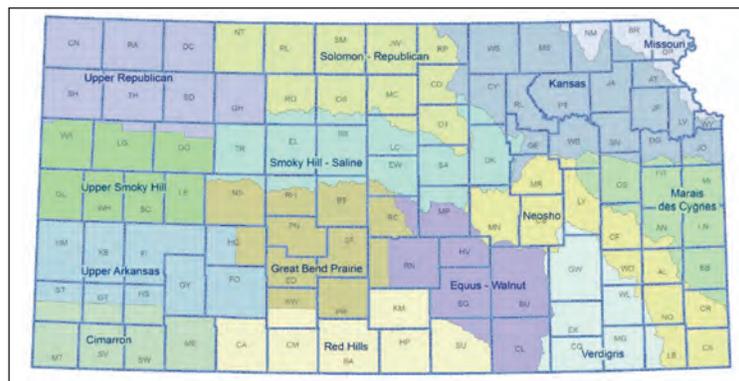
The Kansas Water Office recently closed the application process for the 14 new Regional Advisory Committee (RACs). These committees are replacing the Basin Advisory Committees that have been in existence since the last 1980s.

The RACs will play a key role in advising the Kansas Water Authority on the implementation of the Kansas Water Plan and soon to be

completed Vision for the Future of Water Supply in Kansas.

Prior to the Kansas Water Vision, water planning was used on the state's 12

drainage basins. The Kansas Water Office stated that to better reflect the diverse water resources of the state, there was a transition from 12 basins to 14 regions. The committee selection process will ensure all of the water users and interests within the region are represented. KRWA promoted the opportunity for people to apply for membership on the committees.



The 14 newly-organized Basin Advisory Areas.



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ABOUT ONLINE RESOURCES TECHNICAL ASSISTANCE TRAINING MEMBERSHIP



View by Course Topic

- Administrative / Management
- Board / Council
- Membership
- Cross Connect / Backflow Prevention
- Drinking Water Regulations
- Electrical
- Safety
- Water System Operations
- Wastewater Utility Operations



All Sessions

Dates	Course	Location	Registration Fee	Register
August 13, 2015	Water System Operations, Maintenance & Repairs	Wenden Memorial Hall	No Charge	Register
August 18, 2015	Basic Wastewater Treatment (Chaney)	Chaney	No Charge	Register
August 19, 2015	Emergency Response Planning, Tabletop Exercises (Graham)	Graham	\$90.00	Register
August 20, 2015	Basic Wastewater Treatment - Larned	Larned (J.A. Hill Building)	No Charge	Register
August 25, 2015	Emergency Response Planning, Tabletop Exercises (Graham)	Graham	\$90.00	Register
August 26, 2015	Emergency Response Planning, Tabletop Exercises (Russell)	Russell	\$90.00	Register
August 27, 2015	Emergency Response Planning, Tabletop Exercises (Manhattan)	Manhattan	\$90.00	Register
September 09, 2015	Beginning Quickbooks (Topeka)	Washburn Tech, Topeka	\$50.00	Register
September 10, 2015	Advanced Quickbooks (Topeka)	Washburn Tech, Topeka	\$50.00	Register

Always check www.krwa.net for training opportunities in your area!