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Meeting the Challenge of Having “A Certified Operator” in Kansas

Weekly if not daily I hear from a small city or community that is having issues with maintaining or locating a certified operator to work for the city or water district. Rarely is the question from the entities where can we locate an experienced hand or an operator who has some experience and is trustworthy. More often the question to me is, “Whose name can we list as an operator to maintain compliance?” I believe this issue has two major factors that account for this recurring question. One issue is the ability for the operators to pass the certification exam given by the Kansas Department of Health and Environment (KDHE), and the second factor is that operators leave the utility work for better pay and less responsibility. For this article I hope to provide some insight on the first factor concerning operator certification exams. I plan to cover the wage factor in the next issue of *The Lifeline*. In the ten years working for the KDHE as a water and wastewater inspector this issue persisted beginning with my first water inspection. I was unaware at the time that what I observed was similar to the factors described above. Nor did I know that ten years later the issue would still persist.

During my first water inspection on my own as a KDHE inspector I was greener than a gourd and nervous. Nervous that I may get stumped if asked a question or miss a major violation. But I had my checklist and plenty of training for a small system water inspection. It didn't take long to figure out I didn't need to be worried about getting stumped. I was going to set a record for most violations written in a single inspection. Seemingly, every question or document I asked the certified water operator he answered with, “I don't know – we will have to ask the clerk.”

When I asked the operator for his operator certification, he pointed to the wall to his operator certification certificate. He quickly informed me that the small water district could not pay the previous operator enough money so the operator went to work elsewhere. He also said that two other board members could not pass the test so as a board member it was his turn to study and the take test and as he said, “Unfortunately, I passed.”

How Certification Levels Are Set

In general water certification level, or class, is determined by the type of water being treated, surface or groundwater, and the population that is served. Wastewater certification level is determined by the treatment type, discharging or non-discharging lagoon systems or mechanized treatment systems, with the system population and effluent flow as factors. There are other system specific details and factors that may influence the level of certification required. In Kansas, to become a certified operator in water or wastewater a certification exam must be taken and passed. Prior to being eligible to take the exam specific employment criteria for each class must be met See http://www.kdheks.gov/water/download/ksreg_08_01_certop.pdf to read all the operator certification class criteria for water and wastewater systems

Operator Certification in Kansas . . .

The State of Kansas, through the Department of Health and Environment (KDHE), administers a mandatory water and wastewater operator certification program. The program was begun in 1975 as a result of laws passed by the Kansas Legislature. The law requires all water supply systems and wastewater treatment facilities to be under the supervision of an operator certified by KDHE. The Legislature realized that proper operation of these facilities was essential to protect the health and environment of Kansans.

The program is administered through KDHE and provides for five certification levels for water operators, and five certification levels for wastewater operators. Every water supply system and wastewater treatment facility must be under the operational control of an operator certified at, or above the classification level of the system or facility.

There is currently no mandatory certification program for distribution system, collection system, or laboratory personnel.

In order to achieve certification, an individual must attain competency through study, training, and on-the-job experience. Once a minimum amount of experience has been gained, the individual must pass a written examination. Upon passing the written examination, KDHE will issue a certificate to the operator. The certificate must be renewed every two years. Prior to renewal, the operator must attain continuing education in some aspect of their certification area.

What is required of water and wastewater facility owners?

By law, it is the responsibility of water supply system and wastewater treatment facility owners to operate those facilities with an appropriately certified operator. Operating without a certified operator is considered an unlawful act.

To fully understand the law, we must first define what is meant by the terms water supply system and wastewater treatment facility. A water supply system is defined as the pipes, structures and facilities used to obtain, treat or distribute water to the public for use by humans. Simply put, this means that – wells, surface water intakes, pipelines to transport water from its source, units at a treatment facility, and pipes that distribute treated water to the public are considered parts of a water supply system. Therefore, any water supply system consisting of any one or more of these components, and offers water for use by humans, must be under the operational control of a certified water operator.

A wastewater treatment facility is defined as the facility or group of units provided for wastewater treatment. In

straightforward terms, this means that any activities undertaken to treat wastewater are considered wastewater treatment. Examples include biological treatment processes like waste stabilization ponds, trickling filters, or activated sludge; sludge treatment; clarification; etc. Any facility consisting of one or more of these units must be under the operational control of a certified wastewater operator.

If a small system, class I or II water supply system or wastewater treatment facility loses its only certified operator, the owner may contract with another certified operator, or hire a non-certified individual as an Operator-in-Training (OIT). The owner must notify KDHE within 30 days of hiring the OIT. The OIT has 18 months from the issuance of the OIT certificate to take the appropriate examination. If certification is not attained after one year, the OIT designation can be renewed for up to one additional year if the operator demonstrates progress in attaining certification.

Water System Classification		
Class	Description	Population
Small System	Distribution System Only	All
	Chlorination of Groundwater	<501
I	Chlorination of Groundwater Only	501-1,500
	Treatment of Groundwater*	<501
II	Chlorination of Groundwater Only	1,501-5,000
	Treatment of Groundwater*	501-2,500
	Treatment of Surface Water	<2,501
III	Chlorination of Groundwater Only	5,001-20,000
	Treatment of Groundwater or Surface Water	2,501-10,000
IV	Chlorination of Groundwater Only	>20,000
	Treatment of Groundwater or Surface Water	>10,000
Wastewater System Classification		
Small System	Non-overflowing Wastewater Ponds	All
I	Any Secondary Facility**	<1001
I	Overflowing Wastewater Ponds	All
II	Any Secondary Facility**	1,001-5,000
III	Any Secondary Facility**	5,001-25,000
III	Advanced or Specialized Facility**	<=5,000
IV	Any Secondary Facility**	>25,000
IV	Advanced or Specialized Facility***	>5,000
* Includes iron and manganese removal; softening; membrane filtration; coagulation, sedimentation and filtration; recarbonation; and chemical addition (other than chlorine)		
** Biological treatment including; trickling filters, rotating biological contactors, and activated sludge		
*** Includes chemical, biological, or physical treatment to provide nutrient removal beyond secondary treatment; or effluent clarification		

(This information taken from KDHE operator certification brochure.)

After the inspection the clerk provided me the documents I requested and one violation was cited. When I asked for the daily chlorine residual log the operator provided his log book. In review of the logs I saw several months of logs with two daily chlorine residuals written down per month. The operator was told he only needed to take and record the chlorine residual when he took the bacteriological samples. The look on the volunteer operator's face said it all when he realized his job duty just increased from taking two daily chlorine residuals per month to 365 days per year. He said something to the nature of... "This volunteer work doesn't pay."

As most operators know there are many more duties and responsibilities required of a certified operator for any water or wastewater system. Having a certified operator in responsible charge is required by Federal Law. For some light reading I encourage you to read FRL-6230-8 found in the Federal Register Volume 64 No. 24 Feb. 5, 1999 to see what the system operator requirements are according to Federal law. In Kansas adaptations to the law require both water and wastewater certification.

To me it comes down to what I see and hear on a daily basis. The same held true during my time at KDHE. It is the small town or water district that can't pay competitive wages to maintain an operator.

There is ongoing debate about the criteria as a requirement for taking the operator exams. I will discuss some of the issues that are being debated later in this article. KDHE is in charge of developing and administering the certification exams. These exams and the contents are kept in what seems to be classified material status that only a select few within the agency have access to. I never once knowingly laid my eyes on an exam or questions in ten years as an employee of KDHE.

A passing score on the test requires 70 percent or higher of the answers to be correct. I have

performed countless trainings on operator review for certification exams and in the last year handed out study materials and have met individually with several operators for one-on-one study sessions. In 2018 the average pass rate for all five class types (SS, Class I-IV) in water was 39.2 percent and 38.2 percent in wastewater. In 2017 similar pass rate percentages were reported 38.6 percent water and 38.6 percent for wastewater. My question immediately was, "Are those pass percentage numbers good or bad? They seem really low but on the other hand roughly four out of ten pass." It should be noted that these are averages of all classes there were multiple passing rates in the teens – as in

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13 percent passing rate for one class. The small system pass percentage was generally the highest pass rate with a high of 83 percent. I will state it again I have not seen the test. To me it comes down to what I see and hear on a daily basis. The same held true during my time at KDHE. It is the small town or water district that can't pay competitive wages to maintain an operator. There is the option to hire a contract operator, but at what expense? I heard of a contract operator who charges \$50 a month for his name to be listed as the certified operator for a

wastewater lagoon system, as long as he does not have to go to the facility. Or the town that is just a little too far from anywhere that is paying a contract water and wastewater operator \$1,000 a month for the use of his water and wastewater license. A site visit costs the city extra

I was told about this by the city employee who, per the council's vote, can only work four hours per day at \$10 an hour. This employee takes care of the water paperwork, chlorine residuals, flushing, and then goes to the city lagoon system and scrapes duckweed off Cell 1, then mows all three cells. There is a point to this rant and that is this lady does the daily water and wastewater work, spends more time working on both systems than the contract operator but at eight months of employment she does not meet the minimum criteria of one year of employment by the city to take the Class I water or wastewater test. I provided her some study materials and encouraged her to study for the exam so she would be ready for the first testing date after she met the minimum requirements. She contacted me after I had left and said she would not be able to show proof of a valid GED as she believes the on-line GED she obtained is a scam and has not received verification in her many attempts.

I have not contacted this hard-working lady and informed her the good news that fortunately there is no education requirement to take the test but rather 13 experience points are what is necessary to take the exam. According to the Operator Certification brochure she can go to 48 two-day trainings to receive the additional 12 points added to her one (1) point for a year of employment and she can take the Class 1 operator exam test.

I digress. I will continue my original thought on the ability of operators to pass the operator exam. Is the test so difficult and are the questions really not at all what they studied from the materials provided by KDHE or any one of the training outlets provided in the brochure?

I am not naive to think that every operator who does not pass a certification exam studied their tails off day and night. Nor do I believe every person who took a certification

While passing the exam is important, many people are intimidated by it because many believe they will fail – and if they fail they will be dismissed from employment.

exam and says not one of the questions on the test was what he or she studied. There is nearly unanimous agreement that some modifications to the definition of classes, primarily in the Class 1 water, groundwater versus surface water, and Class 1 wastewater, lagoons versus mechanical plants is necessary. I suspect in the very near future this issue will be addressed

While visiting with an operator I have known for a few years, he asked if I knew he was the contract operator for the nearby town. I questioned him a bit because he said before that he thought it was risky to

just put your name as the operator. I never asked what the financial agreement was. If there was one, I imagine it was a minimal charge. This operator said he was doing this because the city person at the next town over is having trouble passing his Class 1 wastewater test and "the state's on their a**" to get someone certified. He also said he is a

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good guy just trying to keep his town in compliance. I got the gentleman's number and called to offer any assistance I could. It took a little coordination to set a time we could both meet because he works full-time bent over under the hoods of automobiles for a living. We planned to meet on a Friday because he works four days a week as a mechanic and on Fridays, takes care of the city's water and wastewater systems as well as all other city duties like electric, streets, mowing, dog catcher, all the usual duties of a small town city employee. He also works on the weekends to make ends meet for his family.

Meeting up with Big Paw

On that Friday when I walked in I saw a MAN. He towered over me and when I shook his hand I called him Big Paw For those of you who have seen me know towering over me is not really that big of an accomplishment. Fifth graders have done it!

Either way this was large man and a gentle giant. He was doing what he could to keep his dying community together and provide for his family. Big Paw told me that he had taken the wastewater test twice and failed by one question. He had also spent time passing the Small System water exam. It appeared this was going to be the last attempt at taking the test. He admitted he wasn't at the top of his class in academics, he doesn't use a computer much. He grew up in this small town and he planned to stay there for this lifetime. We talked about the wastewater collection system

and the lagoon treatment facility. By all accounts he seemed to know and understand the wastewater system. I asked him about studying for the upcoming exam and he explained his week and the lack of free time to study. We agreed to meet each Friday to study prior to the exam. We did this for three weeks going over materials and test questions prior to the test. A short while after the test I met a logger from the area. We greeted each other. He was from the same town as Big Paw. I mentioned our studying for the wastewater test and he raised his voice and said with excitement, "You didn't hear, Half Ton passed his test!" Turns out locals don't call him Big Paw – it's Half Ton and the town was pulling for him to pass.

Feeling like I had really had an affect on this situation when I saw Half Ton he told me he got a 71 percent which was enough to pass. Did the study time help him get one more question right? I doubt it but I think about what would have happened had he not passed. The city would be paying for a contract operator because the kind operator from the town over left that town for better money. In the last conversation I had with him he named a local, bigger-name farmer who would start him out at more than he was making after his raise and he wouldn't have to deal with all the small-town politics.

This is a somewhat lengthy explanation of just one small-town wastewater system and how the difficulties that passing the operator certification exam are impacting communities. While passing the exam is important, many people are intimidated by it because many believe they will fail – and if they fail they will be dismissed from employment. Other communities are paying high prices for contract operators. Nothing about this has improved the health and environment. Quite possibly, the opposite is happening due to absentee operators. The time is nearing that this situation with lack of operators will not be sustainable.

Stay tuned

In my next article I will discuss wages – and I hope by then KRWA's newest salary survey will be complete also. In the meantime, I encourage anyone who has questions about operator certification, water or wastewater issues, financing water or wastewater improvements to give KRWA a call or contact me directly KRWA is here to help as a partner.

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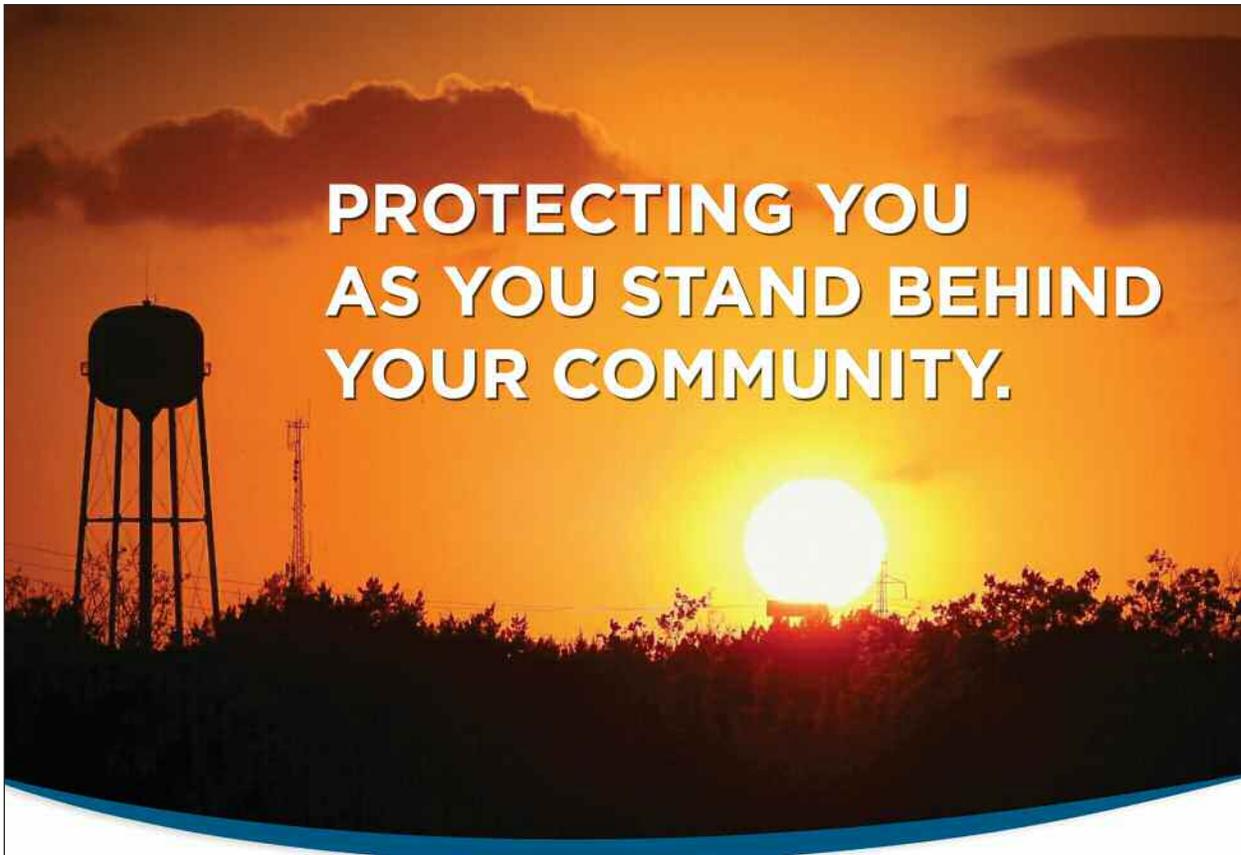
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