

KDHE Providing Funding for New Tech Assistance Program for Wastewater Systems



The Kansas Department of Health and Environment has entered into a contract with the Kansas Rural Water Association to provide technical assistance to wastewater utilities. The purpose is to help utilities stay compliant with the laws, regulations, rules, permits, and policies affecting wastewater utilities, and help wastewater utilities to effectively manage their infrastructure to protect the health and environment of Kansas citizens. There are approximately 800 municipal wastewater systems in Kansas which excludes industrial and other types.

The additional funding doesn't mean new staff positions for KRWA. What it does mean is that staff who often are confronted with questions about wastewater utility operation and maintenance while assisting public water systems will be able to formally respond to such requests. The following are areas that have been identified by KDHE for assistance by KRWA:

1. Wastewater permit requirements including effluent limits, monitoring, reporting, special conditions, and other related regulatory requirements.
2. Sampling procedures, holding times, lab analysis techniques, and available labs.
3. Review of compliance monitoring records and how to return to compliance if exceeding permit limits. If operational changes do not return the treatment system to compliance, discuss process of retaining engineer or appropriate assistance.
4. Make the local officials aware of funding options thru KDHE, CDBG, and Rural Development.
5. Provide assistance with Part 503 Sludge Regulations (which regulates land application of municipal sludge), including calculation of agronomic application rates,

collection of sludge and soil samples for lab analysis, measure lagoon sludge depths to determine if sludge removal and disposal is needed, provide smoke testing to promote infiltration and inflow reduction, conduct rate reviews, review sewer use ordinances and enforcement, provide suggestions on how to manage industrial wastes and respond to other requests from KDHE.

6. Provide general operation and maintenance recommendations on best operating practices, including the following facilities:
 - Mechanical Plant: discuss such items as monitoring sludge concentration in aeration basins, dissolved oxygen monitoring, how to determine sludge wasting rates, how to determine sludge return rates, using techniques to reduce the discharge of nutrients, provisions for handling peak wet weather flows, and ways of handling high strength flow.
 - Lagoons: review standard operation issues such as mowing, series vs. parallel operation, muskrat control, vegetation control, erosion control and repair, use of riprap, how to minimize algae concentration in effluent, controlling discharge from lagoons to minimize stream impact or minimize pollutant discharge, possible conversion of lagoon to non-overflowing status, possible reuse of effluent for irrigation or other appropriate use which avoids or reduces discharge. Calculate lagoon or plant detention times. Determine if high flows are cause of effluent violations and compliance issues.

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KRWA consultant Jeff Lamfers suggested the following improvements to a small city as they requested assistance:

- **Convert both existing lift stations to submersible-type systems.** Both lift stations have served the city for many years and have long outlived their expected service life. I suggest working with your engineer to explore the idea of possibly using the existing wet wells equipped with new submersible pumps. The existing pumps require a lot of maintenance and are not real reliable. New, submersible pumps would improve reliability, allow easier maintenance and eliminate some safety concerns. The city should also review what is needed to allow both existing generators to start automatically should you lose power. Due to a lightning hit, the north lift station does not have a working transfer switch. You also mentioned that both generators need to be maintained and may also need new battery chargers. Providing controls that automatically exercise each lift station weekly is also desirable. KDHE strongly encourages all wastewater systems to have backup power to prevent the discharging of raw sewage for obvious reasons. Making these improvements would greatly decrease the likelihood of future bypasses.
- **The city's three-cell non-discharging lagoon is in pretty good shape.** Capacity is not an issue since the city only uses the south cell and occasionally use the northeast cell when needed. Effluent quality is not an issue, as the lagoon never discharges. The city has the equipment needed to mow the lagoon regularly. New warning signs have been posted and the fence is fine. KRWA measured the sludge depth in the south cell in 2005. Very little sludge was found (8.8 inches with total operating depth of 4.5 feet) so removal is not warranted. My only recommendation regarding the lagoon is to maintain the two north cells to ensure they would be available if ever needed in the future. They should be mowed occasionally. Also make sure no cattails or trees become established as they can damage the clay seal with their extensive root systems, causing seepage problems.
- **Smoke test your entire collection system.** By way of this letter, Charlie Schwindamann of KRWA will place the city on his list of systems requesting smoke testing. He can also probably provide you with a rough cost estimate. However, I think you will find the cost is very, very reasonable. Since your system is relatively new (1978) and composed of ductile iron pipe (or

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plastic) with pre-cast manholes, I would not expect to find many inflow sources. But you never know until you smoke test. Charlie will be able to identify both private sources of inflow (uncapped cleanouts, roof downspouts, etc.) and those sources the city would need to correct. Elimination of inflow sources saves on electrical costs at your lift stations and helps prevent basement backups and bypasses.

- **Update the city's existing sewer and water supply maps.** Again, this is another service that KRWA can provide the city at a reasonable cost.
- **Increase sewer rates.** I know you have heard countless regulators, grant writers and engineers tell you that many, many times. Believe me, you need to increase your rates, especially if the city wants to qualify for grants or loans through government agencies such as Rural Development, KDHE or the Kansas Department of Commerce (CDBG). I believe presently the city charges a flat rate of \$6.50 per month. I rarely encounter cities with such a low sewer rate. Starting now will allow the council to increase rates incrementally as opposed to a single, large increase.

KRWA staff members Jeff Lamfers, Pat McCool and Delbert Zerr each have 30 years experience prior to joining KRWA's staff. They have dealt with both water and wastewater utilities in hundreds of communities. KRWA Wastewater Tech Charlie Schwindamann and other KRWA staff members also have decades of first-hand experience with managing and operating sanitary sewer systems. They know that just like many water systems, many wastewater systems do not generate sufficient revenues to pay for all costs associated with treating sewage. Maintenance is often deferred.

The new tech assistance program funded by KDHE will allow KRWA to provide expanded services to wastewater systems across Kansas. KRWA thanks KDHE for the agency's confidence and partnership in establishing the new wastewater tech assistance program. If your community has a question about wastewater utility operation or management, KRWA can and will help. Give KRWA a call or send an email to krwa@krwa.net or directly to Jeff at jeff@krwa.net.

Elmer Ronnebaum is KRWA General Manager; he has been employed by KRWA since 1983. He served seven years on the KRWA board of directors prior to that. He also helped develop a large RWD and served for 14 years on a water district board of directors.

