

# Kansas Water Use Reporting and Data Management

Ginger E. Pugh, PE

Kansas Department of Agriculture, Division of Water Resources

September 17, 2019

# Kansas –Today's Overview

- Kansas Water Administration Basics
- Water Rights Structure
- Annual water use reporting
- Online water use reporting
- Migration from Oracle SQL to MS SQL Server
- Applications of water use data

# KS Water Administration Basics

## KDA-DWR:

- Administers 30 laws and responsibilities, including...
  - Kansas Water Appropriation Act which governs how water is allocated and used
  - Statutes regulating the construction of dams, levees and other changes to streams
  - Four interstate river compacts
  - National flood insurance program in Kansas.
- Headquarters –Manhattan, KS
  - 4 field offices across the state

Focusing on KWAA today

# KS Water Appropriation Act - 1945

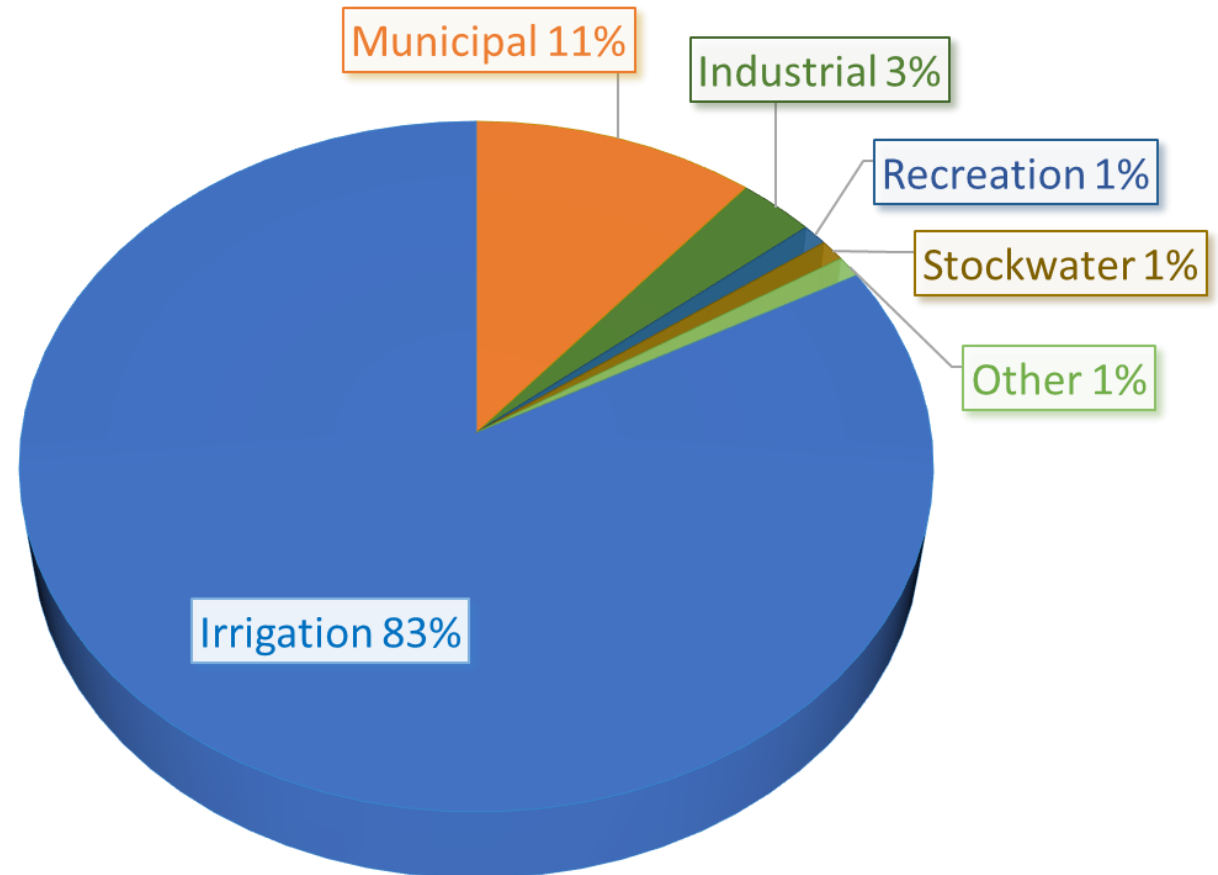
- Water in Kansas is dedicated to the use of the people of Kansas
- Right to use water based on prior appropriation or "First in Time – First in Right"
- Water must be put to a Beneficial Use

# KS Water Rights Structure

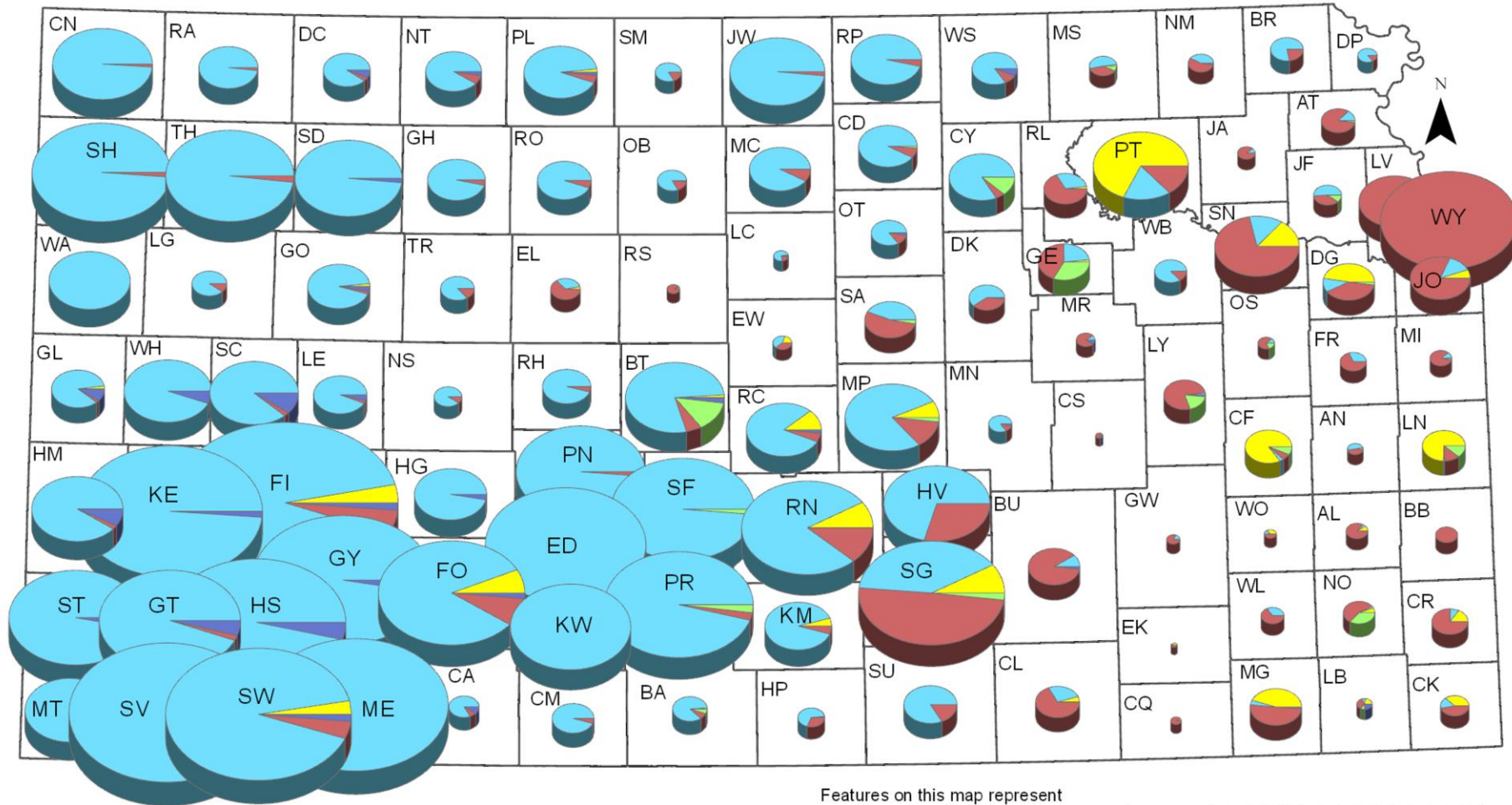
- Priority-based water rights
- Data stored in KS's Water Right Information System (WRIS) database
  - MS SQL Server
  - Online download through KGS's WIMAS
- Detailed information stored which ties together...
  - Water Right (significant dates, use of water, authorized annual quantity...)
  - Point of Diversion (GPS coordinates, source, county, water use...)
  - Place of Use (STRQQ, acres authorized...)
  - Correspondent (owner, water use reporter, landowner...)
- Flowmeters required
  - Required State-wide
  - Certified List
  - Installation Requirements
  - Adequate Quantity Capacity
  - Repair/Replacement tracking

# Annual water use reporting

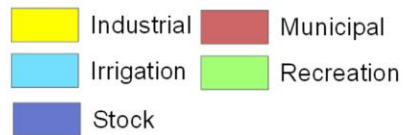
- Required annually per K.S.A. 82a-732
- Mailed around January 1 and due March 1
- Use of water specific formats
- Reporting period
- Quantity of data collected



# 2017 Reported Water Use for Kansas Counties

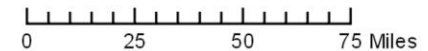


## Use Made of Water



Features on this map represent conditions as of the date of the map and are subject to change. The user is referred to specific policies, regulations and/or orders of the Chief Engineer.

Uses of water for artificial recharge, contamination remediation, dewatering, domestic, fire protection, hydraulic dredging, thermal exchange and water power use are not shown on the charts.



Kansas Department of Agriculture  
Division of Water Resources  
October 8, 2018

# Water Use Compliance Enforcement

Statutes and Regulations requiring compliance (K.S.A. 82a-732 and K.A.R. 5-14-11&12)

- Incomplete/Inaccurate Report: **\$1,000** per year per file number
- No Report by March 1: **\$250** per file number
- No Report by June 1: **\$1,000** per file number and the **suspension** of water use until report received.
- Penalty caps
  - Monetary (per day and per occurrence)
  - Water Use (duration of suspension)

Category	Level A <24 Hours	Level B 24 – 72 Hours	Level C More than 72 Hours
No Penalty w/in 5 yrs	Written Notice of Non-Compliance	\$1000 / day & a reduction in quantity equal to 2X quantity overpumped (not to exceed one year suspension)	\$1000 / day & a reduction in quantity equal to 3X quantity overpumped (not to exceed one year suspension)
One (1) Penalty w/in 5 yrs	\$1000 / day & a reduction in quantity equal to 2X quantity overpumped (not to exceed one year suspension)	\$1000 per day and a one year suspension	\$1000 per day and a three year suspension
Two (2) Penalties w/in 5 yrs	\$1000 per day and a one year suspension	\$1000 per day and a three year suspension	\$1000 per day and a four year suspension
Three (3) Penalties w/in 5 yrs	\$1000 per day and a three year suspension	\$1000 per day and a four year suspension	\$1000 per day and a five year suspension



# Irrigation Report Example

## 2018 IRRIGATION WATER USE REPORT

This is the annual Water Use Report required to be filed for all Vested or Appropriation Rights. IMPORTANT: Kansas Law requires this completed report to be filed by March 1. Failure to do so will subject the owner to a civil fine not to exceed \$1,000 per file number. If any point of diversion shown below is permanently inoperable, please circle it. IF YOU DID NOT USE WATER, YOU MUST REPORT THE REASON FOR NON-USE TO HELP PROTECT YOUR WATER RIGHT. Information on each point of diversion must be completed. Please begin by reading the attached instructions and definitions.

FILE NUMBER	LEGAL DESCRIPTION OF POINT(S) OF DIVERSION		CIN	CHM	END	ACRES IRR.	INCLUDE MULTIPLICATION FACTOR			U N I T	HOURS PUMPED	PUMP RATE (GPM)	CROP CODE	TYPE OF SYSTEM	TYPE OF ENERGY	WELL DATA	
	QUALIFIERS	SEC TWP RNG					BEGINNING WATER METER READING	ENDING WATER METER READING	METERED QUANTITY OF WATER							DEPTH TO WATER	DATE MEASURED

# WRs: \_\_\_\_\_ (\$20/WR) Amount Due: \_\_\_\_\_ Due by: March 1, 2019 **\*IF SUBMITTED ONLINE, THE FEE IS WAIVED\***

CALENDAR YEAR: \_\_\_\_\_ PIN NUMBER: \_\_\_\_\_ Person ID: \_\_\_\_\_ USE: \_\_\_\_\_ FIELD OFFICE: \_\_\_\_\_ CO: \_\_\_\_\_ GMD: \_\_\_\_\_  
 \_\_\_\_\_ Total acres irrigated.

I submit the report as the best information available. I understand that knowingly falsifying the report is a violation of state law.

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
 CIRCLE ONE: OWNER AGENT TENANT

E-MAIL ADDRESS: \_\_\_\_\_

TELEPHONE NO. ( \_\_\_\_\_ ) \_\_\_\_\_  
 CIRCLE ONE: CELL WORK HOME



# Municipal Report –last page

## MUNICIPAL WATER USE REPORT (PUBLIC WATER SUPPLY)

### PART D: WASTEWATER DISCHARGE

Check one:

- No wastewater treatment    
  Pond or lagoon    
  Wastewater treatment facility    
  Other facility treats wastewater

If lagoon or treatment facility discharges to a stream, complete the following:

Amount of discharge, in 1,000 gallons: \_\_\_\_\_

Does the above amount include rainwater:     Yes     No

Name of stream receiving discharge: \_\_\_\_\_

### PART E: WATER SOLD TO OR PURCHASED FROM OTHER ENTITIES (Report all amounts in units of 1,000 gallon)

Please provide the name of each ENTITY that water was sold to or purchased from during the year. Water purchased from the Kansas Water Office should also be recorded here. Report all quantities in units of 1,000 gallons. Copy this form as needed to completely report sold and purchased water. The total amount of water purchased each month should be entered in Column 2 of PART B, and the total amount sold each month should be entered in Column 3 of PART B.

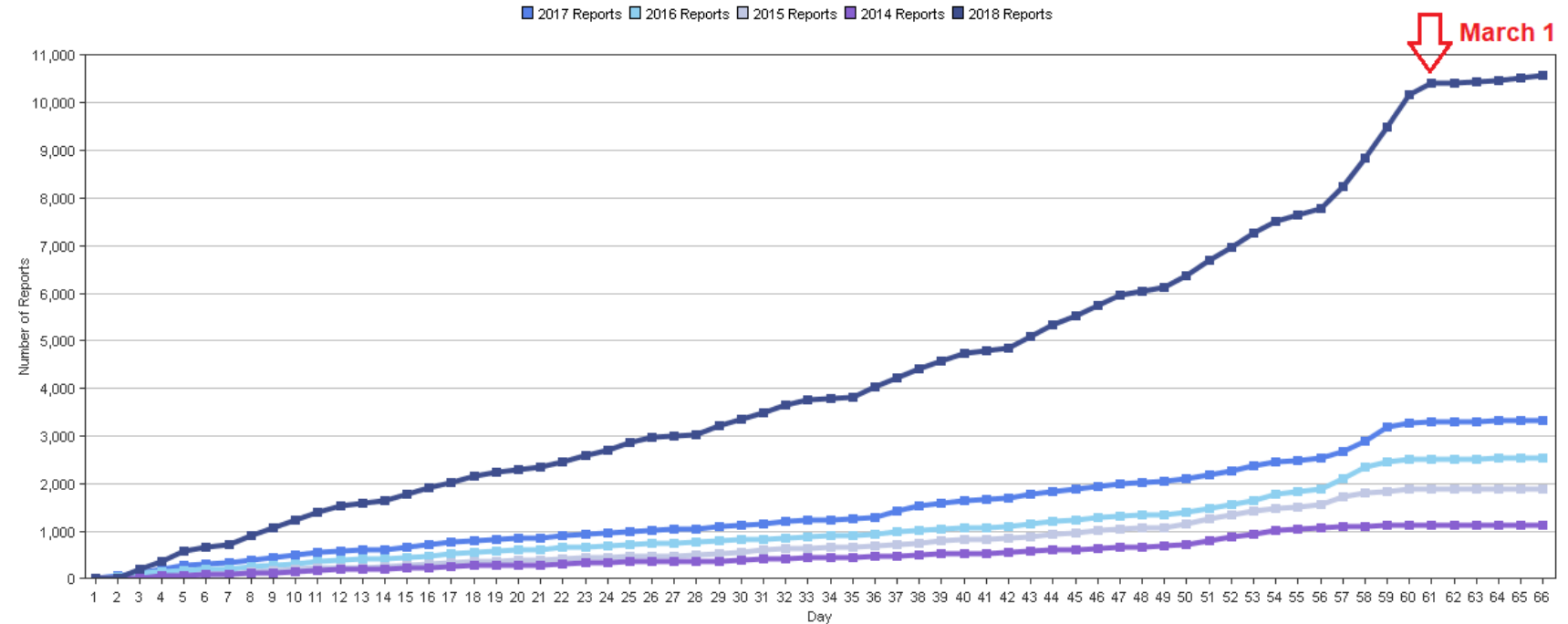
Name: _____	Name: _____
County: _____	County: _____
_____ Sold To    _____ Purchased From	_____ Sold To    _____ Purchased From
Jan. _____	Jan. _____
Feb. _____	Feb. _____
Mar. _____	Mar. _____
Apr. _____	Apr. _____
May _____	May _____
June _____	June _____
July _____	July _____
Aug. _____	Aug. _____
Sept. _____	Sept. _____
Oct. _____	Oct. _____
Nov. _____	Nov. _____
Dec. _____	Dec. _____
Total _____	Total _____
Name: _____	Name: _____
County: _____	County: _____
_____ Sold To    _____ Purchased From	_____ Sold To    _____ Purchased From
Jan. _____	Jan. _____
Feb. _____	Feb. _____
Mar. _____	Mar. _____
Apr. _____	Apr. _____
May _____	May _____
June _____	June _____
July _____	July _____
Aug. _____	Aug. _____
Sept. _____	Sept. _____
Oct. _____	Oct. _____
Nov. _____	Nov. _____
Dec. _____	Dec. _____
Total _____	Total _____

# Online water use reporting

- How we got to nearly 90% submittal online

- Four years of use before really pushing online for all
- Administration that pushed regulations to allow a paper filing fee if an online option was available
- \$20/Water Right paper filing fee
- Paper fee waived if reported online
- Publicity

- Pre-mailing postcard
- Radio blurb
- Notifying local entities
- Phone conversations
- Emails



## Percent submittal by water use year:

2014: 9%	2017: 27%
2015: 15%	2018: 88%
2016: 20%	

# Online Water Use Reporting

- Many built in checks for quality control
- Summary pages for identifying special case reports
- Saves a ton of time for DWR staff and reduces callbacks
- Efficient database entry
- Ability to easily add data reporting items

# Online Water Use Reporting

- Lessons learned
  - Make sure you've got a stable product
  - Have a responsive and knowledgeable development team
  - Expect large call volumes
  - Have thick skin

# Kansas Water Use Reporting System



## Enter your PIN and Person ID

[Click here for PIN and Person ID Help](#)

[Trouble logging in with Internet Explorer?](#)

PIN:

Person ID:

Log In

Welcome to the Kansas Water Use Reporting System. Annual water use can be reported on-line to comply with the water use reporting requirements of the Kansas Water Appropriation Act. Owners of water rights in Kansas must report the previous years' use for all uses, except domestic use, by March 1 of each year. Filing a complete and accurate report will help protect your water right.

If you need help, please read the [Instructions](#) for completing the on-line report and [Terms and Definitions](#).

Failure to file a water use report by **March 1**, or filing an incomplete report, subjects the owner to a civil penalty not to exceed \$1,000 per water right permit. Failure to file a water use report by June 1 could result in a suspension of all water use until the report has been submitted. See [K.S.A. 82a-732](#).

### Getting Started:

1. Login using the PIN and Person ID. These numbers are printed in the lower left hand corner on the annual water use report form mailed to you.
2. Once logged in, follow the instructions inside the pages displayed. Particularly take notice of the links at the top of each page which are helpful to navigate through the different parts of the report that may be required for specific use made of water.

# Kansas Annual Water Use Reporting System

[Water Use List](#) | [Print Report](#) | [View Report](#) | [Instructions](#) | [Terms and Definitions](#) | [Change Address](#) | [Log out](#)

## Municipal Report

Point of Diversion	Report Water Usage	Well Depth (ft)	Depth to Water (ft)	Date Measured (mm/dd/yyyy)	Comment
<b>SF1-00</b> 147°N 3494°W 11-24-12W SW SE SW CIN: 1 MUN WELL_1-STANDBY WELL <a href="#">Alias?</a>	<b>Was point of diversion used during the past year?</b> <input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="text"/> <i>Quantity</i>	<input type="text"/> <i>optional</i>	<input type="text"/> <i>optional</i>	<input type="text"/> <i>optional</i>  100 characters left

[Next](#)

Contact us: 785-564-6638 [wateruse@ks.gov](mailto:wateruse@ks.gov)



# Migration from Oracle SQL to MS SQL Server

- WUDR grant funding and in-kind match
  - Part of agency directive to get all programs off Oracle
- Migrated database from Oracle to Microsoft SQL Server
- Agile Scrum followed by KANBAN development process
- Rebuilt User Interface -browser based
- Set up internal user groups
- Reestablishing connections for external users
- Building reports for staff and external users
- Adding built-in QA/QC
- Building portal for accessing water use data

# Oracle WRIS User Interface...

The screenshot displays the Oracle WRIS User Interface for a Water Right Query. The window title is "Water Rights Information System" and the menu bar includes "Action", "Edit", "Query", "Block", "Record", "Field", "Window", "Help", "WR File", "Action Trail", "Correspondent", "Conserv. Plan", and "WRCP Trail". The toolbar contains various navigation and action icons.

The main form is titled "Water Right Query (WR5Q)" and contains several sections:

- WR Number:** [Text Field]
- WR Qualifier:** [Text Field]
- Vested County Code:** [Text Field]
- Right Type:** [Dropdown Menu]
- Priority Date:** [Text Field]
- ALT Effective Date:** [Text Field]
- Legal Action:**  **Act Special Cond:**
- Field Office:** [Text Field]
- Current Dates:** [Text Field]
- Complete by:** [Text Field]
- Perfect By:** [Text Field]
- Source of Supply:**  Surface  Groundwater
- Application Received:** [Text Field] **Approved:** [Text Field] **Completion Ack:** [Text Field] **Cert Issued:** [Text Field] **Expires:** [Text Field]

Below these fields is a section for "SIC Code Use Made of Water" with columns for "SIC Code", "Use Made of Water", "Active UMW?", "Current Status", and "Total Irrigated Acres".


The "Points of Diversion" section features a table with columns: Active?, Sect, Twn, Dir, Range, Dir, ID, Feet North, Feet West, Q4, Q3, Q2, Q1, Lot, L2, L1, County, GMD, Ovl, Basin Name. The first row is highlighted in cyan.

The "Places of Use" section features a table with columns: Active?, Sect, Twn, Dir, Range, Dir, ID, Total Acres Irr, Total New Acres Irr, Overlap?, Place of Use, Comment. The first row is highlighted in cyan.

At the bottom, there are several buttons: RatesQuants, PDIV, PUSE, Battery of Wells, Irrigated Acres, ES Update ACT, 5 YR Alloc, Water Use, and MYFA Lookup.

# New WRIS User Interface

KANSAS WATER INFORMATION SERVICE
Back Forward



Ginger Pugh

- Water Rights
- Search WRIS
- Points of Diversion
- Places of Use
- Contacts
- Water Use

Reports
Save & Continue

## Water Right > #8681-00

Water Right # 8681-00

<b>WR # *</b>	8681	<b>Right Type *</b>	A - Appropriated Water Right	<b>Field Office *</b>	4 - GARDEN CITY FIELD OFFICE	<b>App Recv</b>	4/18/1961
<b>Qualifier *</b>	00	<b>Priority Date *</b>	04/18/1961	<b>Complete By</b>	12/31/1964	<b>Approved</b>	5/15/1961
<b>Vested County</b>		<b>ALT Effective</b>		<b>Perfect By</b>	12/31/1966	<b>Comp Ack</b>	1/13/1965
<b>Source *</b>	Groundwater	<b>Expires</b>		<b>Special Cond</b>	N	<b>Cert Issued</b>	7/23/1970
				<b>Temp Reduced Qty.</b>	N	<b>Legal Action?</b>	N

Use Made of Water (UMW) + Add

UMW Code	SIC Code - Description	Active?	Current Status	Total Irrigated Acres
IRR	-	<input checked="" type="checkbox"/>	CERT ISSUED (NK)	478.96

Points Of Diversion | Rates & Quantities | Places of Use | File Contacts | Water Use Pt. A (Detail) | Action Trail(s) | Docuware | Special Conditions

Battery of Wells
Associate Point of Diversion

PDIV #	Active	Sec / Twn / Rng	CIN	Ft N	Ft W	Quarters	Lot	County	GMD	Ovl	Basin	Batt ID	Comments
86730	<input checked="" type="checkbox"/>	30 / 29S / 29W	2	2765	4845	SW SW SW		GY	3	Y	CROOKED CREEK	N/A	+ Add Comment
45892	<input type="checkbox"/>	25 / 29S / 30W	1			SW SW SE		GY	3	N	CROOKED CREEK	N/A	+ Add Comment
84374	<input type="checkbox"/>	25 / 29S / 30W	4	2262	1474	NE NW SE		GY	3	N	CROOKED CREEK	N/A	2182' N & 1136' E OF PREV P/D

# Applications of water use data

## Who uses it:

- Division of Water Resources
- Kansas Water Office
- US Geological Survey
- Kansas Geological Survey
- Kansas Groundwater Management Districts
- Kansas Rural Water Association
- Kansas Department of Revenue
- And More!

## What it is used for:

- Certifying water rights
- Compliance and enforcement activities
- Conservation efforts across the state
  - WCA, LEMAs, IGUCAs, WR Administration, CREP
- Interstate compact administration
- Water banking tracking
- Catching leaky systems
  - Unaccounted for water
- Modeling efforts and updates
- Research and more

# Questions?

Ginger Pugh

Ginger.Pugh@ks.gov