This information is preliminary and is subject to revision. It is being provided to meet the need for timely best science. The information is provided on the condition that neither the U.S. Geological Survey nor the U.S. Government shall be held liable for any damages resulting from the authorized or unauthorized use of the information. This information is not for distribution.
Agenda

1. Background
2. NWIS real-time water-quality webpages
3. WaterAlerts
4. NRTWQ real-time webpages
5. Water Dashboard
6. WaterQualityWatch
7. NWQN

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Methods

- Continuous data – since 2012
  - 15-minute streamflow and water-quality data
  - Available in near-real time (hourly)
  - Quality-assured and approved quarterly
  - Require periodic maintenance visits
    - Cleaning
    - Calibration
    - General troubleshooting

https://waterdata.usgs.gov/nwis

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Methods

- Continuous data – since 2012

https://waterdata.usgs.gov/nwis
Methods

- Discrete data – since 2012
  - Major ions
  - Dissolved solids
  - Nutrients
  - Suspended sediment
  - Indicator bacteria
  - Cyanobacteria
  - Microcystin
  - Taste-and-odor compounds

- Minimum of 36 samples required for model development
  - Representative range of flow conditions

- Minimum of 8 samples per year required for model validation

https://waterdata.usgs.gov/nwis

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National Water Information System (NWIS)

https://waterdata.usgs.gov/nwis

- Discrete water-quality data
  - USGS Water Quality Samples for USA: Sample Data
    - (https://nwis.waterdata.usgs.gov/usa/nwis/qwdata)

- Real-time continuous water-quality data
  - USGS Current Conditions for the Nation -- Water Quality
    - (https://waterdata.usgs.gov/nwis/current/?type=quality)
  - Kansas River at Wamego (06887500)
  - Kansas River at Topeka Water Plant (06888990)
  - Kansas River at De Soto (06892350)
  - Kansas River nr Lake Quivira (WaterOne) (06892518)

Kansas River at Wamego, KS (USGS station # 06887500)

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National Water Information System (NWIS)

- Continuous water-quality data missing data due to removal.

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National Water Information System (NWIS)

- Continuous water-quality data missing data due to fouling

Specific conductance

Turbidity

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USGS WaterAlerts
https://maps.waterdata.usgs.gov/mapper/wateralert/

- Receive text or email alerts when certain parameters, measured by real-time USGS data collection stations, exceed user-definable thresholds.

- Links
  - Kansas River at Wamego
  - Kansas River at Topeka Water Plant
  - Kansas River at De Soto
  - Kansas River nr Lake Quivira (WaterOne)

* select water-quality parameters with “[YSI EXO]” in name

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Linear Regression Models

- Chloride example (https://nrtwq.usgs.gov/ks/)

Specific conductance as a surrogate for computation of Chloride concentration
National Real-Time Water Quality (NRTWQ)

https://nrtwq.usgs.gov/

- Surrogate models in Kansas
  - https://nrtwq.usgs.gov/ks/
  - Kansas River at *Wamego*
  - Kansas River at *De Soto*

*Surrogate models at Topeka (06888990) will be published by June 2022.*
Linear Regression Models

- Chloride example (https://nrtwq.usgs.gov/ks/)

**MODEL FORM**

\[ \log_{10}(CLR) = 1.97 \times \log_{10}(SC) - 3.78 \]

where:
- CLR is chloride (mg/L) and,
- SC is specific conductance (µS/cm at 25 degrees Celsius)

The data used to produce this plot are provisional and have not been reviewed or edited. They may be subject to change.
USGS National Water Dashboard
https://dashboard.waterdata.usgs.gov/app/nwd/

- New USGS web application
- Provides critical flood info, compatible with desktop or smartphone
- Real-time stream, lake, precip, and groundwater data for all USGS monitoring stations.
- Overlays weather data
- Links to NWIS, WaterAlert

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Can get snapshots of current streamflow, drought, and flood conditions.

Also can review historical streamflow conditions.
Measurements include:
- Streamflow
- Water temperature
- Specific conductance
- pH
- Dissolved oxygen
- Turbidity
- Chlorophyll
- Nitrate

Links to NRTWQ via “Surrogates” button
USGS National Water-Quality Network (NWQN)

https://nrtwq.usgs.gov/nwqn/#/

- National network of sites used to assess current and long-term trends in water quality across the nation.
- Kansas River at De Soto is part of this network.
- Links to NRTWQ via “Surrogates” button
Which web application?
Contact Information
Thomas Williams
tjwilliams@usgs.gov
(785) 832-3570

Additional Information Available on the Web
Kansas River Study –
https://ks.water.usgs.gov/kansas-river-algal

USGS WaterAlerts–
https://maps.waterdata.usgs.gov/mapper/wateralert/

USGS Continuous Real-Time Water-Quality Data –
https://waterdata.usgs.gov/ks/nwis

USGS Real-Time Water Quality –
https://nrtwq.usgs.gov

USGS National Water Dashboard –
https://dashboard.waterdata.usgs.gov/app/nwd/?region=lower48

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