Welcome to our Stakeholder Webinar Series

The Cooperative Water Program is hosting the second in a webinar series on **November 14th at 1:00 p.m. Eastern Standard Time.** Expected duration is 1 hour and 15 minutes.

The title of the featured science presentation, by USGS Hydrologist, Jennifer Graham in the Kansas Water Science Center, is ***Fate and Transport of Cyanobacteria-Related Toxins and Taste-and-Odor Compounds from Upstream Reservoir Releases in the Kansas River, Kansas*** (see abstract below).

Cooperators will speak to the relevance of the science in their day-to-day decisions, including **Tom Schrempp from Johnson County WaterOne and Earl Lewis from the Kansas Water Office**.

Discussion and questions will follow.

Webinar Logistics to view and listen to the presentation Power Point:

Webex Link: https://doilearn.webex.com/doilearn/tc
Click on "join" next to: Cyanobacteria Monitoring in Kansas
Password: bluegreen
Host: Cathy Tate

Teleconference:

For those located in the USGS National Center in Reston, VA: **x4848**
For those located in DOI facilities outside of National Center: **1-703-648-4848**
For those located in "non-DOI" facilities may dial Toll Free: **1-855-547-8255**
You will be asked for a code: **67702#**
Note: The toll free number is blocked at DOI facilities, due to the fact that is it less expensive to dial 703-648-4848 over FTS at these sites. If you are unable to connect with the toll free number for any reason, please use the 703-648-4848 number instead.

Abstract:

USGS, in cooperation with the City of Lawrence, the City of Topeka, Johnson County WaterOne, the Kansas Water Office, and the Kansas Department of Health and Environment, quantitatively documented the transport of cyanobacteria and associated compounds in the Kansas River during reservoir releases. The Kansas River is a primary source of drinking water for about 800,000 people in northeastern Kansas.

Water released from Milford Lake to the Kansas River during a toxic cyanobacterial bloom in late August 2011 prompted concerns about cyanobacteria and associated toxins and taste-and-odor compounds in downstream drinking-water supplies. During September and October 2011 water-quality samples were collected to characterize the transport of cyanobacteria and associated compounds from upstream reservoirs to the Kansas River.

Within a week after initial reservoir releases, microcystin, geosmin, and MIB were detected throughout a 173-mile reach of the Kansas River; these compounds remained detectable throughout the reach until mid-October. Losses to groundwater when streamflows in the Kansas River were increasing indicate the potential for reservoir releases to affect groundwater quality as well as surface-water quality. Microcystin and taste-and-odor compounds co-occurred in more than half of the samples collected, indicating co-occurrence was common. Despite frequent co-occurrence, the spatial and temporal patterns in microcystin, geosmin, and MIB

were unique and did not necessarily match patterns in cyanobacterial abundance. Use of a single compound or cyanobacterial abundance alone cannot necessarily be used as an indicator of the presence or concentration of these compounds. (Report; Press release)

A follow-up 5-year Kansas River study (through 2017) has been initiated to (1) characterize sources, frequency of occurrence, and potential causes, including fate and transport from upstream reservoirs, of cyanobacteria and associated toxins and taste-and-odor compounds in the Kansas River, and (2) provide an advanced real-time notification system with sufficient lead time to alert water suppliers that use the Kansas River as a source-water supply of changing water-quality conditions that may affect treatment processes or cause cyanotoxin and/or taste-and-odor events.

Additional Kansas studies focus on biological, physicochemical, hydrological, and meteorological processes in the Cheney Reservoir, a drinking water supply for the city of Wichita, Kansas, to help estimate taste-and-odor occurrences and develop new relations with other variables of concern, such as cyanotoxins. (Learn more - http://ks.water.usgs.gov/studies/qw/cheney/). The studies have prompted the development of real-time estimates of water-quality constituent concentrations and transport from the watershed. Continuously monitored variables, such as light, temperature, conductivity, and turbidity have been used to develop real-time water-quality models to estimate when geosmin, a common taste-and-odor causing compound, concentrations will exceed the human detection threshold of 10 nanograms per liter. The city of Wichita uses these models, along with other variables measured in real time, to aid the management of Cheney Reservoir and decrease water-treatment costs. (Learn more: http://ks.water.usgs.gov/studies/qw/cyanobacteria/).

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