

ROLLA WATER RESOURCES LUNCHEON SEMINAR

Thursday, November 18, 2010

11:45 a.m. - 1:00 p.m.

U.S. GEOLOGICAL SURVEY
1400 INDEPENDENCE ROAD
ROLLA, MO 65401

E-Coli Monitoring At Lake of the Ozarks

John Schumacher
U.S. Geological Survey

The current standards for monitoring recreational waters in the United States have their origins dating back to the 1940s and 1950s --years before the Clean Water Act. Currently (2010) the U.S. Environmental Protection Agency (EPA) requires that *Escherichia coli* (*E. coli*) be used as an indicator of the presence of potential human pathogens in fresh waters used for recreational purposes. During 2009, the detection of *E. coli* above the standard for relational water in samples collected from two public-swimming beaches at Lake of the Ozarks State Park became the subject of much controversy and concern as the public and policy makers strived to keep abreast with the daily news headlines. During the height of the issue that was referred to in the press as “E. coli-gate”, some called for resignations of key officials and even the dismantling of the Missouri Department of Natural Resources (MDNR). The controversy continued into 2010 prompting the Missouri Attorney General to host a two day symposium on water-quality issues at the lake. Much of the confusion is rooted in the mixing of the objectives and results from two independent *E. coli* monitoring programs currently underway at the lake; one program is the routine MDNR public-swimming beach monitoring and the other is a 5-year (2007-2012) lake-wide reconnaissance monitoring program being conducted by the Lake of the Ozarks Watershed Alliance (LOWA) and the MDNR.

The presentation will summarize the objectives and results of *E. coli* monitoring at Lake of the Ozarks and focus on challenges of using the current USEPA approved indicator bacteria methods and emerging technologies such as Microbial Source Tracking (MST) to assess recreational water quality. The presentation will close with a discussion of some approaches being investigated by the U. S. Geological Survey (USGS) and others, including a current study by the USGS and the Missouri University of Science and Technology, to provide water managers with more timely and reliable information on the microbial health of recreational waters. These approaches may be useful at the Lake of the Ozarks.

Biography: John Schumacher is the Chief of Hydrologic Investigations at the USGS, Missouri Water Science Center. He has conducted a wide range of research in Missouri ranging from radionuclide transport, the microbial degradation of explosives and chlorinated solvents, to the source and survival rates of fecal bacteria in streams and land-applied animal waste.

---Next Luncheon---

Shane Barks, USGS

Water Resources Operations in China

Thursday, December 9, 2010 11:45 AM – 1:00 PM

Park in the USGS south lot (free parking) and enter the visitor entrance in the southwest corner of the building. For those of you attending the meeting from outside Rolla, you can find directions to the USGS Rolla Center at: <http://mcmweb.er.usgs.gov/>. The Rolla Water Resources Luncheon is a Brown Bag Lunch event. For those unfamiliar with the area and disinclined to brown bag it, you can find take-out options offerings among the Rolla restaurants found at: <http://mcmweb.er.usgs.gov/rollamap09ext.pdf>