

Mercury TMDL Update

July, 2006

Cooperating Agencies



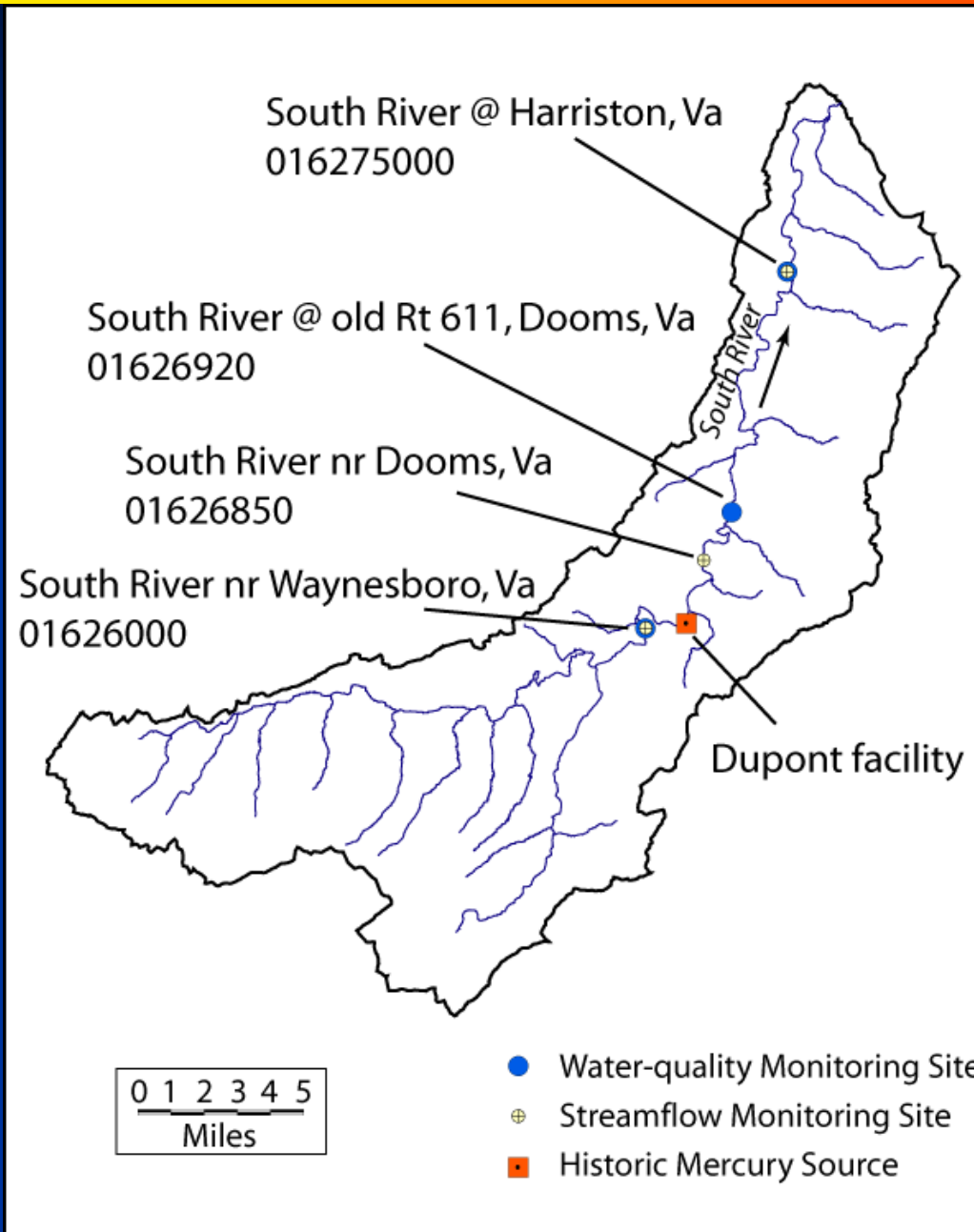
Jack Eggleston



Goals of the Project

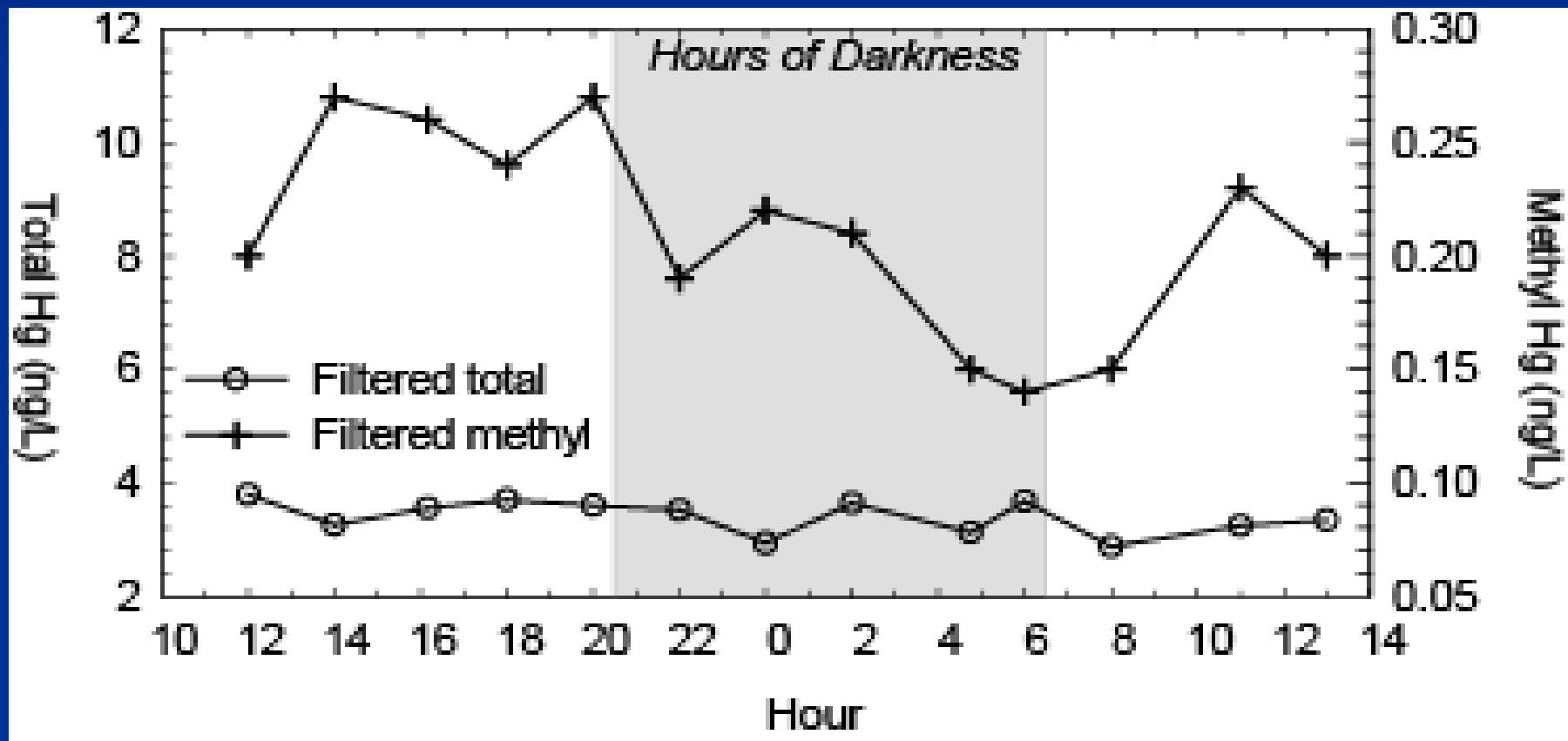
- Collect data characterizing mercury (Hg) and methyl-mercury (MeHg) fluxes and production rates in the South River watershed.
- Develop numerical models for simulating surface water flows and Hg cycling and transport.
- Using the surface water and contaminant transport models, calculate maximum allowable mercury loads (TMDL) from all point and non-point sources.

USGS Monitoring Stations



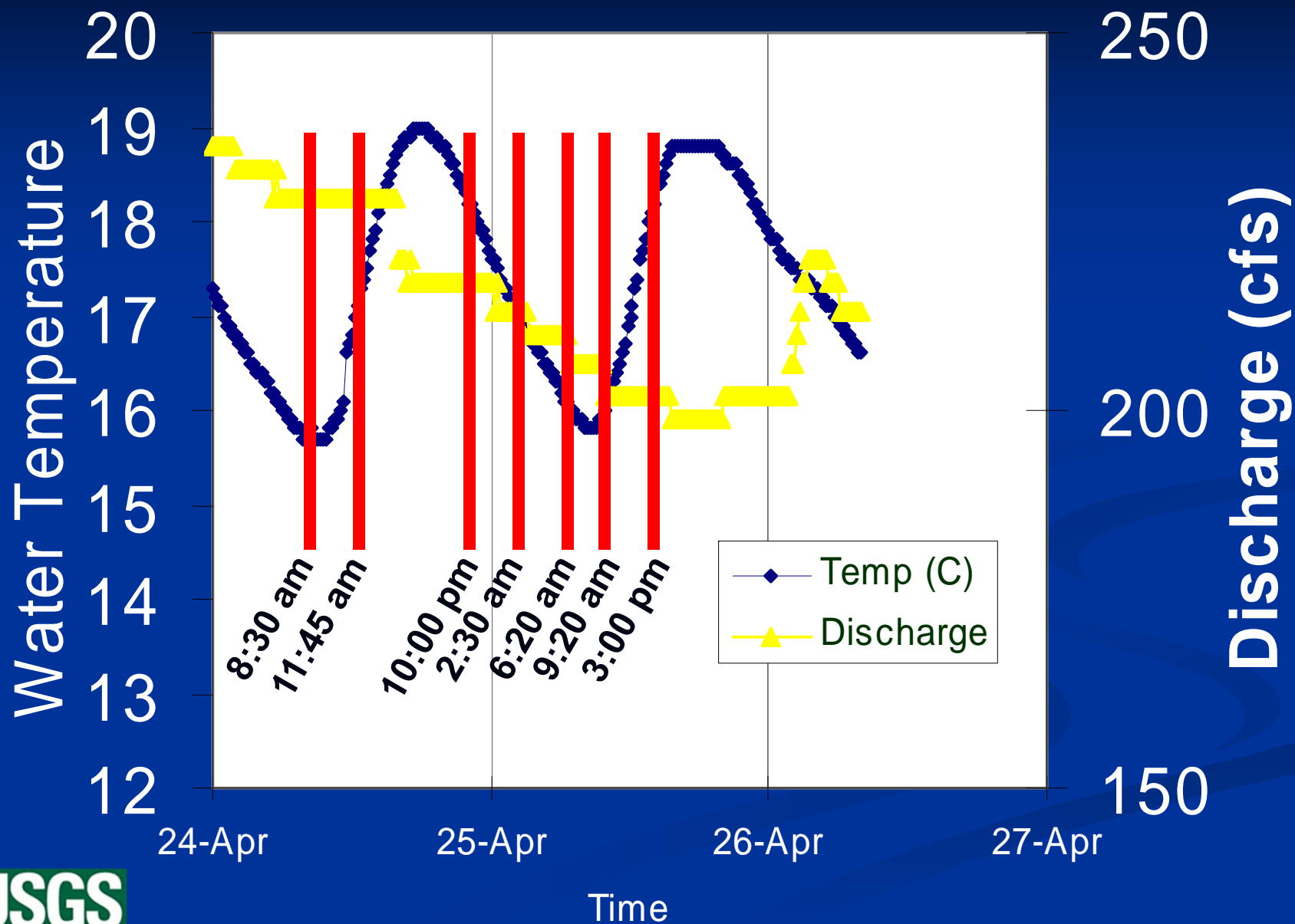
Diurnal (Diel) Mercury Patterns

- Other freshwater systems have MeHg concentrations that vary diurnally

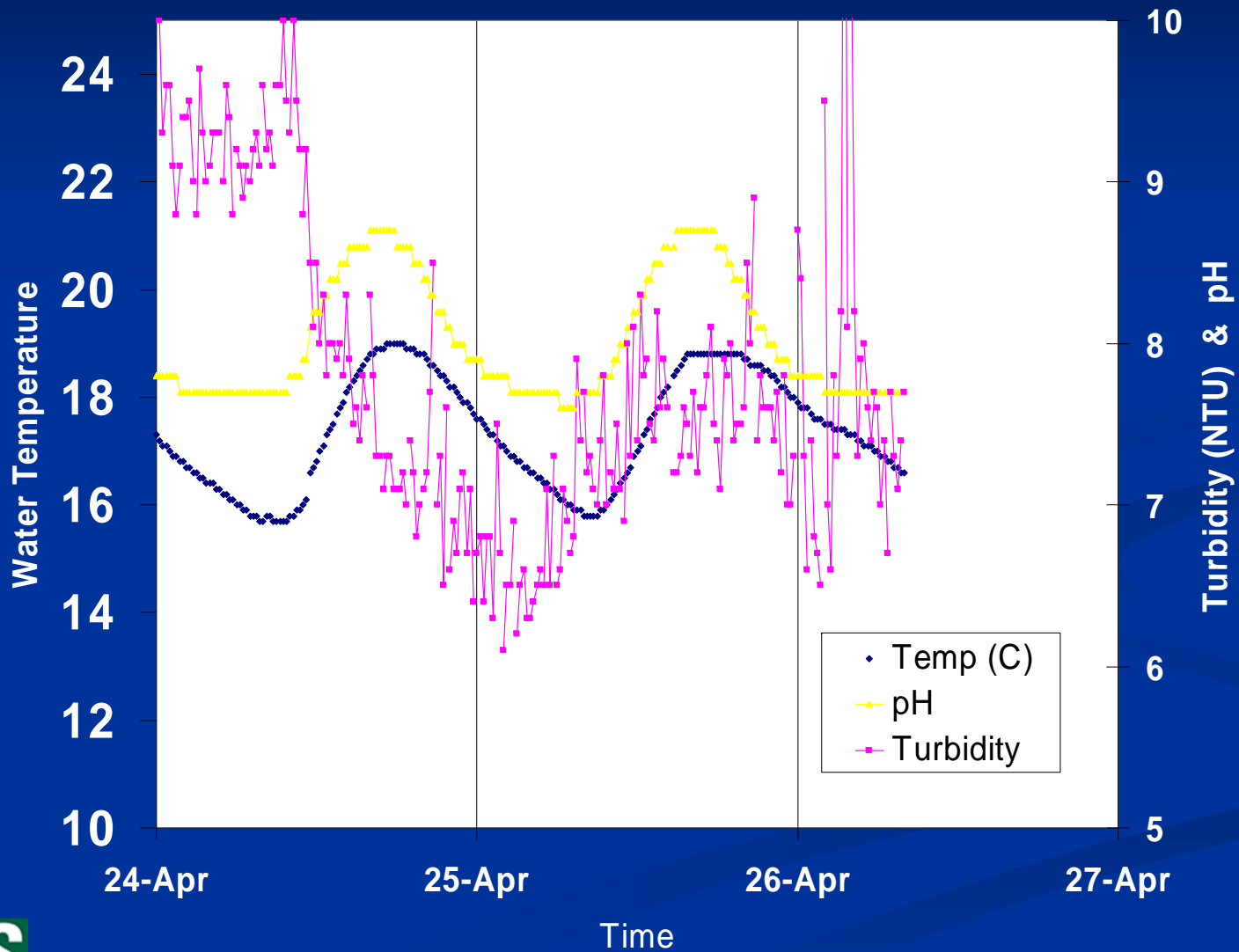


Hg in a Montana stream with mine drainage

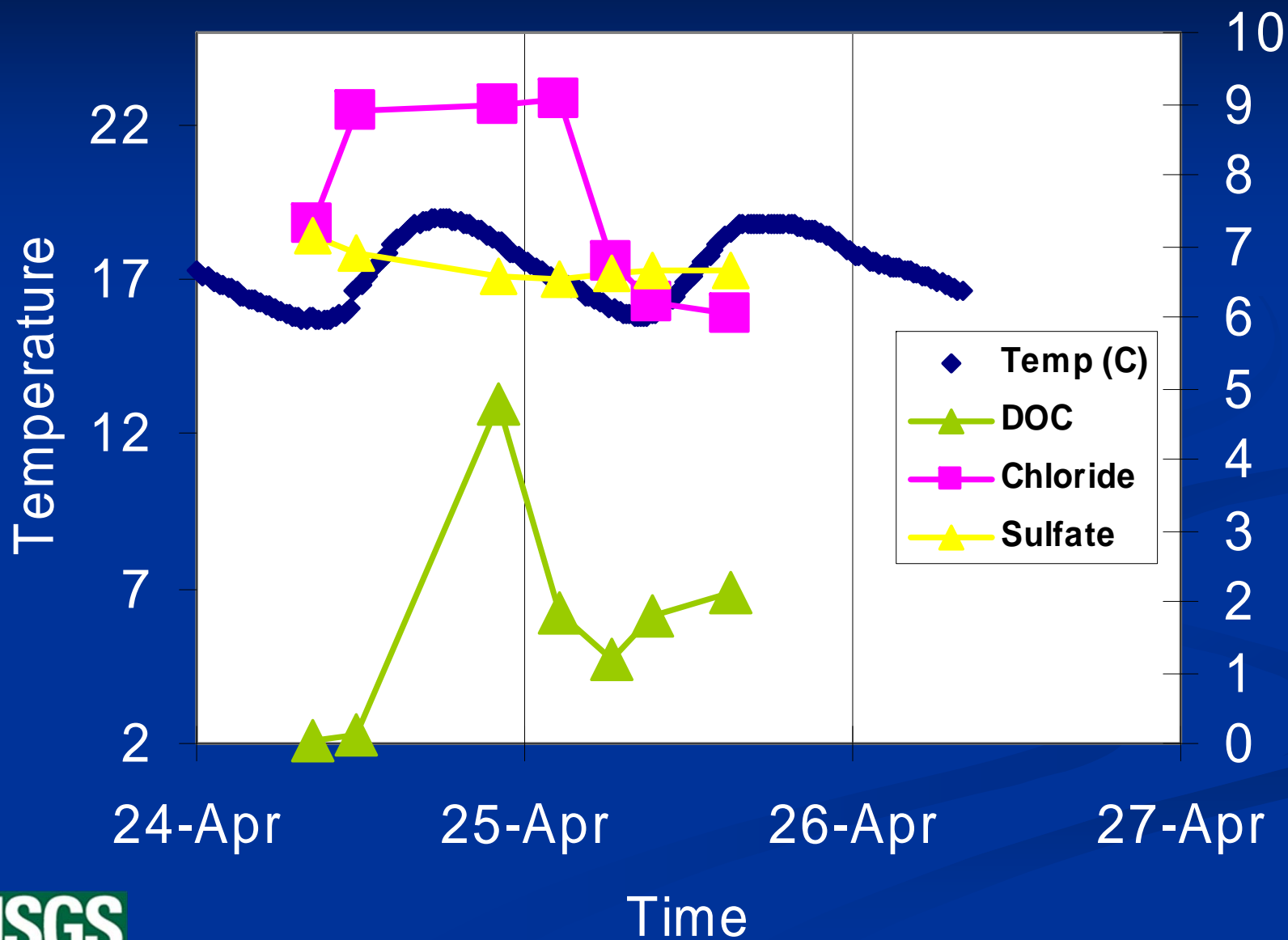
South River Diurnal Patterns



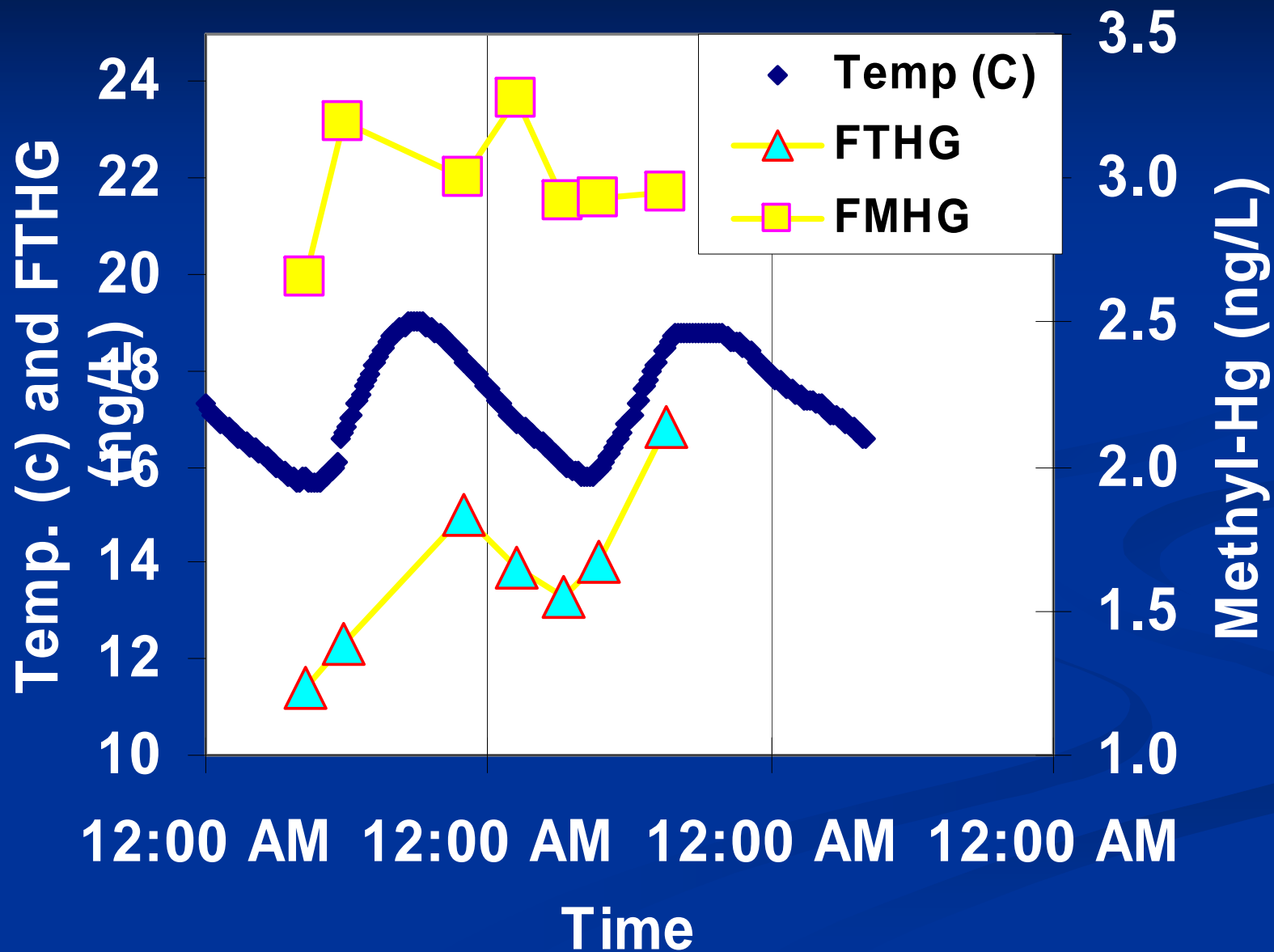
South River Diurnal Patterns



South River Diurnal Patterns

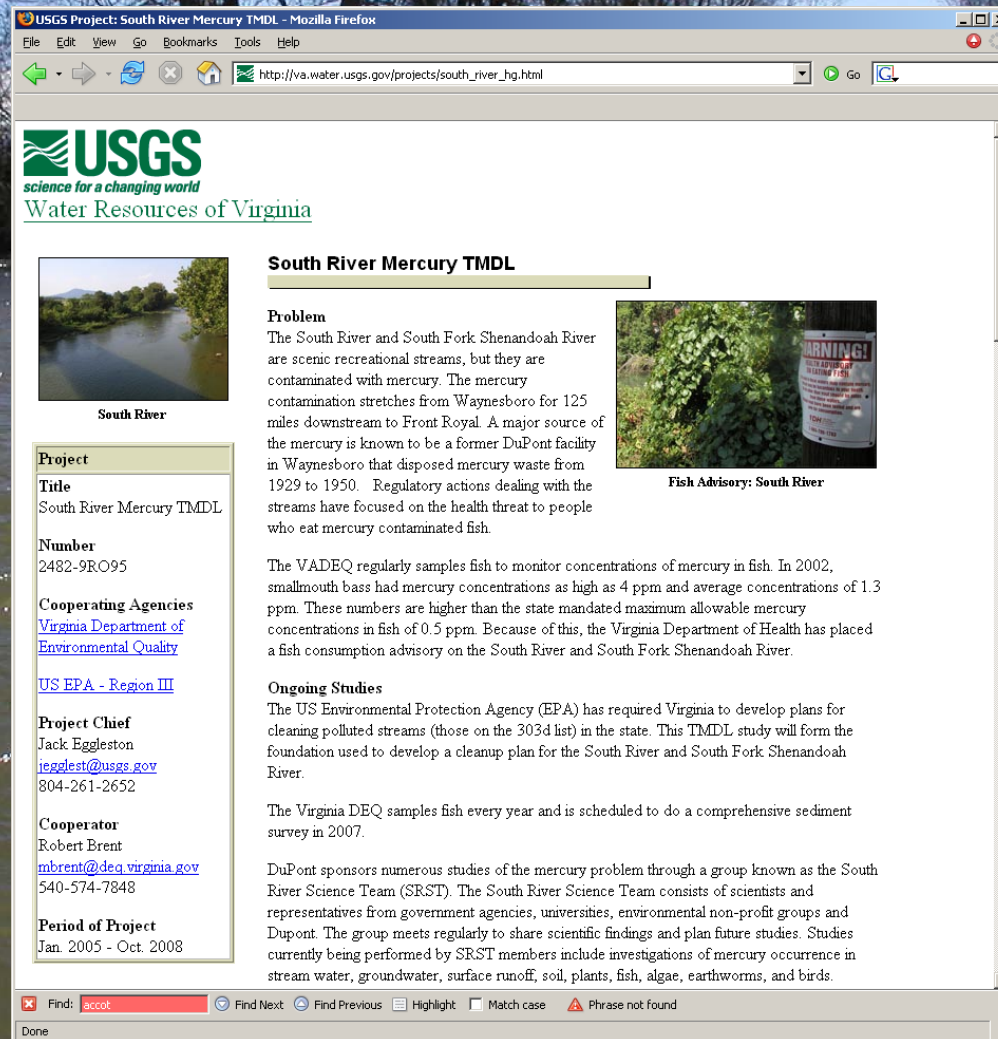


South River Diurnal Patterns



South River Mercury Webpage

http://va.water.usgs.gov/projects/south_river_hg.html



The screenshot shows a Mozilla Firefox browser window with the address bar containing the URL http://va.water.usgs.gov/projects/south_river_hg.html. The webpage content includes the USGS logo and the text "Water Resources of Virginia". The main heading is "South River Mercury TMDL".

Problem
The South River and South Fork Shenandoah River are scenic recreational streams, but they are contaminated with mercury. The mercury contamination stretches from Waynesboro for 125 miles downstream to Front Royal. A major source of the mercury is known to be a former DuPont facility in Waynesboro that disposed mercury waste from 1929 to 1950. Regulatory actions dealing with the streams have focused on the health threat to people who eat mercury contaminated fish.

Fish Advisory: South River

The VADEQ regularly samples fish to monitor concentrations of mercury in fish. In 2002, smallmouth bass had mercury concentrations as high as 4 ppm and average concentrations of 1.3 ppm. These numbers are higher than the state mandated maximum allowable mercury concentrations in fish of 0.5 ppm. Because of this, the Virginia Department of Health has placed a fish consumption advisory on the South River and South Fork Shenandoah River.

Ongoing Studies
The US Environmental Protection Agency (EPA) has required Virginia to develop plans for cleaning polluted streams (those on the 303d list) in the state. This TMDL study will form the foundation used to develop a cleanup plan for the South River and South Fork Shenandoah River.

The Virginia DEQ samples fish every year and is scheduled to do a comprehensive sediment survey in 2007.

DuPont sponsors numerous studies of the mercury problem through a group known as the South River Science Team (SRST). The South River Science Team consists of scientists and representatives from government agencies, universities, environmental non-profit groups and Dupont. The group meets regularly to share scientific findings and plan future studies. Studies currently being performed by SRST members include investigations of mercury occurrence in stream water, groundwater, surface runoff, soil, plants, fish, algae, earthworms, and birds.

Project
Title
South River Mercury TMDL
Number
2482-9R095
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[US EPA - Region III](#)
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Period of Project
Jan. 2005 - Oct. 2008

At the bottom of the browser window, a search bar shows "Find: scott" and a status bar shows "Done".