

Potomac Water-Quality Monitoring Program  
Quarterly Progress Report  
U.S. Geological Survey

Reporting Period            April 1, 2001 – June 30, 2001

Cooperating Agencies    Maryland Department of the Environment (MDE) and  
   U.S. Geological Survey (USGS)

Project Personnel

Brenda Feit Majedi, Project Chief, USGS

Southern Maryland:            Jon Evans, USGS  
Western Maryland/WV:        Jim Jeffries, USGS;  
   John Holt plus one, MDE  
Virginia:                         Rick Ahlin, USGS

Progress During Reporting Period

1. Two monthly baseflow samples were collected at all nine sites in April, and although it was planned to also collect two in May as well, only one was collected because several storm samples were collected in May at the majority of sites.

The project has collected a total of 359 samples through the end of this reporting period, which is above our proposed total for the entire year. It's for this reason that from now until the end of the water year, only major storm events will be sampled, with priority given to Zekiah Swamp Run and St. Clements Creek in Southern Maryland and Goose Creek in Virginia.

The following lists the water-quality samples that were collected during this reporting period.

***Mattawoman Creek nr Pomonkey, MD (01658000)***

A total of 11 samples were collected and analyzed for nutrient and suspended-sediment concentrations, including four monthly baseflow samples and six stormflow samples, as well as one stormflow replicate and one baseflow suspended-sediment replicate.

***Piscataway Creek at Piscataway, MD (01653600)***

A total of 11 samples were collected and analyzed for nutrient and suspended-sediment concentrations, including four monthly baseflow samples and five stormflow samples, as well as one baseflow suspended-sediment replicate and one suspended-sediment blank.

Progress During Reporting Period (continued)

***St. Clement Creek nr Clements, MD (01661050)***

A total of 17 samples were collected and analyzed for nutrient and suspended-sediment concentrations, including four monthly baseflow samples and 11 stormflow samples, including one stormflow replicate, one field blank, and one baseflow suspended-sediment replicate. This site is a high priority for sample collection during storm events.

***Zekiah Swamp Run nr Newtown, MD (01660920)***

A total of five samples were collected and analyzed for nutrient and suspended-sediment concentrations, including four monthly baseflow samples and one baseflow suspended-sediment replicate. This site is also a high priority for sample collection during storm events.

***Blacks Run at Rt. 726 at Harrisonburg, VA (01621410)***

A total of 16 samples were collected and analyzed for nutrient and suspended-sediment concentrations, including four monthly baseflow samples and 10 stormflow samples, as well as one stormflow replicate, one baseflow suspended-sediment replicate, and one suspended-sediment blank.

***Goose Creek nr Leesburg, VA (01644000)***

A total of eight samples were collected for nutrients and suspended-sediment concentrations, including four monthly baseflow samples and two stormflow samples, as well as one stormflow replicate, one baseflow suspended-sediment replicate, and one suspended-sediment blank. This site is also a high priority for sample collection during storm events.

***Potomac River at Shepherdstown, WV (01618000)***

A total of ten samples were collected and analyzed for nutrient and suspended-sediment concentrations, including four monthly baseflow samples and six stormflow samples, as well as one stormflow replicate and one suspended-sediment blank.

***Sideling Hill Creek nr Bellegrove, MD (01610155)***

A total of nine samples were collected and analyzed for nutrient and suspended-sediment concentrations, including four monthly baseflow samples and four stormflow samples, as well as one comparison of the auto sampler to the river cross section during baseflow conditions.

***Cacapon River at Great Cacapon, WV (01611500)***

A total of nine samples were collected and analyzed for nutrient and suspended-sediment concentrations, including four monthly baseflow samples and four stormflow samples, as well as one comparison of the auto sampler to the river cross section during baseflow conditions.

### Progress During Reporting Period (continued)

2. Narendra Panday received a letter from USGS modifying the Memorandum of Understanding (MOU) for the project, adding \$16,100 of USGS Federal-State Cooperative Program funds to the project. The modification does not alter the amount of MDE funding agreed to in the original MOU; that amount is maintained at \$1,009,830. With the addition of this USGS funding, the total funds available to the project are now \$1,025,930.

3. The following changes were made regarding the analysis of suspended-sediment samples collected for the project.

(a) Suspended sediment samples will be analyzed only for the sand (>0.062 mm) and fine (<0.062 mm) fractions for samples collected during selected storm events. It was originally proposed that about one-third of the samples be analyzed for the sand-fine fractions as well as for size distribution on the fine fraction at 0.002, 0.004, and 0.016 mm. However, we've recently determined that analysis of the fine fraction is not possible because the suspended-sediment concentrations at all nine river stations do not meet the minimum criteria required to perform the analysis (>1000 mg/L of suspended sediment or 0.5 to 1.8 grams of sediment, independent of sand).

(b) Beginning in June, all suspended-sediment samples for the project will be analyzed by the USGS Sediment Laboratory in Louisville, Kentucky. Selected storm samples will be analyzed for percent sand and percent fines. The decision to change from the USGS sediment lab in Iowa to the lab in Kentucky was based on the cost for analysis and shipping. Moreover, the Iowa lab was chosen initially for its ability to analyze the fine fraction of the sediment. As mentioned above, the suspended-sediment concentrations at all nine river stations are well below that required for this type of analysis; hence the services of the Iowa lab are no longer needed.

4. The Goose Creek site in Virginia wins 1<sup>st</sup> Prize in the Most-Difficult-Site-To-Install-Power contest. Significant problems and issues beyond our control such as landowner's concerns, easement and right-away issues, and the power company's internal paperwork and the like have thwarted all efforts by USGS Virginia personnel to install power at this site. It's anticipated that power will be installed by the end of August.

5. A rain gage was installed at the Zekiah Swamp Run site in May; the data can be found on the USGS real-time web page at [http://sunweb1.er.usgs.gov/rtcgi/gen\\_stn\\_pg?station=01660920&style=new](http://sunweb1.er.usgs.gov/rtcgi/gen_stn_pg?station=01660920&style=new).

6. A service engineer from Isco met with USGS personnel in Baltimore to troubleshoot ongoing sampler problems at the Southern Maryland sites.

7. Continued the development of the project web page.

### Plans for Next Quarter

1. Have the automatic sampler operational at Goose Creek; electricity should be installed by end of August.
2. Continue water-quality sample collection at all nine river stations. St. Clements Creek and Zekiah Swamp Run in Southern Maryland and Goose Creek in Virginia are all priority sites for sample collection during storm events.
3. Complete project work plan and quality-assurance/quality-control plan.
4. Coordinate concurrent sampling with MDE in southern Maryland, for data comparison purposes.
5. Complete the project web page, including initial plots of the data.
6. Begin initial draft of the project report.