VA GROUND WATER PROTECTION STEERING COMMITTEE

www.deq.virginia.gov/gwpsc

The next meeting of the Steering Committee will be Tuesday May 18, 2010

We will meet in the second floor conference room at DEQ's downtown office, 629 E Main Street, Richmond VA 23219.

For more information contact Mary Ann Massie at 804-698-4042 or email maryann.massie@deq.virginia.gov

Meeting Summary: Tuesday, March 16, 2010

Steering Committee members in attendance:
Mary Ann Massie, Department of Environmental Quality, Water Division
Jutta Schneider, Department of Environmental Quality, Waste Division
Micah Raub, Department of Agriculture and Consumer Services
George Harlow, US Geological Survey
Barry Matthews, Department of Health
Neil Zahradka, Department of Environmental Quality, Water Division

Our guests were:

Lyn Neira, SAIF Water Wells Inc.
Prashanth Khambhammettu, Papadopulos & Assoc.
Christopher Krambis, Schnabel Engineering
Steve Werner, Draper Aden
Whitney Katchmark, Hampton Roads PDC
Sandy Warner, Olver Inc. (conf. call)
Doug Phillips, SERCAP (conf. call)

Agencies not in attendance:
Virginia Department of Housing and Community Development, Virginia Department of Mines Minerals and Energy, Virginia Department of General Services/Division of Consolidated Laboratory Services, Virginia Tech Biological Systems Eng./Cooperative Extension, Virginia Department of Business Assistance, and Virginia Department of Conservation and Recreation.

Scott Kudlas, DEQ Office of Surface and Ground Water Supply Planning, was under the weather and was not able to give an overview of the ground water withdrawal permitting program's regulatory activities. His presentation will be rescheduled.

AGENCY UPDATES:

Department of Environmental Quality

Waste Division – nothing to report.

Water Division – Neil Zahradka, Office of Land Application Programs, reported on his three programs. The regulatory action proposing changes to the biosolids rules is moving forward. A Technical Advisory Committee helped DEQ craft revisions to the regulations, and the proposed revisions have been approved the State Water Control Board to begin public comment and hearings. Now, the Secretary of Natural Resources and the Governor must also approve the proposed regulations. Once this executive office approval is obtained, there will be a sixty day comment period which will include public hearings.

Amendments to the poultry regulations became effective Jan 1, 2010. End users must meet 'technical requirements' to address storage, use of litter, and record keeping – similar to requirements already in place on permitted growers. Permitted growers must have DEQ permits. End users must follow the mandatory practices outlined in the amendment but do not have to obtain a permit unless chronic deficiencies are noted.

The Reclamation and Reuse staff is working on several local projects that received stimulus funding for the installation of reclaimed water distribution systems. These projects will provide reclaimed water for a variety of purposes including irrigation, cooling, toilet flushing, car washing and fire suppression. DEQ Guidance for implementation of the Water Reclamation and Reuse Regulation and Program is now available at http://www.deq.virginia.gov/vpa/waterreuse.html

New guidance is also under development for the review and permitting of future indirect potable reuse projects.

Mary Ann Massie, Water Division – Water Supply Planning/GW Protection, reported concerns over the 2011 budget cycle and the ability to provide grants for regional water supply planning efforts. Additionally the ground water protection grant, part of the DEQ's Performance Partnership Grant, will be renegotiated early summer. The grant supports wellhead protection implementation projects among other things.

Department of Health

Barry Matthews, Office of Drinking Water, reported on several items. ODW recently reviewed the 2011 National Water Program guidance that calls for 50% of ground water based community water systems to have substantial implementation of source water protection measures in place. Virginia will not meet this expectation. However Virginia continues to make progress in implementing this voluntary program. The Olver Inc. contract for assisting small ground water based systems develop wellhead protection plans has been extended with the hope of helping more systems move toward program implementation. And the Safe Drinking Water Act Intended Use Plan outlines increased funding to the cooperative DEQ-VDH wellhead protection implementation grants.

Barry also reported more negotiations will take place regarding the Agency's use of their ground water assessment tool. A survey was taken of staff utilizing the

computer program and opportunities for improvement were noted. Barry hopes to put more time toward improving this in the future.
A list of infrastructure projects funded through the State Revolving Loan program can be found on the VDH web site.
http://www.vdh.virginia.gov/drinkingwater/financial/IntendedUsePlan.htm

Barry noted two Memorandum of Understanding documents were processed with DEQ to improve information sharing and collaborative efforts between ODW and DEQ's Water Supply Planning program and Ground Water Characterization and Withdrawal programs.

Department of Agriculture and Consumer Services
Micah Raub, Office of Pesticide Services, was attending for Jeff Rogers. VDACS staff continue to monitor developments in the Clean Water Act relating to permit requirements for pesticide applications in, over, or near waters of the US.

US Geological Survey

George Harlow announced the availability of four publications:

Simulation of Groundwater Flow in the Coastal Plain Aquifer System of Virginia **(Scientific Investigations Report 2009-5039)**, which is the result of cooperation between the USGS Virginia Water Science Center and the Hampton Roads Planning District Commission.

The groundwater model documented in this report simulates the transient evolution of water levels in the aquifers and confining units of the Virginia Coastal Plain and adjacent portions of Maryland and North Carolina since 1890. Groundwater withdrawals have lowered water levels in Virginia Coastal Plain aquifers and have resulted in drawdown in the Potomac aquifer exceeding 200 feet in some areas. The discovery of the Chesapeake Bay impact crater and a revised conceptualization of the Potomac aquifer are two major changes to the hydrogeologic framework that have been incorporated into the groundwater model. The spatial scale of the model was selected on the basis of the primary function of the model of assessing the regional water-level responses of the confined aquifers beneath the Coastal Plain.

The groundwater flow model was calibrated to 7,183 historic water-level observations from 497 observation wells with the parameter-estimation codes UCODE–2005 and PEST. Most water-level observations were from the Potomac aquifer system, which permitted a more complex spatial distribution of simulated hydraulic conductivity within the Potomac aquifer than was possible for other aquifers. Zone, function, and pilot-point approaches were used to distribute assigned hydraulic properties within the aquifer system. The good fit (root mean square error = 3.6 feet) of simulated to observed water levels and reasonableness of the estimated parameter values indicate the model is a good representation of the physical groundwater flow system. The magnitudes and temporal and spatial distributions of residuals indicate no appreciable model bias.

The report can also be accessed on the web at
http://pubs.usgs.gov/sir/2009/5039/

Mercury Loads in the South River and Simulation of Mercury Total Maximum Daily Loads (TMDLs) for the South River, South Fork Shenandoah River, and Shenandoah River: Shenandoah Valley, Virginia **(Scientific Investigations Report 2009-5076)**, which is the result of collaboration among the Virginia Water Science Center; the Virginia Department of Environmental Quality; and the U.S. Environmental Protection Agency.

Elevated levels of methylmercury in fish tissue have caused parts of the South River, the South Fork of the Shenandoah River, and the Shenandoah River to be placed on Virginia's 303(d) list of impaired waters, and the Virginia Department of Health has restricted fish consumption from these rivers. The affected rivers are: 24.63 mi (miles) of the South River from the DuPont foot bridge in Waynesboro downstream to the headwaters of the South Fork Shenandoah River; the entire 100.96 mi of the South Fork Shenandoah River; 0.67 mi of the North Fork Shenandoah River from its mouth upstream to the Riverton Dam; and 29.83 mi of the Shenandoah River from the confluence of the North Fork and South Fork Shenandoah Rivers downstream to the confluence with Craig Run.

The purpose of the report is to describe the current understanding of mercury transport in the South River watershed and to provide estimates of the mercury loading reductions needed to protect human health from risks posed by consumption of fish from the river. The area of investigation focused on the South River because the original mercury source was located there and the South River has had the highest mercury concentrations in the Shenandoah River watershed. This focus permitted a spatially intensive data-collection effort. Results from the South River are extrapolated downstream to estimate loading reductions needed to meet methylmercury fish tissue targets for the South Fork Shenandoah and Shenandoah Rivers.

The report can also be accessed on the web at
http://pubs.usgs.gov/sir/2009/5076/

A Comparison of Turbidity-Based and Streamflow-Based Estimates of Suspended-Sediment Concentrations in Three Chesapeake Bay Tributaries **(Scientific Investigations Report 2009-5165)**, which is the result of cooperation among the USGS Virginia Water Science Center; the U.S. Environmental Protection Agency Chesapeake Bay Program; and the Virginia Department of Environmental Quality.

Fluvial transport of sediment into the Chesapeake Bay estuary is a persistent water-quality issue with major implications for the overall health of the bay ecosystem. Accurately and precisely estimating the suspended-sediment concentrations (SSC) and loads that are delivered to the bay, however, remains challenging. Although manual sampling of SSC produces an accurate series of point-in-time measurements, robust extrapolation to unmeasured periods (especially high-flow periods) has proven to be difficult. Sediment concentrations typically have been estimated using regression relations between individual SSC values and associated streamflow values; however, suspended-sediment transport during storm events is extremely variable, and it is often difficult to relate a unique SSC to a given streamflow. With this limitation for estimating

SSC, innovative approaches for generating detailed records of suspended-sediment transport are needed.

One effective method for improved suspended-sediment determination involves the continuous monitoring of turbidity as a surrogate for SSC. Turbidity measurements are theoretically well correlated to SSC because turbidity represents a measure of water clarity that is directly influenced by suspended sediments; thus, turbidity-based estimation models typically are effective tools for generating SSC data. The U.S. Geological Survey initiated continuous turbidity monitoring on three major tributaries of the bay—the James, Rappahannock, and North Fork Shenandoah Rivers—to evaluate the use of turbidity as a sediment surrogate in rivers that deliver sediment to the bay. Results of this surrogate approach were compared to the traditionally applied streamflow-based approach for estimating SSC.Additionally, evaluation and comparison of these two approaches were conducted for nutrient estimations.

The report can also be accessed on the web at
http://pubs.usgs.gov/sir/2009/5165/

Outdoor Water Use and Water Conservation Opportunities in Virginia Beach, Virginia **(Fact Sheet 2010-3007)**, which is the result of cooperation among the USGS Virginia Water Science Center; the City of Virginia Beach; and Old Dominion University.

How much water do you use to water your lawn, wash your car, or fill your swimming pool? Your answers to these questions have important implications for water supplies in the City of Virginia Beach. To help find the answers, the City cooperated with the U.S. Geological Survey (USGS) and Old Dominion University to learn more about seasonal outdoor water use. In the summer of 2008 the USGS surveyed city residents and asked detailed questions about their outdoor water use. This fact sheet describes what was learned in the survey.

The amount of seasonal water use is important to the City of Virginia Beach because the primary source of this water is a fragile, shallow aquifer that is the only fresh groundwater source available within the city. Residents in the mostly rural southern half of Virginia Beach rely solely on this aquifer, not only for outdoor water uses but also for indoor domestic uses such as drinking and bathing. Groundwater that is close to the land surface in Virginia Beach is mostly fresh, whereas water 200 feet or more below the land surface is mostly saline and generally too salty to drink or use for irrigating lawns and gardens.

The on-line only fact sheet can be accessed on the web at
http://pubs.usgs.gov/fs/2010/3007/

Department of Housing and Community Development
Wyatt Little provided the following update in abstentia:

January 6, 2010 notice posted of an award of more than $4,600,000 in community development block grant (CDBG) funding to support housing rehabilitation and downtown revitalization. The grants are being awarded to fund five projects in Virginia, in the Towns of Big Stone Gap, Honaker, South Hill, in the County of York, and in the City of Emporia. Since 1982, the federally-funded

CDBG program has been administered by the Virginia Department of Housing and Community Development (DHCD), and Virginia receives up to $19 million annually for this "small cities" grant program. Currently, 284 localities in Virginia who do not receive CDBG funds directly from the federal government are eligible for VCDBG.

Meadow street Community Improvement Project	**South Hill, Town of**	**Earl O. Horne, Mayor**	**CDBG** **Local** **TOTAL**	**$930,557** **$25,735** **$956,292**
Project Description: The town will reduce substandard housing and infrastructure conditions in the Meadow Street community. The project will include the rehabilitation of eleven owner-occupied homes; the rehabilitation of six renter occupied homes; the demolition and removal of one dilapidated vacant structure; the installation of 800 linear feet of six-inch water line, 500 linear feet of two-inch water line, and 500 linear feet of water service lines; 2,495 linear feet of eight-inch sewer line, and 900 linear feet of four-inch sewer laterals, and the installation of culverts and drainage improvements. The project is expected to benefit 53 persons, 40 of whom (75%) are low-to-moderate income.				
Barlow Road Housing Preservation Project	**York, County of**	**Walter C. Zaremba**	**CDBG** **Private** **Local** **TOTAL**	**$912,400** **$152,920** **$99,380** **$1,164,700**
Project Description: The Town will address substandard housing conditions in the Barlow Road community. The project includes the rehabilitation of 12 owner-occupied houses and the substantially reconstruction of three owner-occupied homes, including installing suitable water supply systems and wastewater disposal systems for all 15 units. In addition general debris and trash removal will take place in the project area. The project is expected to benefit 26 persons, all of whom are low-to-moderate income.				

Thank you to everyone who attended the meeting. My apologies are offered once again for the short notice on our speaker's unexpected absence. I will reschedule with Scott Kudlas and let you know that date.