

**VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY**

**EASTERN VIRGINIA GROUNDWATER  
MANAGEMENT ADVISORY COMMITTEE 2023  
ANNUAL REPORT**

**TO THE HONORABLE GLENN YOUNGKIN,  
GOVERNOR, THE GENERAL ASSEMBLY, AND THE  
STATE WATER COMMISSION**

**DECEMBER 2023**

# Table of Contents

<b>EXECUTIVE SUMMARY .....</b>	<b>2</b>
<b>INTRODUCTION .....</b>	<b>2</b>
<b>MEMBERSHIP.....</b>	<b>2</b>
<b>MEETINGS .....</b>	<b>4</b>
<b>APPENDIX A - § 62.1-256.2 OF THE CODE OF VIRGINIA .....</b>	<b>6</b>

## EXECUTIVE SUMMARY

The Eastern Virginia Groundwater Management Advisory Committee (EVGMAC) was reestablished effective July 1, 2020 pursuant to legislation enacted following the 2020 Virginia General Assembly session.<sup>1</sup> The Director of the Department of Environmental Quality (DEQ) appoints members of the EVGMAC. DEQ convenes the EVGMAC at least four times each fiscal year, and during each meeting DEQ updates the EVGMAC on activities related to groundwater management in the Eastern Virginia Groundwater Management Area and solicits EVGMAC members to present topics and analysis at future meetings. DEQ prepares and submits this report of the EVGMAC's examinations to the Governor, the General Assembly, and the State Water Commission by November 1 of each year pursuant to § 62.1-256.2 of the Code of Virginia.

## INTRODUCTION

The Eastern Virginia Groundwater Management Advisory Committee (EVGMAC) was reestablished effective July 1, 2020 pursuant to legislation enacted following the 2020 Virginia General Assembly session.<sup>2</sup> The purpose of the EVGMAC is to serve “as an advisory committee to assist the State Water Commission and the Department [of Environmental Quality (DEQ)] in the management of groundwater in the Eastern Virginia Groundwater Management Area.”<sup>3</sup> The Eastern Virginia Groundwater Management Area includes all of the Commonwealth east of Interstate 95, except for the Eastern Shore, which is a separate groundwater management area.<sup>4</sup>

The first iteration of the EVGMAC was established pursuant to legislation adopted by the 2015 General Assembly.<sup>5</sup> Pursuant to the 2015 legislation, the first iteration of the EVGMAC completed its activities in 2017 and the committee's enabling legislation expired on January 1, 2018. The final report submitted by the first iteration of the EVGMAC is available on [DEQ's Eastern Virginia Groundwater Management Advisory Committee website](#).

## MEMBERSHIP

Members of the Eastern Virginia Groundwater Management Advisory Committee (EVGMAC) are appointed by the Director of the Department of Environmental Quality (DEQ) pursuant to § 62.1-

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<sup>1</sup> 2020 Va. Acts Ch. 805.

<sup>2</sup> *Id.*

<sup>3</sup> Va. Code Ann. § 62.1-256.2.

<sup>4</sup> 9VAC25-600-20 A (“The board hereby orders the declaration of the eastern part of Virginia as a groundwater management area. This area shall be known as the Eastern Virginia Groundwater Management Area. This area encompasses the counties of Charles City, Essex, Gloucester, Isle of Wight, James City, King George, King and Queen, King William, Lancaster, Mathews, Middlesex, New Kent, Northumberland, Prince George, Richmond, Southampton, Surry, Sussex, Westmoreland, and York; the areas of Caroline, Chesterfield, Fairfax, Hanover, Henrico, Prince William, Spotsylvania, and Stafford counties east of Interstate 95; and the cities of Chesapeake, Franklin, Hampton, Hopewell, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, and Williamsburg.”).

<sup>5</sup> 2015 Va. Acts Chs. 262 and 613.

256.2 of the Code of Virginia. Membership of the EVGMAC is to “be composed of nonlegislative citizen members consisting of representatives of industrial and municipal water users; representatives of public and private water providers; developers and representatives from the economic development community; representatives of agricultural, conservation, and environmental organizations; state and federal agency officials; and university faculty and citizens with expertise in water resources-related issues.”<sup>6</sup>

Pursuant to § 62.1-256.2 of the Code of Virginia in September 2020 the DEQ Director appointed the following persons and organization representatives to serve as members of the EVGMAC:

Martha Moore – Farm Bureau

Stephen Schoenholtz – Virginia Water Resources Research Center

Kurt Stephenson – Virginia Tech

Hope Cupit – Southeast Rural Community Assistance Project, Inc.

Robert Wayland – Citizen at large

Robert Pickett – Virginia Association of Soil and Water Conservation Districts

Keith Martin – Virginia Chamber of Commerce

Anna Killius – James River Association

Peggy Sanner – Chesapeake Bay Foundation

Nina Butler – WestRock Company

Stewart Leeth – Smithfield Foods, Inc.

Andrea Wortzel – Mission H2O

Kellan Singleton – Accomack-Northampton Planning District Commission

David Jurgens – City of Chesapeake

Christopher Miller – King George County

Doug Powell – James City Service Authority

Al Moor – Western Tidewater Water Authority

Jay Bernas – Hampton Roads Sanitation District (HRSD)

John Aulbach – Aqua Virginia

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<sup>6</sup> Va. Code Ann. § 62.1-256.2.

John O'Dell – Virginia Water Well Association

Chief Stephen Adkins – Chickahominy Tribe

Commissioner or Designee – Virginia Department of Health (VDH)

Mark Bennett – U.S. Geological Survey (USGS)

John Loftus – Virginia Economic Development Partnership (VEDP)

## MEETINGS

The Department of Environmental Quality (DEQ) is to convene meetings of the Eastern Virginia Groundwater Management Committee (EVGMAC) at least four times each fiscal year.<sup>7</sup> During each meeting, DEQ is required to “(i) update the [EVGMAC] on activities pertaining to groundwater management in the Eastern Virginia Groundwater Management Area and (ii) [to] solicit members to present topics and analysis for examination at future meetings.”<sup>8</sup> The first meeting of the EVGMAC in the fiscal year covered by this report took place on July 14, 2022 with additional meetings held on March 23, 2023, May 2, 2023, and June 15, 2023.

The July 14, 2022 meeting engaged the committee with an update on the Hampton Roads Sanitation District’s (HRSD) Sustainable Water Initiative for Tomorrow (SWIFT) project, which was requested by committee members at a previous meeting. The presentations from Jamie Mitchell and Dan Holloway of HRSD comprised the entire agenda for this meeting. Ms. Mitchell’s presentation focused on the federal Underground Injection Control (UIC) permitting for the first full scale project and the technical aspects associated with the injection of large volumes of water into the Potomac aquifer. There was significant discussion about the conditions related to PFOA and PFAS compounds, the recommended permit changes HRSD has proposed in response, and the rationale for these recommendations. The hydrogeologic presentation, provided by Mr. Holloway, updated the committee on design and operational changes made to the full-scale injection wells to improve the long-term ability to avoid well and aquifer clogging.

The March 23, 2023 meeting featured Brian Campbell (DEQ Groundwater Characterization and Monitoring Manager), who provided the committee with an overview of the history behind the need for large scale groundwater monitoring in Virginia and Dr. Greg Connock from the United States Geologic Survey (USGS) Virginia-West Virginia Water Science Center, who presented a talk about the Virginia Extensometer Network. Mr. Campbell discussed the need for and importance of the State Observation Well network to monitor groundwater levels, hydrogeologic framework updates, modeling simulations of groundwater levels, refurbishing existing extensometers in addition to installing additional extensometers, and obtaining land elevation measurements from leveling stations and satellite data. He noted that collecting this evidence requires a sustained

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<sup>7</sup> *Id.*

<sup>8</sup> *Id.*

commitment of resources and cooperation across organizations, and also requires a sustained effort to build support for the resources required to collect data. Mr. Campbell concluded with an acknowledgement that the EVGMAC's recommendation was instrumental in securing approvals and \$7.5 million in funding for the West Point Extensometer and expansion of Virginia's network of State Observation Wells.

Dr. Connock provided the committee with a presentation detailing the Virginia Extensometer Network, including the currently under construction West Point extensometer. This installation will expand the network of extensometers in Virginia to four and is the only network of its kind on the east coast. The extensometers measure vertical land movement that results from aquifer system compaction due to changes in groundwater levels and from historical glaciation. There are four extensometers in Virginia's network, including the Franklin extensometer, the Suffolk extensometer, the Nansemond extensometer, and the West Point extensometer, which will be operational in 2024. Each of these extensometers is near major sources of groundwater withdrawals or in areas of substantial groundwater decline. Dr. Connock concluded with an acknowledgement of the various agencies and collaborators working together on this project, including DEQ and HRSD.

During the May 2, 2023 meeting Todd Wood from Aquaveo joined the meeting virtually from Utah to inform the committee about the results of updating the Coastal Plain Groundwater Model and the Eastern Shore Groundwater Model with 2021 reported use data. Committee members asked for clarification about who reports the chloride concentrations used in the model. Joe Grist from DEQ responded that when Technical Evaluations are received, monitoring requirements are added for facilities if an increase in chloride is shown. Committee members asked if the annual model reports include observed water levels in aquifers. Mr. Wood replied that they are not in the annual reports, but aquifer water levels are reported when the models are recalibrated.

The June 15, 2023 meeting led off with Jason Pope from the USGS providing a presentation on The Virginia Eastern Shore Groundwater Model. His presentation included Eastern Shore Hydrogeology and Groundwater Conditions and updates to the Hydrogeologic Framework, including Paleochannels. The presentation also included water balance estimates and reported withdrawal data summaries. Several questions by the committee were answered. This talk was followed by Matt Kearns from the USGS, who provided a presentation on Domestic Water Withdrawal Estimates for Aquifers of the Coastal Plain. His presentation included an overview of groundwater use in the Virginia Coastal Plain estimates by use type, including Public Supply, Domestic Use, Industrial Use, Irrigation, Thermoelectric Use, and Mining. Spatial distribution and seasonal variation were also discussed.

## APPENDIX A - § 62.1-256.2 OF THE CODE OF VIRGINIA

§ 62.1-256.2. (Expires July 1, 2025) Eastern Virginia Groundwater Management Advisory Committee established; sunset.

A. The Department of Environmental Quality (the Department) shall establish the Eastern Virginia Groundwater Management Advisory Committee (the Committee) as an advisory committee to assist the State Water Commission and the Department in the management of groundwater in the Eastern Virginia Groundwater Management Area. Members of the Committee shall be appointed by the Director of the Department and shall be composed of nonlegislative citizen members consisting of representatives of industrial and municipal water users; representatives of public and private water providers; developers and representatives from the economic development community; representatives of agricultural, conservation, and environmental organizations; state and federal agency officials; and university faculty and citizens with expertise in water resources-related issues. The Department shall convene the Committee at least four times each fiscal year. Members of the Committee shall receive no compensation for their service and shall not be entitled to reimbursement for expenses incurred in the performance of their duties.

B. During each meeting of the Committee, the Department shall (i) update the Committee on activities pertaining to groundwater management in the Eastern Virginia Groundwater Management Area and (ii) solicit members to present topics and analysis for examination at future meetings. The Committee may develop specific statutory, budgetary, and regulatory recommendations, as necessary, to enhance the effectiveness of groundwater management in the Eastern Virginia Groundwater Management Area.

C. The Department shall annually report the results of the Committee's examinations and related recommendations, and any responses from the Department, to the State Water Commission, the Governor, and the General Assembly no later than November 1 of each year.

D. The provisions of this section shall expire on July 1, 2025.