



Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

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**EASTERN VIRGINIA GROUNDWATER MANAGEMENT ADVISORY
COMMITTEE AND THE DEPARTMENT OF ENVIRONMENTAL
QUALITY**

September 30, 2026

10:00 am

MEETING MINUTES

Committee Members Present	
Dana Adkins – Chickahominy Tribe	Whitney Katchmark – Hampton Roads Planning District Commission
John Aulbach – Aqua Virginia	Kamryn Peffley – Franklin Mill
Ethan Betterton – Virginia Chamber of Commerce	Robert Pickett – Va Association of Soil & Water Conservation Districts – Northern Neck SWCD
Jason Early – Stantec	Doug Powell – James City County Service Authority
Mike Gerel – Chesapeake Bay Foundation	Jonathan Rak – Virginia Department of Environmental Quality
Dan Holloway – Hampton Roads Sanitation District (HRSD)	Jake Tabor – Virginia Farm Bureau
Brent Hunsinger – Friends of the Rappahannock	Andrea Wortzel – Mission H2O

Committee Members' Alternates or Designees Present	
Anthony Creech (Alternate for Dr. Karen Shelton) – Virginia Department of Health (VDH)	Vicki Smith (Alternate for Bob Carteris) – City of Norfolk
Shannon Orcutt (Designee for Tom Dunlap) – James River Association	Michael Stites (Designee for David Jurgens) – City of Chesapeake Utilities
Izy Ozmon (Alternate for Whitney Katchmark) – Hampton Roads Planning District Commission	Jim Taylor (Alternate for Nina-Mary Butler) – WestRock
Shannon Varner (Alternate for Andrea Wortzel) – Mission H2O	Lewis Walker, III (Alternate for Robert Pickett) – Northern Neck SWCD
Jenny Reitz (Alternate for Dan Holloway) – HRSD	

The following committee members were absent from the meeting: Mark Bennett – USGS; Cathy Binder – King George Service Authority; Rita Chandler – Accomack-Northampton Planning District Commission; Andrew Clarke – Home Builder Association of Virginia; Joey Hiner Southeast Rural Community Assistance Project, Inc. (SERCAP); Eric Lasalle – Smithfield Foods, Inc.; John O’Dell – Virginia Water Resources Research Center; Paul Retel – City of Suffolk & Western Tidewater Water Authority; and Robert Wayland – Citizen-at-Large

Technical Support Staff Present	
Brandon Bull – DEQ	Liz McKercher – DEQ
Cecil Byles – DEQ	Craig Nicol – DEQ
Brian Campbell – DEQ	James Peed – DEQ
Weedon Cloe – DEQ	Nicole Reungoat – DEQ
Morgan Emanuel – DEQ	Eric Seavey – DEQ
Heather Esposito – DEQ	Sadeya Tashnia – DEQ
Sam Jasinski – DEQ	Ben Wojcicki – DEQ
Caitlin Kelly – DEQ	

Interested Parties	
Ken Bannister - KBJW	Callie Guy – Christian & Barton
Stephanie Collins – Troutman Pepper Locke	Preston Kirby - VDH
Dan Hamilton - KGCSA	Charles Paullin - VCIJ
Gabriel Irigaray - Dominion Energy	

Meeting Notes

Welcome and Introductions:

Mr. Weedon Cloe, Manager of the DEQ Office of Water Supply, welcomed members to the second meeting of the Eastern Virginia Groundwater Management Advisory Committee (EVGMAC) for the state fiscal year 2027 (FY2027). He thanked everyone for attending and went over some housekeeping items, including location of facilities and emergency evacuation procedures. Mr. Cloe went over the planned meeting agenda outline and available handouts. The committee approved the draft agenda as presented.

Handouts:

- Agenda
- 6/17/2026 & 8/26/2026 Meeting Minutes

Meeting Agenda:

Mr. Cloe went over the planned meeting agenda outline.

1. Welcome and Introductions.
2. Review and Approval of 09/20/2026 Agenda.
3. Review & Approval of the 06/17/2026 & 08/26/2026 Meeting Minutes
4. DEQ Updates - Weedon Cloe.
 - a. Update on Legislation from 2026 General Assembly Session – Liz McKercher
 - b. Update on Groundwater Modeling – Brian Campbell
 - c. Update on Permit Renewal Strategy – Jonathan Rak
5. Discussion of EVGMAC Annual Report - Brandon Bull
6. Review & Discussion of SJ25 Report Recommendations – Brandon Bull
7. Break for Lunch (45 minutes)
8. Workplan Module 1 Presentation: MAR Examples & Discussion – Jonathan Rak
9. New Business – Round Robin
10. Public Comment Forum (not to exceed 30 minutes, speakers will each be allotted three minutes for public comment.
11. Next Meeting.
12. Wrap Up.

Approvals:

- **Agenda:** The committee approved the tentative agenda as presented.

Presentation: Weedon Cloe, Manager, Office of Water Supply *DEQ Updates*

Mr. Cloe began by giving an update on the Drought Conditions in Virginia. Drought conditions have gradually improved over the last few months; however, concern is ongoing for the conditions in the Roanoke region. Streamflow, groundwater, and water levels in several reservoirs remain below normal, driven by long-term precipitation deficits in central and southcentral areas of the state. The water year ends on September 30, 2026, and a new water year begins October 1, 2026.

A committee member asked if DEQ had seen an increase in reported use. DEQ staff have not.

Mr. Cloe introduced Liz McKercher, Director of Water Planning, to give an update on Water Supply Budget Bill Initiatives. Ms. McKercher shared a list of the directives required of DEQ by the General Assembly (GA). DEQ is required to provide a report on the challenges to the groundwater supply in western Loudon and Fauquier counties to the GA by December 31, 2026. DEQ must also conduct and provide a plan for retrofitting existing data centers within the Eastern Virginia Groundwater Management Area (EVGMA) to transition to: air cooling systems; 100% recycled water and/or stormwater for cooling; or closed loop cooling systems by October 15, 2026. Additionally, beginning January 1, 2027, data centers proposed within the Eastern Virginia

Management seeking an air permit must demonstrate that cooling water use has been minimized. *(Additional note: this will not be done in the air permit, the fact that the data center needs an air permit is just the threshold that triggers the requirement.)* Lastly, By July 1, 2027, DEQ will have amended the Local and Regional Water Supply Planning Regulations (9VAC25-780), with criteria for water scarcity areas. DEQ has been allocated funding for new groundwater wells, with up to five additional multi-well research stations to be installed in the northern portion of the Eastern Virginia GWMA (portions of Stafford, Prince William, and Fairfax counties). DEQ is also working with Virginia Tech to conduct an Aquifer Recharge Feasibility Study. Budget language requires a report to be completed by July 1, 2027; however, the language also provides funding for a second year of study.

A committee member noted that Executive Order 22 designated the Eastern Virginia Groundwater Management Area as a cooling water scarcity area. Another committee member asked if, as part of the western Loudon and Fauquier studies, DEQ will be making any recommendations. Ms. McKercher explained that DEQ will either make a recommendation, or depending on the results of the study, identify areas where gaps in the data exist that require more study. Ms. McKercher also clarified that the Aquifer Recharge study would be within the EVGWMA.

Ms. McKercher then moved to discussing funding for Local and Regional Water Supply Planning. There are currently 25 regional planning areas developing plans, which are due by October 9, 2029. All of the grants for FY26 have been issued. FY27 state budget has allocated \$981,000 in both FY27 and FY28 (Item 366 I); grant applications were accepted from July 20 through August 14, 2026 and the 22 applicants have received notifications of their awards.

Lastly, Ms. McKercher gave an update on changes to Water Withdrawal Reporting. Senate Bill 553 requires more detailed water withdrawal reporting, including; detailing if water is potable or reclaimed and breaking the reporting down by specific categories (data centers, domestic, commercial, and industrial uses). DEQ has held stakeholder listening sessions and is working on reporting database updates and revising the reporting form. DEQ also has tentative plans for a Webinar in mid-October to discuss the changes. A committee member noted that many data centers may receive water from entities that are not required to report their water withdrawals and therefore may not be subject to this new statutory requirement. . If a facility is not currently subject to reporting requirements, nothing in the senate bill requires them to begin reporting.

Mr. Cloe introduced Brian J. Campbell, P.G., Groundwater Characterization and Monitoring Manager, to give Groundwater Updates. The Senate Joint Resolution No. 25 (2024) report on groundwater supply east of Interstate 95 was released over the summer and can be found on DEQ's website. DEQ is expanding its Chloride Monitoring Network to add up to 19 new State Observation Wells (SOWs) to the existing network of seven (7). Two new wells have been added to date; one in Newport News Park and one at James River Bridge. A second well will be added at the James River Bridge. The wells are designed to characterize and monitor the freshwater-saltwater interface in the confined aquifer system and are being constructed in cooperation with the USGS Research Drilling Program. The SOWs are funded by special appropriation from the 2022 General Assembly.

Mr. Campbell then gave an update on the monitoring network around the planned SWIFT injection site at the James River Treatment Plant (JRTP). Mr. Campbell shared a map showing a 2024 assessment of the observation wells in the area. Since the 2024 network assessment, DEQ has established a perimeter of real-time groundwater-level observation wells in the Potomac aquifer around JRTP. West of JRTP, six SOWs have been upgraded from quarterly to real-time monitoring. North of JRTP, Newport News Park SOW 171G was installed to replace the compromised SOW 171A. South of JRTP, SOW 274A was installed at James River Bridge; SOW 274B is planned for October 2026. High-quality groundwater-level data will support real-time monitoring of SWIFT effects and calibration of future models.

A committee member asked for clarification that none of the wells were drilled into the bedrock aquifer, and that they were all Potomac Aquifer wells.

Lastly, Mr. Campbell covered Virginia Coastal Plain Groundwater Flow Modeling Updates. DEQ and Aquaveo modeling efforts are ongoing. Domestic groundwater withdrawal conditions have been updated based on a recent USGS publication, and a new analysis of residuals to validate model performance has been conducted. New simulations of various SWIFT injection scenarios are in development to inform future withdrawal permitting strategy.

Mr. Jonathan Rak, DEQ Deputy Director, gave an update on the agency's Permit Renewal Strategy. Nine of the largest permittees in the EVGWMA are going to be up for renewal in the next year and DEQ is working on a strategy to review and process the renewals. One part of the strategy is to look at the renewals on a more holistic level. DEQ will be using the newest Aquaveo modeling, which includes SWIFT injections, to help with decision making during this renewal cycle. The permits will have conditions that address the possibility of SWIFT benefits are not realized as projected.

A committee member asked for clarification on what it means to review the renewals holistically. Mr. Rak explained that not all renewals will be decided at the same time, but that DEQ was putting together a comprehensive strategy to make sure the renewals are reviewed on a consistent basis.

Mr. Brandon Bull, Director, Division of Policy, gave an update on the annual EVGMAC report. The report is a summation of the work that the committee has done over the past fiscal year, which runs from July 1 to June 30. In 2024 the annual report was folded into DEQ's annual consolidated report. The report will cover the activity of the committee through the June 17th meeting and will include both the workplan to study MAR and the full text of the resolution calling for the release of SJ25. Full meeting minutes are not included in the report.

Committee members requested that they be allowed the opportunity to review the report in the future, as well as requesting that the report note that the committee did not review the report for this year.

Mr. Bull next led a discussion on the policy recommendations contained in SJ25. Topics of discussion and associated questions included;

- Two of the recommendations, reducing permitted withdrawals when alternatives are available and the prioritization of human consumption, are issues that have been around for some time. Has DEQ considered a new advisory committee, or is there any example of how DEQ would address any potential changes?
 - What the report was trying to flag on the topic of human consumption was that the Groundwater Management has language prioritizing groundwater for human consumption, but there is no language dictating how to operationalize that, as well language in the act about protecting existing users. If there are members of the group with ideas on how prioritization can take place, that is a conversation worth having.
- Whether DEQ has put together language to implement these recommendations, or is anticipating the administration trying to advance the recommendations.
 - DEQ is still in the early stages of the legislative process, and does not have a definitive idea of what legislation will be proposed by the governor's office.
- There are nine (9) permits that will be up for renewal this year, two (2) of which are for paper mills, which are considered industrial consumption. The report notes that 35% of the groundwater use is industrial consumption. Is there intention to address the fact that that is not human consumption, but it is the largest user of the groundwater supply?
 - That is part of the renewal strategy DEQ is developing to meet the demands of the aquifer.
- Different sections of the Aquifer behave differently, meaning that where a withdrawal comes from is important. Good work has been done to stabilize the aquifer and make sure there is sufficient water for all beneficial uses.
- The goal of the Groundwater Management Act is to satisfy all beneficial uses. Human consumption is prioritized when there is a water conflict, and it is not clear that we are at the point where there is a conflict. For that reason, some of DEQ's legislative recommendations, which are focused on translating regulation to statute, wouldn't really change the Groundwater Management Act. One area that is identified in the report as an open question is unpermitted withdrawals, which continue to grow. That seems like an opportunity to address unpermitted withdrawals to have an impact.
- DEQ permits do not have to be issued for 15-year periods; while they can be issued for up to 15 years, DEQ could issue permits for shorter time frames. There are tools to address human consumption that haven't been considered.
- Private domestic wells are not subject to DEQ regulations. Decisions on land use and development are made at the local level. DEQ doesn't have the authority to influence development. The General Assembly included in every locality's comprehensive plan the availability of water in the aquifer for private domestic wells, and take those limitations into account when making decisions.
- In a scenario where a water supplier asks to modify a permit to accommodate growth, and is told no, the developer can go to VDH and ask to drill wells. This dilutes the ability of the water supplier to add customer bases and protect water supply.

- There is a provision in the Groundwater Management Act that any developer proposing 30 or more private wells must receive a technical evaluation from DEQ. This evaluation is not binding, however.
- The committee should look into tightening the provision requiring 30 wells to close that loophole and make the evaluation binding.
- The committee represents a wide cross-section of water users, and is well suited to help develop a recommendation.
- The Groundwater Management act does not specify prioritizing drinking water, but human consumption, which is not well defined. Human consumption and industrial consumption are, to a degree, linked to each other. The USGS report should give us a better understanding of unpermitted domestic use.
 - While human consumption is not defined in the Code of Virginia, it is defined in the Virginia Administrative Code. Human consumption is water to support human survival and health, including drinking, bathing, showering, cooking, dishwashing and maintaining hygiene.
- Mission H2O provided written comments on the legislative recommendations from the SJ25 report. One recommendation was to consider ways to strengthen the role of the committee; should the body be made permanent.
- The responsibility should be more on the developers to help develop a community.
- How effective has the subdivision provision been, and how can we strengthen it?
- VDH permits private wells, however, it is limited in its oversight to construction standards and locations. Water quality testing is left up to the owner. The Department of Health would support moving towards getting more control over domestic water use on a public health basis.
- There is a growing push of domestic water users connecting to public water supply due to concerns related to PFAs.
- It might help the committee if what limited information DEQ has on private well water quality could be circulated.
- A home drilled well is tested for potability once, unless a homeowner requests that more testing be done.
- The price of testing wells causes the data set to skew towards wealthier individuals.
- In a given year 10% of the private wells tested exceed the EPA's standard for lead.
- One of the reasons that private well owners do not connect to public water supply is because they do not want a water bill. Education on how much a private well is driving energy bills is important.
- One of the recommendations listed in SJ25 is to increase permit fees to cover 50% of the program cost. Without more context, it will be hard for the committee to respond to that recommendation.
 - The report recommended additional funding for one full time equivalent (FTE) to coordinate, analyze, and act on data on groundwater withdrawals (including unpermitted, two FTEs for the compliance program, two FTEs to improve

- characterization of the coastal plain aquifer, and \$45,000 to purchase real time monitoring equipment.
 - Many DEQ programs are required to be paid for by permit fees in the regulatory statutes.
 - Most of DEQ fees are set in statute, so any type of fee increase would require legislative action.
- A model is only as useful and accurate as the data that is being input, is there an idea of the cost and budget to keep the model updated, possibly through annual model recalibration?
 - Historically one of the challenges that DEQ is facing is that the data is being collected at a pace where it cannot be indexed and transmitted to USGS efficiently.

The committee broke for lunch.

Presentation: When the committee reconvened, Mr. Rak led a discussion of Module 1 of the Workplan for Managed Aquifer Recharge (MAR). The first step of module 1 was to identify similar examples of MAR and supported withdrawals. The next step was to compare selected examples of hydrogeological conditions of Potomac Aquifer and then compare legal framework of selected examples to Virginia law. The last step is to present plans for SWIFT and updates on status and schedule.

The first example discussed was in Orange County, California. Beginning in the 1970s, the Orange County Water District (OCWD)'s MAR program began utilizing reclaimed water for groundwater injections to stabilize supply and prevent seawater intrusion in the semi-confined Orange County Basin. To date, OCWD has stored over 160 billion gallons through groundwater percolation and direct injection.

The second example was in Hilton Head, South Carolina. In 2011, the Hilton Head Public Service District constructed an Aquifer Storage & Recovery Well (ASR) over the middle Floridan Aquifer. In the winter months, treated Savannah River surface water is bought from a nearby Water & Sewer Authority at a reduced wholesale price and injected into the ASR well. During its operations the ASR well has stored and recovered over 2.5 billion gallons of water.

The third example is located in Perth, Western Australia. The Australian state of Western Australia oversees the Water Corporation, which is the state's principal supplier of water and wastewater service. In Western Australia, groundwater is the largest source of water for both private and public sectors. Most sources are fully allocated. In 2017, the Water Corporation's Groundwater Replenishment Scheme began to treat wastewater prior to injecting it into two deep, confined aquifers under Perth (the Leederville and Yarragadee Aquifers.) Currently, the Scheme has the capacity to recharge 28 billion liters per year into the underlying aquifers. As of 2025, the Scheme has cumulatively injected over 100 billion liters. The Scheme supports the replenishment of groundwater resources, increases supply, and lowers Western Australia's dependence on rainfall.

Committee Member Andrea Wortzel of Troutman Pepper Locke, representing Mission H2O, gave a brief presentation on three additional examples of MAR in Florida, New Jersey, and North Carolina. Ms. Wortzel gave an overview of each state's program before comparing the scientific and technical consensus on safety and reliability, the protection of the public right to groundwater,

how groundwater rights were allocated, legislative authorization, and the compensation to parties providing recharge.

Mr. Rak led a discussion on the topic of MAR. Topics of discussion and associated questions included;

- A committee member asked how permitted use of a public resource could be traded, and asked that DEQ staff look into how this functions in the states with listed examples. Ms. Worztel noted that many of the entities doing the trades were the facilities doing the injections.
- Another committee member asked for staff to look into if actual use was close to permitted use in the areas with MAR.
- Stantec has some connections to MAR in Florida.
- As the program in California has been going to the longest, it would be helpful to get their perspective, as well as just the general western experience is, despite not being riparian.
- How do North Carolina and New Jersey determine resource availability compared to our technical evaluations?
- The scope of the examples?
 - Most of the programs have a designated area, and the ASR did have area constructs on where the benefit would reach. Where there were permit transfers that were authorized, they would look at where they were in relation to each other to ensure there were no adverse effects.
- What treatments do states require of the water before it is injected.

The committee will discuss Module 2 at the next meeting.

New Business – Updates and/or Topics of Interest from Committee Members:

Mr. Cloe went around the room and asked if there were any questions, updates, or topics of interest from the Committee Members.

- When looking at MAR examples to compare to SWIFT, it is important not to exclude ASR, as that stored water will remediate some native groundwater pull.
- Committee members discussed the idea of having the committee meet on a more frequent basis.
- It may be helpful to add Virginia to the chart comparing MAR that Mission H2O provided.
- DEQ is issuing new Environmental Justice permitting guidance, with a public comment period running through October 23rd.
- Maryland and Anne Arundel have an MAR program similar to SWIFT that has been running for 5 years. The MAR happened as a result of grassroots campaign, and Maryland will be injecting into aquifers soon.
- The Potomac River roundtable meets on Friday October 9th, and the agenda will include Fauquier counties response to the drought and presentation on the hydrogeology of the Potomac Basin.
- VDH has seen an uptick in well repairs.
- DEQ staff are working on updating the membership of the EVGMAC, and request that any roster updates be conveyed to staff.

- Committee members voted to defer approving the meeting minutes for the 06/17/2026 and 08/26/2026 meetings to allow members time to review them.

Public Input Forum: Mr. Cloe asked if there was any public input. No comments were received.

Next Committee Meeting:

Committee members discussed the possibility of holding the next meeting virtually or in person. The next meeting of the EVGMAC will be held on December 1, 2026, at 10:00 a.m. in person at Bank of America Building 3rd Floor Conference Room 1111 E. Main Street Richmond, VA 23219

Adjournment:

Mr. Cloe noted that all relevant material from meetings, including the meeting agenda, would be posted on Townhall. He thanked all the members of the committee, the interested public, Mr. Jonathan Rak, Mr. Brian Campbell and Mr. Brandon Bull for their presentation and closed the meeting. The meeting was adjourned at approximately 12:32 p.m.