

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

**Bank of America Building – 3<sup>rd</sup> Floor Multipurpose Meeting Room  
1111 East Main Street, Richmond, VA 23219**

**June 26, 2024  
10:30 AM**

**DRAFT MEETING MINUTES**

<b>Committee Members Present</b>	
Dana Adkins – Chickahominy Tribe	Dr. Kevin McGuire – Va Water Resources Cent
John Aulbach -Aqua Virginia	John O’ Dell – Va Well Drillers Assoc.
–Ethan Betterton – Chamber of Commerce	Robert Pickett NN SWCD
Dan Holloway – Hampton Roads Sanitation District (HRSD)	Doug Powell – James City County (JCC) Service Authority
Stewart Leeth – Smithfield Foods	Jake Tabor – Virginia Farm Bureau
Whitney Katchmark – Hampton Roads Planning District Commission (HRPDC)	Jason Early - Stantec
Joey Hiner – Southeast Rural Community Assistance Project, Inc. (SERCAP)	Andrea Wortzel – Mission H20

<b>Committee Members’ Alternates Present</b>	
Chris Pomeroy (Alternate for Paul Retel)	City of Suffolk & Western Tidewater Water Authority

*The following committee members were absent from the meeting:; Mark Bennett – USGS; Nina-Mary Butler – WestRock; Andrew Clark – Home Builders Association of Virginia; John Loftus – VA Economic Development Partnership/VDOT; David Jurgens – City of Chesapeake; Chris Moore – Chesapeake Bay Foundation; Paul Retel – City of Suffolk & Western Tidewater Water Authority; Mike Rolband – DEQ; Dr. Karen Shelton – VDH; Kellan Singleton – Acc-Northampton PDC; Kurt Stephenson – Virginia Tech; Nathan Thomson – James River Association; Robert Wayland – Citizen-at-Large; & Bruce Young – VA Department of Wildlife Resources.*

<b>Technical Support Staff Present</b>	
Brian Cambell - DEQ	Jeanette Ruiz - DEQ
Kati Burton - DEQ	Liz McKercher - DEQ
Sam Jasinski - DEQ	Scott Morris - DEQ

Weedon Cloe - DEQ	Gouri Mahadwar - DEQ
Morgan Emanuel - DEQ	Brendan Brogan - DEQ
Tony Cario - DEQ	Eric Seavey - DEQ
Preston Varby - VDH	

Interested Parties	
Aqualaw – Nathan Pomeroy	Tauxemont Community Association – John Culberston
Virginia Tech/PARML – Mark Widdowson	Tauxemont Community Association - Glenda Booth
HRSD – Jamie Mitchell	Tauxemont Community Association – Robert J. Surovell
Virginia Mercury - Charlie Paullin	Virginia Agribusiness Council – Brad Copenhaver
Senator Deeds Office Luke Goodman	KBJW – Ken Baaurster

### Meeting Notes

#### Welcome and Introductions:

Mr. Weedon Cloe, Manager of the DEQ Office of Water Supply, welcomed members to the fourth meeting of the Eastern Virginia Groundwater Management Advisory Committee for FY2024. He thanked everyone for attending today’s meeting. He identified the available handouts for today’s meeting.

#### Handouts:

- Agenda,
- Draft Minutes/Notes for the April 23, 2024, EVGWMAC Meeting,
- Presentation - Eric Seavey, DEQ Office of Water Withdrawal Permitting Manager – *“Updates to Groundwater Withdrawal Permit Application Process”*
- Brian Campbell, P.G. DEQ Groundwater Characterization and Monitoring Program Manager - *“State Observation Well Abandonment”*

He went over some housekeeping items, including location of facilities and emergency evacuation procedures. He introduced new DEQ staff to the committee. He also introduced the newest member of the committee, Dr. Kevin McGuire from the Va Water Resources Center. He gave an update on the roster for the committee, which is, as of the date of the meeting, being reviewed by Director Rolband.

#### Meeting Agenda:

Mr. Cloe went over the planned meeting agenda outline.

1. Welcome and Introductions

2. Review and Approval of 06/24/2024 Agenda.
3. Review and Approval of the 04/23/2024 Meeting Minutes
4. Presentation – Eric Seavey, DEQ Office of Water Withdrawal Permitting Manager – *“Updates to Groundwater Withdrawal Permit Application Process”*
5. Presentation – Brian Campbell, P.G. DEQ Groundwater Characterization and Monitoring Program Manager – *“State Observation Well Abandonment”*
6. New Business – Updates and/or Topics of Interest from Committee Members
7. Public Input Forum
8. Next Meeting
9. Wrap Up

**Approvals:**

- **Agenda:** The committee approved the tentative agenda as presented.
- **Meeting Minutes – 04/23/2024:** Jason Early requested confirmation that his comments had been incorporated into the meeting minutes. Once this had been confirmed the committee approved the minutes as presented.

**ACTION ITEM:** DEQ staff will finalize the meeting minutes and post them as “Final” to Town Hall.

**Presentation:** Eric Seavey, DEQ Office of Water Withdrawal Permitting Manager – *“Updates to Groundwater Withdrawal Permit Application Process.”*

Weedon Cloe introduced Eric Seavey who will be giving the first presentation today.

Eric Seavey is a Manager in the Office of Water Withdrawal Permitting. As part of his role Mr. Seavey is responsible for a large portion of the water withdrawal permits filed with the office. Mr. Seavey will be presenting on changes to the Groundwater Withdrawal Permit Application Process, a process which as recently undergone several prominent changes.

**DEQ Presentation:**

**Slide 1: Updates to Groundwater Withdrawal Permit Application Process**

**Discussions:** Mr. Seavey thanked everyone for their attendance and noted that he would be discussing updates to the permit process and then address challenges and changes to the process

**Slide 2: Groundwater Withdrawal Permit Process:**

- Pre-application meeting
- Application submission and review
- Technical Evaluation
- Draft Permit with necessary special conditions
- Public Notice
- Final Permit issuance

**Discussions:** Mr. Seavey provided an overview of the permit process, taking the committee through the steps of the application. The first step is a pre-application meeting where an applicant discusses how much they intend to withdraw, as well as justifications for the permit and information about the facility itself. Once this step is complete the application is reviewed by DEQ staff. He noted that DEQ works with subcontractors to complete the technical evaluation. Subcontractors determine the area impact and whether the withdraw impacts a critical zone. If the application passes the technical evaluation a permit is drafted, with any necessary special conditions. The applicant then has an opportunity to review the permit. The permit application is then posted for public notice. A 30-day public comment period then takes place. If any comments are received during this time they are addressed by staff. Once this is complete a final permit is issued.

### **Slides 3: Application Changes**

- Application Checklist
- Submission through nForms
- Consideration of Future Changes/Challenges:

**Discussions:** Mr. Seavey gave an overview of some of the changes to the application process that he would be covering during the presentation.

### **Slide 4: Application Checklist:**

- Checklist Submitted With Application
- Includes Consultant's Information
- Justification Specific to Type of Facility
- Applicant and Consultant Certification

**Discussions:** During the permit application process there is a large amount of back and forth between applicants and DEQ staff. The application checklist allows staff to ensure that everything has been covered. The applicant goes through the checklist to make sure they have everything prior to submitting the application. This ensures that at minimum the application is complete. Included with this checklist is the Consultants information if one is being used. Only sections relevant to the justification for an applicant's specific type of facility need to be filled out. The checklist also ensures that any necessary certifications are included.

### **Slide 5, 6, 7, & 8 : Application Through nForms:**

- Access the deq portal <https://portal.deq.virginia.gov/>
- Register or sign in
- Add address if registering
- Quick links select request access
- Select program
- Select permit #
- Select Access
- Select Submit from home page after being granted access
- Fill out Application

**Discussions:** Mr. Seavey gave a walkthrough for how to access and fill out an application on DEQ's website, both for applicants who have previously registered and applicants registering for the first time. He noted that every permit number was changing. This was due to procedural change at DEQ. However, he noted that permit numbers were now permanent.

**Slide 9: Groundwater Withdrawal Application Processing in PEEP**

- As of April 1, 2024 Groundwater Withdrawal Permitting is in PEEP
- When an application is received, DEQ has 15 days to return an application complete letter, and NOD, or an additional information request.
- Total timeframe for processing a groundwater permit application should be 255 days

**Discussions:** Mr. Seavey explained that by adding Groundwater withdrawal to PEEP it gave a specific timeline for DEQ to follow when processing applications. Once an application has been received DEQ has 15 days to acknowledge and respond. There are multiple processes throughout the application process, but overall the application process should be completed within 255 days.

**Slide 10: Changes to Application due to FOIA Exclusions:**

- Intake point locations for facilities where the intake is considered critical infrastructure are excluded from FOIA in accordance with Va. Code § 2.2-3705.2(14)(a); 42 U.S.C. § 5195c(e).
- For these facilities DEQ is requesting 2 copies of permit applications (1 with redacted information and 1 without redacted information).

**Discussions:** Mr. Seavey addressed new changes to FOIA exclusions. Location information for intake points are now excluded from FOIA. What this means is that DEQ will need two copies of an application, one with information redacted and one without. This information is not added to the application until the final few steps of the application.

**Slides 11: Potential Future Financial Challenges:**

- Permit Fee \$9,000 unless excluded (Agricultural Facilities)
- Permitting fees cover roughly 7% of program needs
  1. Technical Evaluation Cost \$5,490 for a typical groundwater withdrawal permit TE
  2. Additional fees if re-running report or finding max passing withdrawal volume (\$3,000 for AOI only run)
  3. Budget for TEs is based on number of expiring permits expected in next fiscal year
  4. FY24 spent roughly \$356,000 for Aquaveo contract
  5. Additional budget request for FY25 and FY26 was not approved, DEQ intends to submit a supplemental budget request for FY25
- Permitting fees would need to increase dramatically if any additional modeling is performed beyond that already performed.

**Discussions:** Lastly, Mr. Seavey addressed any future financial issues that the permit program may face. Excluding agricultural facilities permitting fees are \$9,000. This covers roughly 7% of

program needs. A normal technical evaluation costs \$5,490. Staff may also decide to find the max passing volume, which can incur additional costs. The budget for Technical Evaluation is based on the number of expiring permits. During FY 24 DEQ spent roughly \$356,000 on its Aquaveo contract, which includes all technical evaluations. Moving forward staff will factor in a number of issues to determine budgetary needs.

### **Slides 12: Questions:**

**Discussions:** Mr. Seavey opened the floor to questions at this point.

- DEQ does surface water modeling in house, what are the technical issues of doing groundwater modeling inhouse?
  - The main issue would be staffing and software.
- Has DEQ considered certifying consultants to run modeling?
  - DEQ would have to vet consultants prior. They would have to work with someone inhouse. There are some contractors that have that ability. DEQ takes this into account but still has to do due diligence.
- Several questions were asked regarding the affects the FOIA exclusions regarding critical infrastructure and well locations, including how this will affect other agencies requesting information about well locations.
  - DEQ can only work with what we have and will address these issues on a case by case basis. One potential solution is DEQ not giving an exact location, but a general idea.
- DEQ currently has Budget Requests for FY 25 and FY26. What plans does DEQ have to increase funding?
  - DEQ is working to request an increased budget. The issue is all budget requests need to be justified.

**ACTION ITEM:** The department will post the Presentation on the DEQ Website.

**Presentation:** Brian Campbell, P.G. DEQ Groundwater Characterization and Monitoring Program Manager– *“State Observation Well Abandonment.”*

Weedon Cloe introduced Brian Campbell who will be giving the second presentation today. Brian is program manager for Groundwater Characterization. Mr. Cloe noted that wells have a lifespan, and the abandonment process is just as important as the installation process.

### **Slide 1: State Observation Well Abandonment**

**Discussions:** Mr. Campbell thanked everyone for their attendance and gave a brief overview of how his program works and what its goals are, specifically how observation wells help to understand water levels and quality.

### **Slide 2: Virginia's Observation Well Network:**

- 381 total
- 290 DEQ-operated
- 91 USGS-operated
- 157 continuous
- 224 discrete/periodic
- Expansion underway, thanks to EVGMAC

**Discussion:** Mr. Campbell gave an overview of the locations of the State Observation Well Network. There are 381 total active wells that monitor water levels, with 290 operated by DEQ and 91 operated by the United States Geological Survey (USGS). 157 of the wells are equipped for continuous water level monitoring. The real-time data from these is transmitted to USGS, where it can then be view on their national monitoring website. The remaining wells are not equipped with the ability to relay real-time data. Thanks to the work of the committee the network is currently being expanded. \$7.5 million have been allocated for the expansion of the network by the General Assembly.

### **Slide 3: State Observation Well (SOW) Life Cycle**

- Drilling and construction
- Development and performance testing
- Regular operation and maintenance
  - Representative groundwater levels and quality
- Diagnosis and repair
- Today's focus: Abandonment
  - Permanent sealing and decommissioning

**Discussions:** Mr. Campbell gave a brief over of the life cycle of an observation well.

### **Slide 4: Drilling and Construction:**

**Discussions:** Mr. Campbell gave an overview of the drilling and construction of SOW 253A at the Lake Kilby Water Treatment Facility from the beginning of the process to the final product.

### **Slide 5: Development and Performance Testing:**

- Development
  - Pumping
  - Air-lifting
  - Swabbing
  - Jetting
  - Combinations and cycles
  - Chemical treatment
- Pumping tests
  - Max yield
  - Specific capacity (yield/drawdown)

**Discussions:** Once a well installed it goes through a phase of performance testing. The process of installing a well leaves large amounts of mud caked around the piping, and multiple different tests are run to test the wells performance. The initial discharge from an installed well will often resemble mud, however at the end of testing the discharge is clear. Because wells degrade over time the tests run at the beginning a wells life cycle give us an idea of what the max yield and capacity of a well is, so that degradation can be measured.

**Slide 6: Before and After Development:**

**Discussions:** Mr. Campbell showed an example of SOW 245 at Colonial Williamsburg before and after development.

**Slide 7: Regular O&M:**

- Well-site maintenance for safety, security
- Routine inspection and testing
  - Well condition and performance
  - Hydraulic connection to aquifer
- Routine review of data quality
  - GW levels
  - GW chemistry where available
- **Is the well providing representative data**

**Discussions:** Monitoring staff are focused on the long-term operation of a well. The monitoring is responsible for maintaining the well site, as well as conducting routine inspections and tests to monitor well condition and performance, and the hydraulic connection to the aquifer. Monitoring teams are also responsible for reviewing the quality of the data.

**Slide 8: Representative Well Data:**

- Chuckatuck SOW 141B
- Pumping test: 101% recovery in 6 min, 26 sec
- Similar results from slug test
- Good hydraulic connection
- Representative data

**Discussions:** Mr. Campbell used Chuckatuck SOW 141 to give an example of a well providing representative data. Two tests are performed, a pumping test and a slug test. Prior to the pumping test the water level in the well was static. When the pumping test began the water level dropped, and remained low while the pump was turned on. As soon as the pump was turned off the water level returned to near what the water level had been prior to the test. Afterwards a slug of water was released into the well, resulting in the water level rising, before returning to normal water levels. This indicates to the monitoring staff that the well is performing well.

**Slide 9: Poor Data Quality:**

- Same aquifer
- Divergent hydrographs
- Hmm ...



- Time for some testing

**Discussions:** Mr. Campbell then used SOWs 159 B & C to provide an example of poor data quality. Both wells draw from the Potomac aquifer, 159 B from the upper zone and 159 C from the middle zone. These two zones typically have similar water levels. Both wells were tracking at relatively the same level, until they began to diverge, which indicates that testing is necessary.

#### **Slide 10: Graph**

**Discussions:** Both SOWs were subjected to slug tests. SOW 159c showed rapid recovery, indicating good performance. SOW 159B should a slow recovery, indicating a poor performance. In this instance, a slow recovery means it took days, possibly even weeks to recover.

#### **Slide 11: Other Data-Quality Issues:**

- Review of well construction info can identify potential concerns
- Example: Charles City SOW 066
- Multiple screens (highlighted) in Multiple aquifers
- **What do the GW data represent? Are these water levels meaningful**

**Discussions:** Other data quality issues that can occur can be a result of well construction, particularly in older wells. Some state wells are 60 years old. Some of the older wells were installed by the SWCB, while others were inherited water authority wells. Thus, not all of them were designed as observation wells. For example, some of them screen across multiple aquifers. This is an issue because if a well is screening multiple aquifers it is difficult to determine what the data represents.

#### **Slide 12: Diagnosis and repair:**

**Discussions:** Mr. Campbell used Hog Island SOW 087B as an example of a damaged well to show an obvious need for repair to a well, in this case a well that had been struck by a mower.

#### **Slide 13: Borehole Camera Surveys:**

**Discussions:** When the issue is not obvious one of the means of diagnosis is a camera survey, where a camera is lowered into the well.

#### **Slide 14: Fishing Expeditions**

**Discussions:** If the camera survey reveals that there is a larger obstruction in the well it can result in the need for a fishing expedition. DEQ staff will run a hook down into the well in an attempt to extract the obstruction.

#### **Slide 15: If all else fails:**

## **Slide 16: Abandon all Hope, Ye Who Enter Here:**

### **Slide 17: Well Abandonment:**

- Maintains overall quality of GW data set
- Reduces SOW network upkeep
- Subject to Private Well Regulations (VDH)
  - 12VAC5-630-420 C
    - “Observation or monitoring wells shall be properly abandoned in accordance with 12VAC5-630-450 ...”
  - 12VAC5-630-450 C
    - **“The object of proper permanent abandonment is to prevent contamination from reaching ground water resources via the well”**
    - Specific requirements

**Discussions:** Well abandonment ensures the quality of the data set. If a well isn't performing it throws off the overall quality of the data set. It also reduces the overall amount of resources dedicated to upkeep of the SOW network. Even if we are aware that a well is not performing, we are still required to have staff visit the well once a year to gauge it. There is a constant investment of maintenance into a well that is not providing representative data. Well abandonment is subject to Private Well regulations. The main point is to prevent contamination from reaching ground water resources via the well.

### **Slide 18: Abandonment Process:**

- Identify target wells (cost/benefit)
- Procure licensed driller services
- Field work
  - Grouting well casing
  - Excavating and removing top five feet
  - Capping
  - Backfilling and site restoration
  - Marking
  - Documentation

**Discussions:** Mr. Campbell gave a brief overview of the abandonment process. The first step is to determine if it is worth spending the resources to continue the well. DEQ uses a third party licensed well driller during the process. Then comes the actual field work of abandoning a well. The abandonment of Homeville SOW 048 was used to illustrate the process.

### **Slide 19: Abandonment Process: Grouting:**

**Discussions:** During the grouting process a pipe is fed down into the well and grout is pumped down into the bottom of the well first, which then fills up towards the top. The grout reaching the top of the well indicates the entirety of the well has been sealed off.

### **Slide 20: Abandonment Process: Excavation and removal:**

**Discussions:** Once the grouting is completed drillers dig down to excavate the well and remove the casing.

### **Slide 21: Abandonment Process: Capping**

**Discussions:** For SOWs a PVC pipe is installed to indicate the location of the abandoned well.

### **Slide 22: Abandonment Process: Backfilling and Site Restoration**

**Discussions:** Once all the materials have been removed the site is backfilled and level graded.

### **Slide 23: Abandonment Process: Marking**

**Discussions:** Precise GPS location is taken on top of the well, and the coordinates are then stored to ensure that the well can be located in the future if needed.

### **Slide 24: Abandonment Process: Documentation**

**Discussions:** Lastly the location of the well is documented on an abandonment form.

### **Slide 25: Status of Overall Effort**

- 3 SOWs abandoned in FY23
- 4 SOWs in FY24
- Up to 4 SOWs to be abandoned by USGS Research Drilling Program
- ~20 additional SOWs under consideration for eventual abandonment, resources permitting

**Discussions:** Three wells were abandoned last year, as well as an additional 4 this year, with up to another 4 abandoned by USGS. A further 20 SOW are currently being considered for abandonment.

### **Slide 26: Questions?**

**Discussions:** Mr. Campbell opened the floor to questions at this point.

- Is there an opportunity for Virginia companies to bid on installing new State Observations Wells.
  - Ongoing drilling and well-installation is covered by a joint funding agreement with the USGS and its research drilling program. However, we anticipate adding more observation wells in the future, as funding allows, and there may be opportunities for Virginia water well drillers to bid on those jobs.
- What is the depth of these wells?

- It varies between wells. There is a prioritization of abandonment for deeper, more expensive wells. The deepest wells are located in the eastern portion of the state.
- How many attempts are made to redevelop a well before abandoning it?
  - Typically, only a single attempt is made. Wells are constantly being updated and maintained in an attempt to avoid needing to redevelop. More often the wells are damaged and cannot be redeveloped.

### Questions from Interested Public

- At their February meeting the USGS told the public that the aquifer north of Fredericksburg is more complex. At the beginning of Brian's remarks, he mentioned they were expanding the monitoring network. What are the plans and schedule for putting more monitoring wells North of Fredericksburg, especially in Fairfax County?
  - Currently working with USG to do preliminary data collection. The complexity of the area, what makes the aquifer complex is that it is relatively close to the surface, it is relatively thin, and the depth is quite variable. The complexity of the aquifer has required alternative approaches to the problem. Ultimately monitoring wells might be needed. The difficulty is finding the resources to allocate and finding locations to place the wells. Currently working with USGS to catalogue known wells in the area. The quality of these wells is unknown, so the first step is to catalogue these wells to determine if they could provide quality data. There is currently no plan or schedule to install monitoring wells.
- When do you expect the preliminary data?
  - Preliminary data is expected by September 2025.
- What is the criteria for the selection of well locations? Would we install bedrock wells in the coastal plain?
  - We do not have any plans to install bedrock wells in the coastal plain. Developing a site is difficult. Under Virginia statute we own wells, which means the governor must approve every well site. This requires a multi-agency review process. If it is a private landowner we have to obtain an easement, or a transfer agreement if it's a state agency. Staff have reached out to localities, and other state agencies such as DWR or DCR, that might have open land and be interested in working together. It is generally guided by geological needed, then narrowed down by where we think someone would be willing to provide access. Wells in the coastal plain provide a higher challenge due to fewer state parks.
- What planning goes into the depth of bedrock wells?
  - Other DEQ staff would be able to provide a more detailed answer. When data is available it is taken into account, but sometimes no data is available. Subject matter groups can provide helpful information.

**New Business – Updates and/or Topics of Interest from Committee Members:** Mr. Cloe went around the room and asked if there were any updates or topics of interest that the Committee Members wanted to inform the group of.

- More rural communities have been having interesting groundwater availability lately.
- What is the schedule for the next model update?
  - The model is actively being worked on, and an update will be provided at the next meeting.
- At the previous meeting there was a motion to reenergize the conversation around water trading. There was a request for either a work group to be formed or work session at the next meeting to put together a work plan to implement that prior motion.
- During session the GA passed new legislation requiring that DEQ do a study of groundwater management and a request was made for an update on that study at the next meeting.
- Several members echoed the request for a work group and/or plan.
- USGS is working on the Surficial Aquifer and Paleochannel Characterization and Mapping of the Eastern Shore
- USGS updated Virginia Coastal Plain ground water model.
- Private wells on the Eastern shore are essentially running out of water. Can we look into this to see if it is happening in a widespread arc?

**Public Input Forum:** Weedon Cloe asked if there was any public input. Two questions were asked.

**Robert J. Surovall from Tauxemont Community Association**

- Is there any data about how much non-permitted users of aquifers draw by comparison to permitted users?
  - There is data. That data is provided by the USGS and factored into the model.

**John Culbertson from Tauxemont Community Association**

- You had shared information earlier, just how many households there are, how many are hooked up to Fairfax water for example, and how many are not, some averages of what each household uses, so you should be able to come up with approximate numbers. Do you have some approximate numbers that you can share?
  - That would be something that I don't have in front of me, but I do recall that presentation.
- Maybe that is something we can talk about after the meeting to get a relative sense of those numbers?
  - Absolutely, thank you.

**Next Committee Meeting:**

Weedon Cloe noted that for FY25 he is hoping to get meetings on a quarterly schedule. The next meeting is tentatively scheduled for September. DEQ will send out a Doodle - Poll in the near future to set the date and location for the meeting.

**Adjournment:**

Weedon Cloe thanked all of the members of the committee, the interested public, and Mr. Seavey and Mr. Campbell for their presentations and closed the meeting. The meeting was adjourned at approximately 11:48 A.M.

DRAFT