EASTERN VIRGINIA GROUNDWATER MANAGEMENT ADVISORY COMMITTEE

MEETING #6 NOTES – DRAFT

TUESDAY, MARCH 14, 2017

DEQ CENRAL OFFICE – 2ND FLOOR CONFERENCE ROOM A

Meeting Attendees

EASTERN VIRGINIA GROUNDWATER MANAGEMENT ADVISORY COMMITTEE MEMBERS	
John Aulbach – Aqua Virginia	David Owen – Home Builders Association (For Mike Toalson)
James Baker – City of Chesapeake	David Paylor – DEQ
Nina Butler – WestRock	Chris Pomeroy – Western Tidewater Water Authority
Tom Frederick – VA Water and Wastewater Authorities Association	Nikki Rovner – The Nature Conservancy
Allen Knapp – VDH (For Marissa Levine – VDH)	Dennis Treacy – Smithfield Foundation/Smithfield Foods, Inc.
Keith Martin – Chamber of Commerce	Ellis Walton – VA Farm Bureau
Sandi McNinch – VA Economic Development Partnership	Bob Wayland - Citizen
John O'Dell – VA Well Drillers Association	

NOTE: Advisory Committee Members NOT in attendance: George Harlow – USGS; Rhu Harris – Hanover County; Bryan Hill – James City County; Chip Jones – Northern Neck Soil & Water Conservation District; Marissa Levine – VDH; Travis Quesenberry – King George County; Paul Rogers – Production Agriculture – Farmer; Curt Smith – Eastern Shore Groundwater Committee; Kurt Stephenson – Virginia Tech; Wanda Thornton – Eastern Shore Groundwater Committee (Resigned from Committee); Mike Toalson – VA Home Builders Association Brett Vassey – Virginia Manufacturers Association

INTERESTED PARTIES ATTENDING MEETING	
Arielle Brown – Virginia Farm Bureau	Jonathan Harding – Virginia Agribusiness Council
Preston Bryant – McGuire Woods Consulting/James City Service Authority	David Jurgens – City of Chesapeake
Jeff Corbin – Restoration Systems	Whitney Katchmark - HRPDC
Richard Costello – Home Builders Association of Virginia	Jamie Mitchell - HRSD
Chuck Duval – West Rock	Doug Powell – James City County
Jason Early – CARDNO	Wilmer Stoneman – VA Farm Bureau
Katie Frazier – Virginia Agribusiness Council	Matt Wells - WestRock
Chris Gill – Christian & Barton	Andrea Wortzel – Troutman Sanders/Mission H2O
Eric Gregory – King George County	

SUPPORT STAFF ATTENDING MEETING	
Brandon Bull - DEQ	Craig Nicol - DEQ
Scott Kudlas - DEQ	Bill Norris - DEQ
Amber Leasure-Earnhardt	Jutta Schneider - DEQ

MEETING HANDOUTS (Materials were also distributed via email prior to the meeting.):

- Agenda;
- Transmittal Letter to Advisory Committee;
- Copy of Legislation;
- Problem Statement;
- Draft Outline of Structure of Report;
- Issue Summary for March Meeting

In addition a summary table of the "Top Three Issues to be resolved by the EVGMAC" was distributed at the meeting.

1. **Welcome & Introductions (Scott Kudlas – Staff for the Committee & Today's Meeting Facilitator)**

Scott Kudlas welcomed the members of the Advisory Committee and members of the Interested Public to the meeting and informed them that unfortunately Mark Rubin, the regular facilitator for these meetings was ill and would not be attending today's meeting. Scott noted that he would be playing the role of staff to the Advisory Committee as well as the meeting facilitator for today's meeting.

He asked for introductions from the members of the Advisory Committee and members of the Interested Parties.

2. **Opening Statement – Dave Paylor – Director of DEQ:**

Dave Paylor opened the meeting with a brief statement to the Advisory Committee. He thanked everyone for being here. He noted that up until this point that this group has done a lot of listening. The report is due in August. There have been a lot of work groups meeting. They have made some recommendations and other deliberations that we are going to talk about. He noted that he hoped that this process shifts to some deliberations among this group and some decision making and some recommendations from this group. The power and the potential in this group is that we want to be able to communicate to the legislature areas where there is a broad consensus within this group perhaps of legislation that would help move us forward. Perhaps also in policies but in general to recognize that there is an issue of water management that we need to think about differently. He noted that he is hopeful that for today and for the next few meetings that we will be able to get down to some brass tacks and see what this group can agree to as sort of policy recommendations to the legislature and where we can't agree. This group now moves into more of a working mode and while we have some thoughts from the workgroups that we will deal with we don't need to be limited to those thoughts. If there are other things we want to talk about that you want to suggest and have us kick around as possible solutions as well then we can. When we are done no more than a few months from now, he hopes that we have at least found the areas where there is relatively broad agreement on policy moves that would make sense for the Commonwealth. The areas where we do have broad agreement will have a lot of power. This is a larger discussion that just permitting existing groundwater users. This is a question of how do we make the right platform for water use in the future and for economic growth going forward. It is broader than just permitting. We have had really good discussions with the 14

facilities that are the majority permitted users of the aquifer right now. We think that we are there. The goal of how do we begin to transition and cut back that use has begun. Those discussions have gone very well and those discussions have been very constructive. That is just the starting point with where we are right here for this Advisory Committee. We have taken the first steps. Now what are the next steps we need to take so that we have a viable aquafer and meet all the needs of the public 20 or 30 years from now?

3. **Review of the GWAC Ground Rules and Charge from the General Assembly to the Groundwater Advisory Committee (Scott Kudlas):**

Scott Kudlas briefly discussed the Advisory Committee's Ground Rules and the Charge from the General Assembly to the Advisory Committee as reflected in the legislation that was passed creating the committee. He noted that basically the ground rules were a commitment on your part and on the part of DEQ to work together to try to prioritize our common interests and to find solutions to the greatest extent that we could through this process to do the kinds of things that were outlined in the charge to the Advisory Committee as identified in Section 62.1-256.1 of the Code of Virginia.

B. The Committee shall examine (i) options for developing long-term alternative water sources, including water reclamation and reuse, groundwater recharge, desalination, and surface water options, including creation of storage reservoirs; (ii) the interaction between the Department of Environmental Quality's groundwater management programs and local and regional water supply plans within the Eastern Virginia Groundwater Management Area for purposes of determining water demand and possible solutions for meeting that demand; (iii) potential funding options both for study and for implementation of management options; (iv) alternative management structures, such as a water resource trading program, formation of a long-term groundwater management committee, and formation of a commission; (v) additional data needed to more fully assess aquifer health and sustainable groundwater management strategies; (vi) potential future groundwater permitting criteria; and (vii) other policies and procedures that the Director of the Department of Environmental Quality determines may enhance the effectiveness of groundwater management in the Eastern Virginia Groundwater Management Area. The Committee shall develop specific statutory, budgetary, and regulatory recommendations, as necessary, to implement its recommendations.

He noted that over the course of the next few meetings the plan is to systematically move through these items over the course of today's meeting and the following ones to see if there is any consensus on your part on policy issues to move forward with either statutorily or regulatorily or any budgetary actions that might be included along with that.

4. **Materials Distributed Prior to the Meeting (Scott Kudlas)**

Scott referred to the materials that had been distributed via email to the Advisory Committee members and to members of the Interested Parties Distribution List and asked for any questions and comments regarding those materials. He reviewed the agenda and the plan for today's meeting.

- A question was raised as to who would actually be drafting the report – Scott noted that Mark Rubin and his Intern would be the ones pulling the materials together and drafting the report.

5. **Tabulation of Problems Identified by Members of the Groundwater Advisory Committee Members (Scott Kudlas):**

Scott Kudlas distributed and discussed a tabulation of responses from members of the Advisory Committee Workgroup members regarding the "Top Three Issues to be resolved by the EVGMAC". The members of the Advisory Committee reviewed and discussed the various "Top Three Issues".

He noted that we did not get a lot of responses from folks on the Advisory Committee regarding their "Top Three Issues", but those that had been received had been complied for consideration by the committee. Copies of the "Top Three Issues" compilation were distributed to the committee and those interested parties present.

He went through the "top three issues" statements that had been received. He noted that following items with these comments:

- **Aquifer Injection Framework:** One of the things that workgroups did spend a fair amount of time on was creating some kind of framework to encourage or provide incentives for "aquifer injection" so that to the extent possible that we could create a climate where people wanted to put more water into the aquifer.
- **Groundwater Credit Trading:** This was a concept that we received comment that folks thought was a high value item. This concept was discussed at length by one of the workgroups. While we didn't come to resolution on a framework for this there is perhaps some consensus of the group that we ought to continue to have that conversation going forward.
- **Incentives for Converting from Groundwater to Surface Water:** There were a number of conversations in a number of the different workgroups where people identified the expense of converting infrastructure from one source to another and one of the things that the State might play an ideal role to help in encourage this was to provide some sort of capital or financial incentive for people to make that transition.
- **The Use of More Sustainable Aquifers:** This is the concept of prioritizing use from more sustainable aquifers and limiting use of less sustainable aquifers. We do have other aquifers that are under less stress and to the extent that we can make use of those we should prioritize their use. That is something that DEQ actively does in the permitting process and is one of the ways that DEQ has been able to continue to issue permits for as long as they have.
- **Coordination of research and Model Development:** There was a comment that was made that the research agenda that DEQ has with USGS isn't always transparent and there is not always opportunities for stakeholders to provide input into that process. To some extent there are perceptions that the model may not be as transparent or the process of updating the model or making improvements to the model may not be as transparent as it could be. He noted that DEQ was planning a model workshop to assist in this effort.
- **Characterization of Unpermitted Withdrawals:** This was identified as another high priority item that came from this group and it is also a high priority item that was discussed by a number

of the different workgroups. This item will be further discussed at a future meeting of the Advisory Committee.

- **Lengthening the Permit Term:** This is another issue that was discussed at length in a number of the workgroups. Currently the permit term is 10 years. There have been discussions in the workgroup meetings on increasing that permit term to as much as 30 years.
- **Incentives for Converting from Groundwater to Surface Water:** This has already be raised and discussed earlier in the list.
- **Groundwater Allocation & Aquifer Replenishment:** Finding a way to allocate the benefits of the HRSD SWIFT Project should it become a reality and achieve the projected benefits.

Scott noted that those were the items that we had received input from the Advisory Committee on prior to the meeting. He noted that all of these items with the exception perhaps of the allocation of the SWIFT Project benefits have been identified in one or more of the summaries that were distributed to the group for further discussion at this or future meetings of the Advisory Committee. The plan currently is to address each of these items perhaps except for that one item regarding modeling during a meeting of the Advisory Committee. The SWIFT Project could be included in the discussions on injection or the incentives for trade. He asked whether there was general agreement among this group that this would be a reasonable approach moving forward. Are these the topics that need to be fleshed out and discussed by the group? Are there any topics that are not in this list that need to be considered?

The following additional "Top Three Issues" were raised by the Advisory Committee Members:

- How to regulate and pay for the HRSD Aquifer Recharge Project/Approach?
- A better way to manage unpermitted users.
- Adjusting permits to more accurately reflect current and anticipated uses. This issue may have been resolved through the some of the on-going permit modifications for the next 10 years. This is an on-going process within the agency and the permitting program that DEQ will continue to do.
- Incentives for alternative uses. There are difficulties that the agricultural and the development communities face with regard to constructing impoundments and farm ponds. The regulations and restrictions make it very difficult to be able to construct a farm pond. There may need to be a policy statement or some form of legislation that would promote the development and use of small impoundments and farm ponds and make that process as smooth as possible.

It was noted that comments from the Department of Health had not been received prior to the meeting but that they were available for presentation at the meeting. VDH noted the following priority issues for consideration by the Advisory Committee:

- Develop a strategy in an attempt to resolve the conflict that exists today regarding the Prioritization of Human Consumption Withdrawals as a basic public health strategy for safety – for adequate drinking water;
- Water Supply Planning – Providing some sort of oversight authority for SWCB to put some teeth in the Water Supply Planning Process in order to consider different sources;

- Enhancing the State's ability to monitor and oversee the UIC program/process particularly with a Public Health Focus;
- Unpermitted withdrawals – being able to gather that data so that we can accurately model it.

Discussions of these additional items included the following:

- It was noted that just the blanket statement of prioritization for human consumption causes some level of anxiety. To have a sustainable community you have to have a balance between different uses. It doesn't do us any good to have the capacity to host millions of people but there are no jobs for them in the community and there is no water for plants and animals to provide food and so on. It also raises an issue of timing – do we have to close a plant to be able to provide water for human consumption instead of a manufacturing or production process or facility? It was noted that there is no problem with the concept that human consumption is perhaps the highest priority but just saying that it gets first dibs on the water supply puts some in an uncomfortable position. Implementation of this concept is very difficult – fair and equitable implementation is a challenge – particularly in terms of timing. Discussion included reference to existing State Water Control Law language that describes a balancing process or condition.
- Regarding SWCB oversight of the Water Supply Planning Process is this an attempt to have a greater state role in identifying resources that might be most appropriate for a given jurisdiction? It is the understanding that currently the SWCB does not have the authority to take a Water Supply Plan that might consider a number of different sources and in considering whether to grant a withdrawal permit to dictate use of specific different sources. It was suggested that there was already somewhat of a framework that allowed for consideration of the use of alternative sources identified in the Water Supply Plan at the local level and there was already a mechanism for an alternatives analysis. It was suggested that most of the items in the "Top Three Issues" list appear to be geared towards developing solutions. Trying to convert this current "planning" process to more of a "regulatory" process without knowing more details and having more data is contrary to the mode and intent of the other items on the list. We would need to know more about this concept before we put it on the list for further consideration. It was noted that it was a fundamental area for discussion in 2003 and 2004 when DEQ was working on what ended up being Senate 1221 and the Planning Regulations and the one thing that was clear in those work groups was that the localities needed to be the planning authorities. Not necessarily opposed to the SWCB having a different role but we would have to find a workable balance with the localities. DEQ noted that in helping with planning that they cannot guarantee permitting. This is a fairly complicated situation. The way that the planning process is designed now there is a feed-back loop where the state does comment back to the jurisdictions on the availability of those sources and that is as far as it goes in providing information for local decision making. There is some notice so to speak to the locality as to the Commonwealth's sense of the sustainability of a source for what is being proposed in their plan but it doesn't dictate it. The recommendation to JLARC was that we should allow that Water Supply Planning

Process to go through at least another cycle to see if folks respond to it before significant changes in approach are discussed or recommended.

6. **Consensus Discussion - Problems Identified by Members of the Groundwater Advisory Committee Members – "Top Three Issues" Table (Scott Kudlas):**

It was decided that instead of trying the rank the issues that had been identified in the "Top Three Issues" communications and discussions that the more appropriate way to look at those issues would be from an "all of the above approach" for those items where the group has consensus that the issue is a "top issue". The group reviewed the issues identified in the "Top Three Issues" list and noted the following for each of those items:

- **Aquifer Injection Framework** – The framework should include but should not be limited to large regional solutions such as HRSD's SWIFT project. It was noted that this should not be limited to just dollars but could also include some credit concept related to permitting and capacity limits. It is not clear that we have a regulatory process to assure to the public that the quality of the water being injected is consistently what it needs to be. The EPA UIC program does not quite do that. It needs to be drinking water quality, but it also needs to be chemistry compatible. Maybe the key point to make here is that there is not necessarily a regulatory process that is clearly in place to make sure that this is managed the way it needs to be. We need to figure out what that needs to look like and we need to make it as simple as possible. Is this generally something the group has some consensus about? YES
    - Add monitoring and oversight of the injection process so that we can assure that we are not damaging the system. Is this something that we should include in the framework? YES
    - What about this notion of paying HRSD for the investment that they make on the project? The better concept is that we understand how the finances for the project would work. We need to understand who pays for what and when. What are the costs? What are the options? What about the O&M Costs? Also should consider beyond HRSD, what can other localities do? YES

ACTION ITEM: Jamie Mitchell indicated that HRSD was not asking for funding. She agreed to provide a one-page summary that describes details about the financial aspects of the HRSD SWIFT Project to Bill Norris for distribution to the Advisory Committee.

- **Groundwater Credit Trading – YES - Consensus**
    - Need to consider not just the money issues but the possible changes to permitting requirements and the possibility of the creation and use of credits in the framework. YES
    - The last item to consider is the concept of a credit related to this type of activity. There could be credits for not just injection projects but also for some form of off-set credit for water efficiency or water conservation efforts. YES

- **Incentives for Converting from Groundwater to Surface Water – YES - Consensus**
    - This should be broader than just a financial incentive consideration. YES
    - There are regulatory hurdles at the federal, state and local levels that need to be overcome in order to convert from groundwater use to surface water. A statement of policy is needed to make it easier to develop a surface resource. There are multiple levels of regulations that make it difficult to build a pond.
- **Use of More Sustainable Aquifers – Designating the specific use types for each aquifer either in a very specific fashion or by general use category for aquifers. It was agreed that this should be a negotiated decision. YES - Consensus**
- **Characterization of Unpermitted Withdrawals/Users –** The issue there is that the unpermitted portion of the demand is continuing to grow at an estimated rate of 1 million gallons per day per year based on the most recent information that DEQ has available. The concern is that the total estimated amount of total volume of the unregulated use is almost equivalent to the reduced permitted value. This was an item that all of the workgroups agreed needed to be addressed in some way. The concept of a "fee" was also discussed and will be part of a future discussion on this concept. **YES - Consensus**
- **Coordination of Research and Model Development –** There is some feeling on the part of stakeholders that there ought to be some consistent and regular dialogue with them about what that research agenda might be, what the data needs are and how is DEQ using the data that they are requiring permittees to collect and to provide and how is that helping DEQ to better manage the system and issue permits? From DEQ's perspective there are no objections to providing those opportunities and letting people know what the research agenda is and how the tools being used are changing over time and even training folks on the use of the DEQ tools. **YES - Consensus**
- **Concept of implementing the human consumption priority –** There was a willingness to keep this concept on the table for further discussion and conversation but there was not a consensus that it should be kept as a priority item and it is not a done deal. **NO Consensus**
- **Greater State Water Control Board Oversight – Is this something that the group wants to discuss further?** This is the concept to adding teeth to the Water Supply Plan. The concept of "GO Virginia" was raised. Willing to discuss further. **YES**

7. **BREAK – 10:25 – 10:35**

8. **GWAC Problem Statement (Scott Kudlas)**

Scott provided a summary refresher of the Groundwater Management Advisory Committee Problem Statement. His presentation included the following:

- The Eastern Virginia Groundwater Management Advisory Committee (Committee) will develop a consensus strategy, including legislation for the implementation of the strategy, for the management of groundwater and other alternative sources in the Eastern Virginia Groundwater Management Area (EVGMA). The goal is to create a clear, consistent and

understandable framework for the management of the water resource so that local and state regulators, those whose activities are regulated by the law, and consumers, both human and industrial, can guide their actions in accordance with a strategy to sustain the water resource. **The intent is to manage the resource so that it is productive and available to meet the human, industrial and environmental needs of the EVGMA**

- **Groundwater Management Issues:**
  - Declining water levels
  - Reversal of the hydraulic gradient (groundwater flow) leads to salt water intrusion
  - Subsidence and loss of storage
- **Challenges for the Future:**
  - The growth of unregulated use (withdrawals below 300,000 gallons per month) creates risk to the aquifer, erodes progress made by permit reductions and limits availability
  - The frequent lack of interjurisdictional cooperation is a barrier to optimizing use of the resource
  - The development of alternatives to groundwater requires overcoming many financial and regulatory hurdles
  - Increasing aquifer recharge in a safe, acceptable and cost effective manner is another complex problem
  - Maintaining the effectiveness of the management program requires finding resources to keep modeling tools current and transparent as well as to implement changes based on the most recent available scientific information
- **Problems to be Addressed May Include:**
  - Reduce remaining critical cells
  - Minimize the potential for the return of, or increase in, the number of critical cells
  - Improvement in land subsidence and restoration of elastic storage
  - Minimize the potential for upconing or lateral saltwater intrusion resulting from groundwater pumping
  - Maintain groundwater availability to permitted and unpermitted users for future growth to the greatest extent practicable

Scott asked the group whether there was Consensus on the Challenges for the Future and the Problems to be Addressed items. Are these the right items? Are these the right issues? Discussions included the following:

- It was noted that the regulatory hurdles mentioned are there for a reason and that is to protect surface water and that needs to be emphasized.
- There is a need for regional solutions.
- Does DEQ know who the unpermitted users are? It was suggested that this is a partially known pool. DEQ knows who probably 30,000 of the unpermitted users are, but the entire pool is more like 300,000.

- What was the rational/justification for the permit threshold originally? It was based on the best professional judgement of a group of geologists and modelers. It was based on the fact that it was enough of a withdrawal that would have an impact on an aquifer. The threshold limit was established in 1992. The question was asked whether DEQ was ok with the science behind the threshold limit. DEQ noted that the science was still true but whether it could be less than the current limit is what the conversation would need to focus on. There are significant staffing issues that would go into lowering that threshold. You could gain greater protection by lowering the permitting threshold but it would likely warrant a reevaluation of how those additional permits would be evaluated, because it is likely that a fair number of them would not go beyond the neighboring property. Unless you are in a critical cell everyone would get a permit. At that point it just becomes a permitting exercise. You could under that scenario develop a General Permit to handle those users.
- Under the Challenges for the Future and the Problem Statement – there does not appear to be anything that addresses ensuring the Mission of the Advisory Committee. These are things that would need perhaps to be in place to assure the mission.

Scott asked whether there was a consensus regarding the "Problem Statement".

Discussions included the following:

- It was suggested that the term "Sustainability" should be incorporated into the statement. Sustainability balances social, economic, and environmental issues and concerns. It was noted that the concern is what it means for groundwater. It was suggested that it included using the resource today while providing for its use in the future. It was recommended that the term "sustainability" should be incorporated into the problem statement.
- There was Consensus from the group on the Problem Statement and the incorporation of the term "sustainability".

9. Draft Outline of the Structure of the Final Report (Scott Kudlas):

Scott reviewed the draft outline of the structure of the final report with the Advisory Committee and asked for their thoughts on whether it seemed to be an appropriate proposed structure for the report.

- Executive Summary
- Brief Description of Process with List of Members of all Work Groups and GWAC as appendix
- Description of the Problem we are trying to solve
- Examination of Groundwater Management Issues and Related Recommendations
    - Options for long-term alternative water sources
    - Potential funding options
    - Potential changes in permitting criteria
    - Alternative management structures

    - Additional data needs
    - Other policies and procedures not already mentioned
- Conclusion

Discussions included the following:

- Do we need to call out short-term sources in addition to the long-term alternative water sources? It was noted that the workgroup did look at both short-term and long-term sources. It was recommended that short-term sources should also be included in the statement. We need to look at all options – need to look at everything that is available.
- Where would unpermitted users fall into this scenario? It was suggested that it could fall into the categories of "potential changes in permitting criteria"; "additional data needs"; or "other policies and procedures".
- Where would the concept of trading fall into the outline? It was suggested that trading might need its own bullet. Trading should be singled out in the outline as its own bullet.
- The idea of including the concept of "solutions" into the category of "options for long-term alternative water sources" was raised. If this category is focused on structures then "alternative solutions" might need to be an additional category in the outline.
- It was also suggested that we should consider the use of "tax incentives".

It was noted that the idea is that prior to the next meeting that we will put "meat" on this bare-bone outline to reflect the discussions that take place today. Staff will take the issues and fit them into the outline and identify where they will be addressed. Mark's Assistant, Amber will start working on the narrative of various sections of the report based on today's discussions and will do the same following each meeting of the group and the report is further fleshed out. The "Top Issues' will be incorporated into the outline for the report.

ACTION ITEM: Staff will work on fleshing out the outline of the structure of the report based on today's discussions for presentation to the group at the next meeting.

It was noted that there has been a lot of progress in terms of the compromises and concessions represented by the current round of permits, so simple for background purposes would that information be a helpful element to include in this report to immortalize that effort? It was agreed that this was a good idea. It was noted that there have been considerable efforts undertaken by the current permittees to meet the permit reductions and those effort should be acknowledged and recorded for future staff and stakeholders who will be involved in this process in the future. It is not a small thing and is worth acknowledging and including in the record.

ACTION ITEM: Staff will develop an additional section for the report that immortalizes the compromises and concessions represented by the current round of permits.

It was noted that as a policy consideration that in the discussions that DEQ has had with the folks who have had to find ways to cut back on their withdrawals, a question that has arisen is whether or not as more groundwater becomes available whether there should be some kind of a vested right for those who had an allocation and lost it to have a "rights of first refusal" for any "additional" groundwater. It was suggested that we really have a Western Water Law process – a type of "prior appropriation" – some allocation was appropriated and some was taken away from these users. When you get a permit from the State, it ought to be something that you can count on, but new information intervened that resulted in their having to be cuts to those permitted allocations. Maybe we need to look at providing a mechanism to restore that or a portion of that original allocation if additional groundwater resources become available? This is a big policy issue. It was noted that this is the reason for the suggestion to add information about these changes in allocated amounts and the efforts undertaken by the permittees to reduce their withdrawals to those lower allocation levels. We are all serious about the need for a stable regulatory climate in which to work and in order for future economic investments to be made in Virginia. We need to make sure that everyone is aware of the process and what efforts were made by all parties involved to reach this point so that we can continue to move forward. The context for this groups actions and the actions undertaken by the permittees to meet these revised allocations is important to document and to include in the report from this group. This concept also falls into a type of prioritization discussion and a sustainability issue to. We want in the end to be creating a platform for growth. It was noted that there are currently a number of efforts to encourage economic development in the Commonwealth and we don't want this report to be a disincentive for growth.

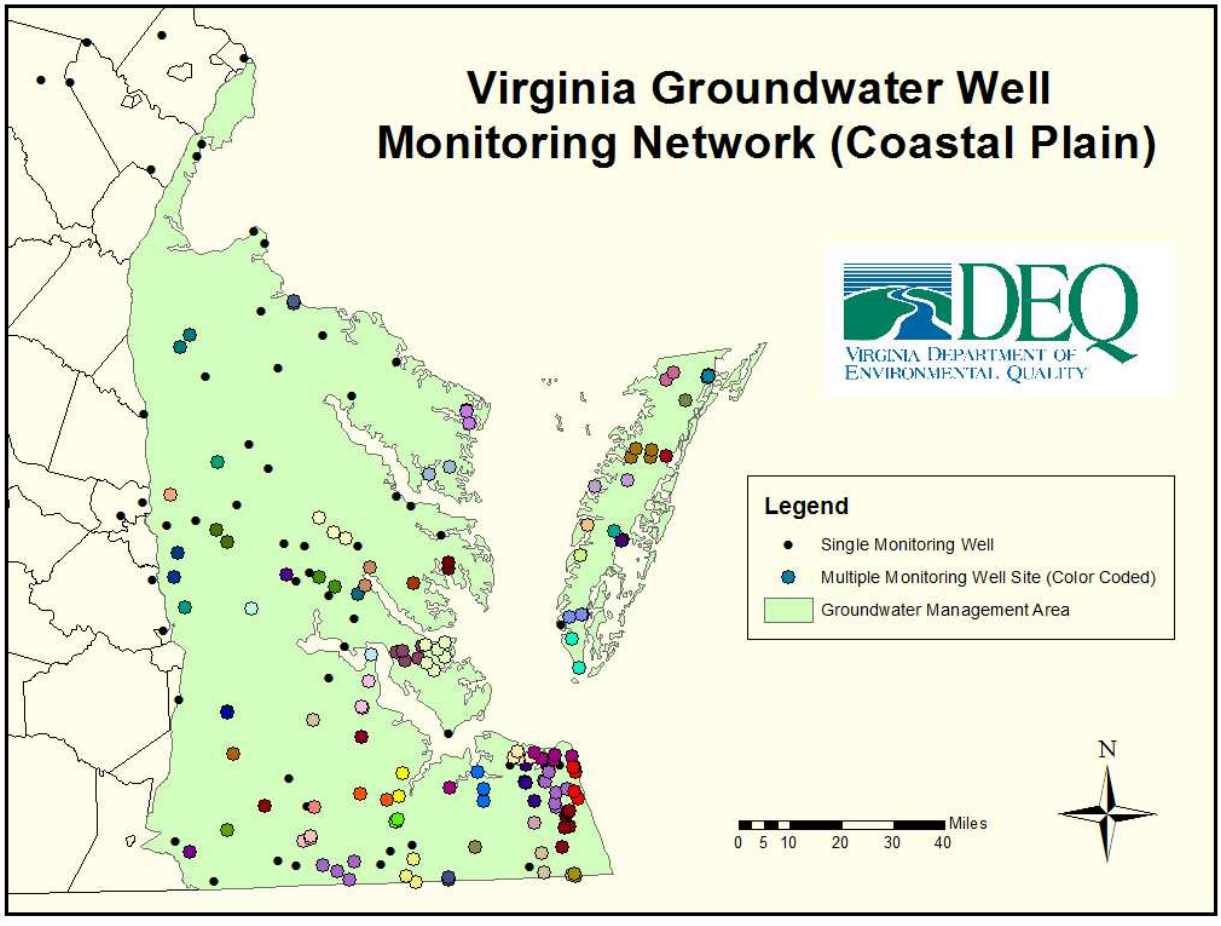
10. Data Needs Discussion (Scott Kudlas):

Scott presented an overview of the "Data Needs" that have been identified throughout the course of the meetings of the Advisory Committee Workgroups. His presentation included the following:

- **Discussion of Data Needs:**
  - Existing Well Network Repair and Maintenance
  - Address Gaps in Hydrologic Framework
  - Model maintenance
  - Address Gaps in Water Monitoring Network
  - Water levels
  - Update Unregulated Use Estimation Methodology
  - Private well irrigation and geothermal gaps
  - Implement Saltwater Intrusion Network
  - Install New Extensometer
- **Well Maintenance and Repair:**
  - Need to ensure scientifically reliable and valid data
  - Most of the current well network was installed at least 30 years ago (50% of 243 wells)
  - As part of maintaining the network, we have started assessing the condition of 20-25 wells per year

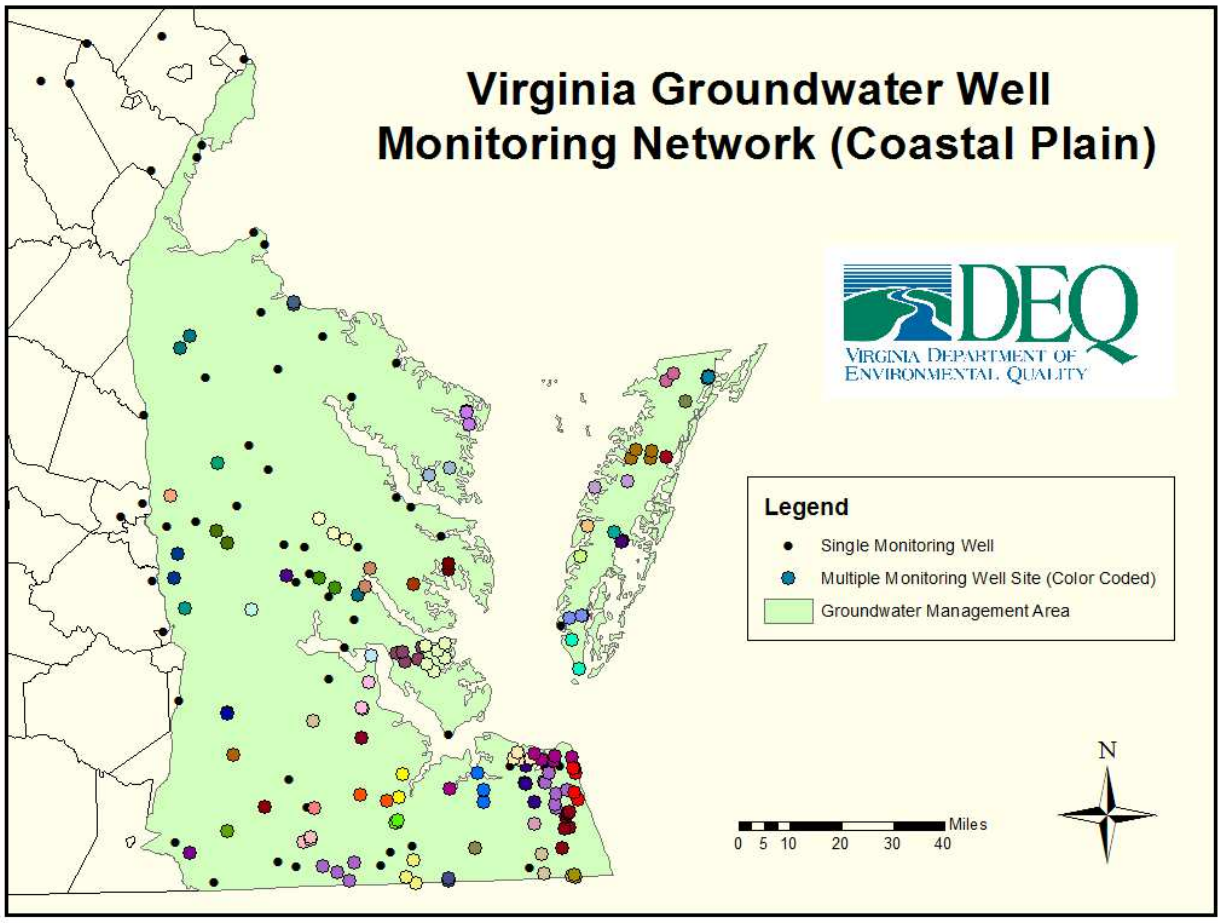
- 16 of 29 have shown problems that need to be addressed
- Problems include aging casings, silted screens, and obstructions
- Estimated costs of maintenance…
  - Varies by situation and bid offering
  - Last time we bid for 1 well received a proposal for $38,275 to remove sediment.

- Hydrogeologic Framework:
  - Areas of uncertainty in the Norfolk Arch area south of the James River, expanded GWMA north of the Mattaponi River including "panhandle area", north and western edge of Chesapeake Bay Impact Crater (CBIC)
  - Capacity to add data is by happenstance based on permittee location/uncertainty, if extra DEQ funds to develop wells becomes available, if suitable bids come in that are consistent with the budget available



- **Water Level Monitoring:**
  - Areas of uncertainty in the Norfolk Arch area south of the James River, expanded GWMA north of the Mattaponi River including "panhandle area"

- No operation and maintenance budget for staff to take measurements, calibrate monitoring equipment, repair and replace equipment
- Currently at the staffing limit to maintain the system: options are to add staff or add funds to contract with USGS



- **Unregulated Use Estimation:**
  - DEQ uses an estimate of unregulated use based on a methodology USGS developed under contract
  - Published in 2008 using 2006 data (2000 US census data)
  - 29 mgd based on 2006 data
  - Growth to 2016 estimated at 1 mg per day per year or new total of ~39 mgd
  - New method needed using VDH and DEQ private well data and a way to estimate growth
- **Saltwater Intrusion Network:**
  - DEQ contracted USGS to develop a monitoring strategy for lateral and upconing movement of saltwater
  - 612 wells assessed for proximity to 250 mg/l chloride surface

    - 81 priority wells within 50 feet; 42 wells at risk of intrusion needing monitoring-- 54 monitoring wells needed
    - No existing wells (~200) suitable to monitor this movement
    - Total cost of implementation $12.5 mil over 10 years + $1.35 in annual costs
- **Chloride Monitoring:**
- **Extensometer:**
    - Field investigation by Dr. Reay of the Virginia Institute of Marine Science has documented sea level rise/land subsidence impacts to the Pamunkey Marshes near West Point
    - New subsidence package built for DEQ groundwater model estimates nearly a foot of subsidence has occurred near West Point
    - HRSD-USGS installed an extensometer at Nansemond for $1.3 million + $30,000 estimated O & M
    - Estimated $40,000 per year O & M for existing Suffolk and Franklin extensometers

Discussions included the following:

- The model diverges from reality over time.
- DEQ doesn't have a budget or a program to ensure the ongoing O&M of the existing monitoring well system.
- Most of the wells were drilled by the SWCB before there was DEQ – we had 3 staff and a well drilling rig before budget cuts eliminated those. DEQ has not installed any additional monitoring wells since 1989. A question was raised about the possible use of VDOT wells. It was noted that those wells are included in the total number of wells being used for monitoring. DEQ also has access to some USGS wells. Because there is no existing budget for the operation and maintenance of these wells it is currently an ad hoc effort.
- DEQ currently has only 2 staff members to cover the entire state to address the needs for these monitoring wells.
- A question was raised as to how much does it cost for a water level monitoring well? A water well "nest" can run anywhere from $ ¼ million to $ ½ million.
- Water level monitoring wells are limited to not using production wells because a water level monitoring well needs to be a certain distance from a pumping well.
- There have been approximately 5,500 new wells reported to DEQ that are in the Groundwater Management Area since the new reporting regulations have been in place – for about a year and ½.
- In theory, all new wells in the GWMA now require some kind of permit.
- An Extensometer is a well that measures the compaction of the aquifer unit based on pumping. It measures subsidence.

- It was suggested that the budget summary data that was provided in the slide presentation should be augmented and presented to the group in the form of capital and O&M budget estimates so that the group could better prioritize the list of needs.

ACTION ITEM: The group requested that staff clarify the priority of these data needs items and augment the capital and O&M costs/budget needs as a way to better prioritize the needs. A more detailed budget for these items will be developed and presented to the group at a future meeting.

- A concern was noted over the inclusion of the term/phrase "data gaps" and the resulting uncertainty that the term could represent. The statutory language and issue statement regarding data needs and the use of the term "data needs" presents a concept of uncertainty. If there is uncertainty and there are data needs how can we know what is needed? It was suggested that these recommendations are to close those data gaps and to reduce to the greatest extent that we can the uncertainty. The question is if we have data gaps how do we know what we are talking about right now? The real issue is "can we get more out of the system" using the existing data then we currently are? DEQ concludes that with more information there are different areas where they think they can get more out of the system because the way in which the tool works is that it is more conservative that we do not have the real data for. It was suggested that this concept needs to be framed in such a way that it cannot be misinterpreted that the recommendations that this group makes are not based on solid data. The question was raised as to whether DEQ was comfortable with the data that is currently available. Staff noted that they were comfortable making the general decisions, but they would like to be able to be more adaptive and more active in terms of how those decisions are made. It was noted that with more data, we might be able to less conservative and there might be more within the system then what we are aware of. With more data we can be more concise. More data can be used to validate the actions that are currently being taken to manage the resource have been successful or not at some point in the future. The suggestion was made that this statement should be included in the report in some manner.

ACTION ITEM: Staff will structure a statement for inclusion in the report to indicate the concept that more or additional data can be used to validate that the actions that are currently being taken or being proposed to manage the resource have been successful or not at some point in the future.

11. LUNCH (11:50 AM – 1:00 PM)

12. Issues Summary for the March Meeting – Criteria for Permitted Users (Scott Kudlas/Whitney Katchmark):

Scott Kudlas reconvened the meeting and informed the group that for this meeting and future meetings of this group that a member of the workgroups for each of the specific topic areas will be presenting the information related to those specific topics. Whitney Katchmark will be presenting the information regarding the concept of "criteria for permitted users".

Scott noted that he had gotten a question during the break related to additional data and scientific understanding sufficient for DEQ to do what they do. He noted that the biggest area where we indicated that we needed more information was in the newly expanded Groundwater Management Area. Those first "10-Year" Permits in the area are not modeled. The way in which the program has handled that in the past is that in the 10-years that those permits are in place the Agency goes ahead and develops additional information that it feels it might need to do the best job possible in evaluating their impacts when those second permits come up and the modeling is then required.

Whitney Katchmark reviewed the information regarding criteria for permitted users that was developed by the EVGMAC Workgroup #3. She went over the materials that were included in the "Issues Summary for the March Meeting" that was distributed to the Advisory Committee prior to this meeting. Her presentation included the following:

- **Criteria for Permitted Users**
    - The Workgroup addressed the modeling process which provides the data on which permit decisions are made. The following recommendations were made by the workgroup:
        - Make the process of changing the model (framework) more transparent by including stakeholders in the discussion.
        - Review the model every 5 years. Commitment to update the model on a regular basis.
        - Continue tracking actual use.
    - In regard to specific permit criteria, the following was recommended:
        - Make the term of the permit the same for surface water (15 years). Twenty (20) years was deemed to create a significant risk to the aquifer.
        - Review the "reopener" criteria. (Administrative approaches being used in permitting programs may not lend themselves to statutory or regulatory changes.)
        - Leave the "cushion" in as to volume permitted to allow for growth. . (Administrative approaches being used in permitting programs may not lend themselves to statutory or regulatory changes.)
        - Tie increases in volume permitted to completion of infrastructure necessary to use the increased volume – this could be through a tiered permit. . (Administrative approaches being used in permitting programs may not lend themselves to statutory or regulatory changes.)
        - Create qualified reopeners based on conservation to create more certainty.
        - Look at trading as a form of allocation of the resource.
        - Significant discussions centered on whether water planning should be formally integrated into the permit process. The consensus was that it should not be. Planning should inform the permitting process but not be incorporated into it because it would add an additional layer of review, cost and delay into what is already a complex and time intensive process. Enhanced regional planning will

be a topic of discussion in the May meeting and will be addressed in the summary prepared for that meeting.

- § The definition of "need" was discussed. "Need" relates not only to the end use of the water withdrawal but could also relate to a need to protect a given resource. Consequently, a need could be generated by the health of the aquifer as well as an end use.

Discussions included the following:

- DEQ noted that they could agree to include a stakeholder review process with the existing stakeholders without legislative action. DEQ is committed to do this and there are no statutory or regulatory changes required. A workshop is being planned for the near future to address the transparence concept.
- Regarding a longer permit term – why is 15 years okay but 20 years is not? This matches the length of permit term for surface water permits. It was noted that there are some stakeholders who currently have experience with 20 year permits in other states that seem to be working. DEQ noted that currently the longest permit period used in any permit in Virginia is 15 years. It was suggested that the reference to the 20 year permit term is not supportable and should be removed from the recommendation. It was suggested that the recommendation should be for a 15-year permit term with the expectation that there will be agency evaluation of the data collected to determine is an alternative/different permit term is warranted. The recommendation was made that the permit terms should be reevaluated every 5-years or when appropriate additional data becomes available.

ACTION ITEM: The recommendation was made to remove any reference to a 20-year permit term from the recommendation for clarity and to add a clarifying statement regarding a reevaluation of the permit terms on a 5-year time period or when appropriate additional data becomes available. Statutory and Regulatory language reflecting a 15-year permit terms will be developed and brought back for consideration by this group.

- What is meant by the term "qualified reopeners"? This is trying to get at the idea of awarding a permittee for water efficiency in some manner. It is a concept of "good deeds should not be punished". The question is how to account for and reward water conservation and efficiency? Maybe the use of the term "reopener" is inappropriate. The concept could probably be included in the need section – need evaluation. Maybe we need to look at a "good deeds" credit of some kind. How do we reward conservation and efficiency? DEQ noted that the statute and the regulation has always had a mandate for conservation and has always said that you are to reduce your use through a conservation and management plan. So why should we reward something that is already required? Some reasonable level of conservation is expected.

- Trading - it was suggested that there is a need to see more representation of the trading concept at the next meeting(s). A question was raised about the existing Nutrient Trading Program. It was noted that the program does do well but it also has its challenges. Annual credits are not valued as much as Permit Credits which are known as "Allocations". Allocations have the real value in a trading program. This may also be linked to the concept of a "cushion" in the permitting process.
- Conservation and efficiency provides a user the ability to do more without having to ask for a permit increase.
- The group discusses the concept of "need" and "protective measures" and the "80%" criteria. How do you demonstrate your "need"?

ACTION ITEM: Trading will be included on an agenda for discussion at a future meeting of the Advisory Group.

13. JLARC Recommendations (Whitney Katchmark):

- **JLARC Recommendations:**
    - It should be noted that the JLARC report recommendations 7, 8, 10, 12, 13-16 all dealt with the permitting process and criteria. Most salient were recommendations regarding the following:
        - Making human consumption a priority.
        - Creating a percentage cap on individual permittees of overall withdrawals.
        - Priority allocation for the greatest economic benefit.

Discussions included the following:

- It was noted that the discussions of the workgroups on these recommendations was either neutral or negative.
- It was suggested that if there are any of the JLARC recommendations that this group as a whole can quickly coalesce around then that would be good but it doesn't sound like there is any coalescing around any of these three recommendations. To the extent that there are JLARC recommendations that this group could get behind then we should, but there is nothing that constrains us or compels us to get behind any of them.
- Relating to "human consumption" - The definition of beneficial use was discussed. The Code already says that "human consumption is a priority". The idea may be alright in the abstract but the problem is how do you "operationalize" that concept?
- The concept of optimizing or prioritizing the use of specific aquifers was discussed by the group. The differences in the quality of the water available from the various aquifers and the preferences for one over the other was discussed.
- It was suggested that we need to learn from the existing "Nutrient Trading Program" in our discussions of the trading concept related to groundwater.

- The concept of having an allocation allotment for growth was raised.
- The trading discussion should also include a discussion of planning needs related to trading.

14. Summary – Where Do We Go From Here – Next Steps (Scott Kudlas):

Scott noted the following as things that staff would work on for the next meeting:

- Provide a detailed budgetary needs for the data needs and prioritize those needs;
- Draft options on the permit terms;
- Start drafting the chapter section of the Problem Statement;
- Future Discussion – Human Consumption;
- Future Discussion – First Come/First Serve Model – Economic Development
- Flesh out the Outline – Put Meat on the Bone of the Outline

Anything else for the good of the order: Nothing additional was raised.

15. Public Comment: No public comment was offered.

16. Meeting Adjournment: Scott Kudlas thanked everyone for their attendance and participation in today's meeting. The meeting was adjourned at 2:25 P.M.