

Minutes
Saltwater Intrusion Steering Committee Meeting
September 15, 2010

Attending: David Baize, Brian Baker, Richard Cyr, Kelly Ferda, Rusty Hildebrand, Donna Katula, Jim Kennedy, Jeff Larson, Steve Liotta, John Sawyer, Charles Sexton, Mark Smith, Paul Vogel.

The meeting was opened with introductions, then approval of the agenda.

David Baize opened with a presentation summarizing the Coastal Sound Science Initiative and options to manage the aquifer that came out of the initial Saltwater Intrusion Stakeholders meeting on August 6, 2010.

The following is a summary of the meeting conversations:

Has the water balance for the aquifer been determined?

We are really talking about sustainable yield. Sustainable yield is a determination of how much can be taken out of the system without creating an unwanted impact.

We want to balance the system. Sustainable yield is much more complicated than just a water balance as the salt water movement must be considered.

There has been a significant reduction in pumping but what has happened to the static water level in the wells?

That data is available. Reductions have been made, but there may be more needed to reduce saltwater intrusion.

There doesn't appear that there has been a history written of the process for managing saltwater intrusion. We need to show how much has been pumped.

There is a history that has been recording back to 1971.

Everything is now centered on what has happened since the model has been completed. For moving forward, start with the model.

We need a longer history so we can explain it to the public.

A complete history also educates the Committee members.

Dr. Kennedy advised that he has a detailed work plan that contains the history of saltwater intrusion since 1968.

We need to have a history so we can respond to inquiries.

Dr. Kennedy will polish the existing history and provide it to the group.

Not just a history of groundwater use itself, but also an effort to describe the work that has been done. The steps that have been taken to remedy saltwater intrusion should be identified. This did not just happen in the last 2 years. It began in the 1940s. We will not solve this overnight and knowing what has been done in the past is important. Whatever we come up with will need to be communicated to the public and it has to be financed. The City of Savannah has a report from the 1940s that mentions saltwater intrusion.

History is important to a point, but we don't want to spend the next 6 months building a history. For example, it wasn't until the 1960s that people began using wells on Hilton Head. We don't want to get bogged down in history.

History is great, but it should not be written from the perspective of comparing states.

Thought is being given to calling a meeting with every elected official in Bryan, Liberty, Effingham and Chatham Counties [all in Georgia] and asking Dr. Kennedy to give a presentation on saltwater intrusion.

If any legislative action is needed to move this process along, it needs to start in the fall for legislative action in January. (A newspaper article was read about using Aquifer Storage and Recovery (ASR) on Hilton Head).

ASR is a critical tool. Georgia may want to revisit their current restrictions on ASR.

To understand ASR in Georgia, people need to know the history.

Let's agree to merge the two states' histories.

There is a good history available on the USGS study.

Need a good summary of groundwater use to include in the history that Dr. Kennedy is working on.

The message heard after the USGS model was completed was that it will take hundreds of years for saltwater to get to Savannah. However, we currently have saltwater intrusion in other areas in the region. After this meeting, we will be able to tell others what the Committee's goals are.

Last meeting we adopted a resolution to manage the aquifer within the sustainable yield. We discussed a process to manage the aquifer. We can't announce the solutions yet, but we can identify the process.

If the Committee wants to, they can identify Jeff Larson and David Baize as the contacts for consistency.

The Committee members would appreciate several talking points for their discussions with others outside the Committee.

Each stakeholder has the most knowledge of what has been done individually. Other inquiries about the process can be sent to Jeff and David.

We need to establish an updated management goal: Manage the aquifer within the sustainable yield.

Is reversing saltwater intrusion achievable?

No, not realistically achievable.

One idea is engineering controls like barriers to keep saltwater intrusion from progressing.

Some areas already have problems with saltwater intrusion.

Water withdrawal reductions must be a part of the solution.

We could add language to the goal to manage the aquifer to include legislative cooperation and public education.

You can have many goals that include education.

Informing the Savannah River Committee and Saltwater Intrusion Stakeholders Committee can also be an education goal.

When we talk about what our goals are, it would be very helpful to know how much is being pulled out of the aquifer to include agriculture. We don't know how much water is being used by agriculture in Georgia.

Georgia permits agricultural withdrawals but don't know how much is being withdrawn. However, Jim Hook with the University of Georgia has done analysis of wetted acreage etc. and we can use that to determine the agriculture water demand.

Why isn't agriculture represented on this Committee?

Actual agricultural withdrawals are very small in this area.

We need an accurate withdrawal amount for each sector.

South Carolina has good agricultural permitting and withdrawal data. Domestic usage is much harder to come up with. There isn't legislation that requires individual houses to report water use.

We need to acknowledge that domestic use is out there.

In the model, there is an estimate of domestic usage put together by USGS.

We need to get the best numbers together but we may not have numbers for domestic use.

Domestic wells are used for other things, such as car washes.

Are they all in the Upper Floridan? Many are probably in the surficial aquifer.

Ordinances on Hilton Head prohibited Upper Floridan wells. They thought the state would enforce the ordinance which the state is not able to do.

There are no individual wells in Broad Creek because of a covenant.

There are private wells in some districts.

Would there be an interest in eliminating private wells?

Everyone owns water under their property, so it would be difficult to change the use of private wells.

Things can change. Georgia has implemented some management strategies even though they may be politically challenging. We need to identify all management strategies and then deal with the implications.

We can quantify the effect domestic and agriculture use actually has on saltwater intrusion.

We can test the sensitivity of the model and determine the effect.

Managing withdrawals from domestic wells and agricultural wells are a management strategy.

As reductions take place by those who are permitted, agriculture and domestic wells become more of a contributor, by percent, to the problem.

With the Georgia State Water Plan, we have the opportunity to identify all issues, including domestic and agricultural withdrawals.

The spotlight will be focused on those issues as the process proceeds.

This is why it is important to educate the public.

What is the likelihood of this committee to be in place after the new Governors are elected?

Not sure, but we need to act quickly so status reports and approaches are readily available.

Need to make sure all the numbers are accurate because they are the basis for the models.

Suggest we adopt a new goal: Manage the Aquifer within the sustainable yield. Objectives could include:

- Determine the sustainable yield
- Education
- Define agriculture and domestic use
- Establish a baseline history

If the Committee has a game plan and is working together, the decision makers will see the value of continuing the work.

Limitations for managing saltwater intrusion will fall on those that already have permits. Many factors dictate what the permit will be. We don't need to rush into a solution.

If we have a process, we can suggest to the elected officials that they should allow the process to continue.

Would identifying water conservation be good? In order for communities to grow, they need water conservation.

Water conservation would be a method to achieve the goals.

Georgia has language in the Water Plan that can be used.

If rates are set high enough, it will encourage conservation.

Jeff Larson and David Baize will frame up the goals.

How do we achieve our goals?

Georgia and South Carolina can do model runs.

Doctor Spruill used a similar process in North Carolina. The conclusion from their model was to reduce pumpage 75%. They took a stepwise reduction by reducing 25%, then recalibrate the model, then reduce 25% and recalibrate, etc. That might be a good example for us. Based on 2000 baseline, pumpage needs to be reduced 90%.

(Jim Kennedy reviewed model runs he did the previous evening in preparation for this meeting, showing how modeling could be useful to the committee.)

Can we "ballpark" using a previous baseline?

We can work on scenarios that can be modeled and get the results back to the Committee.

It would be great for the Committee to accept Dr. Spruill's approach of gradual reductions and assess the impact of each reduction goal.

We need to reduce pumpage, but let the scientists and regulators tell us what that should be.

This Committee can tell scientists and regulators what the solutions would be in their areas to achieve our goals.

We are working on developing a sustainable yield.

Can we use water levels in wells as a measure of progress?

If you reduce pumpage, water levels will recover quickly.

We could establish "sentinel" wells. The water level in those wells will measure progress.

We have many wells to choose from for "sentinel" wells.

Do we have historical data to show water levels in wells coming up because we have reduced pumping?

Yes, that data is available.

From 2000 to 2010, has the water level in the wells gotten better or worse?

It is a small increment of what we need to do. We will need to include large reductions. We can use water levels in wells as indicators.

This is the most heavily studied area in the nation.

It is also the most productive.

Even if we increase water levels, do chlorides still remain?

Yes, chlorides still remain.

Just because water levels rise, that does not indicate water quality will increase, but it will not get worse if water levels recover to the correct level.

The goal is to get water levels high enough in wells where gradient is no longer toward Savannah.

Everything we have discussed so far is in relation to horizontal movement, but downward movement of chlorides is also a problem. We need to look at both horizontal and vertical movement. We should look at this in three dimensions.

We can run horizontal models, then give the data to Camille Ransom to incorporate into the vertical model.

We need to determine a sustainable yield. Before the committee recommends any reductions, the data needs to be reviewed by committee before we decide on a percent reduction.

Sustainable yield will depend on where you withdraw the water.

There have been discussions about reducing up to 90%. For some industries, reductions of that magnitude may not be feasible because the industrial process depends on the quality of groundwater. Reductions of that size may put the industry out of business.

We can reduce 25% and see what happens.

Need to know what the sustainable yield is first.

Engineering solutions are also a possibility, such as barriers.

We should not take engineering solutions off the table.

Can you clarify why International Paper needs to use groundwater and not surface water?

Donna Katula explained that IP's process needs very high quality water which is inexpensively met with the use of groundwater. They would have to build their own treatment plant for surface water treatment.

Public providers also have similar issues that industries have.

The point is that no one should be made to bear the whole burden. There are solutions. For example, the natural gas providers increasing bills to cover the costs for cleanup of the Trustees Garden in Savannah.

We will all feel the pain, but how much and within what timeframe? When do we want to take the first steps to educate and raise money? How long will it take? Can we agree on Dr. Spruill's concept? How can we fund interim goals to get to the ultimate goal?

DHEC and EPD should not tell the committee what the incremental reduction should be. The committee should come up with the target.

We know the ultimate target.

We can create a menu of options.

First target should be what it would take to meet the sustainable yield.

Next steps should be to write the history and describe process, identify all management practices, identify all resources available to implement management strategies and identify funding sources.

There is a sense of urgency to get this done because the plumes are moving and we don't know the longevity of the Governors' Committee.

By next meeting:

- Begin drafting a history
- Identify goals and objectives
- Generate general options for management practices
- Initial determinations of the sustainable yield.

Next meeting is October 19 at the Trade Center in Savannah at 10 am.