MEETING OF THE NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION

Raleigh, North Carolina
January 12, 2012
Minutes

The North Carolina Environmental Management Commission met in the Ground Floor Hearing Room of the Archdale Building, 512 North Salisbury Street, Raleigh, North Carolina. Chairman, Stephen T. Smith presided. The following persons attended for all or part of the meeting:

COMMISSION MEMBERS:

Christopher J. Ayers	Tom Ellis	Kevin Martin	Mayor Darryl D. Moss
Donnie Brewer	William L. Hall	Dr. David H. Moreau	J. Dickson Phillips III
Marvin S. Cavanaugh	Steve P. Keen	Dr. David Peden	Clyde "Butch" Smith, Jr.
Marion E. Deerhake	Dr. Ernest W. Larkin	Dr. Charles H. Peterson	Stephen Smith
			Steve W. Tedder

DIVISION OF WATER QUALITY:

Bradley Bennett	Alan Clark	Elizabeth Kountis	Jay Sauber
Janice Bownes	Nora Deamer	Matt Matthews	Coleen Sullins
Ted Bush	Bethany Georgoulias	Sandra Moore	Lois Thomas
Kevin Bowden	Deborah Gore	Diane Reid	Julie Ventaloro
Connie Brower	John Huisman	Jon Risgaard	Chuck Wakild
Amy Chapman	Steve Kaasa	Jason Robinson	

DIVISION OF AIR QUALITY: Sheila Holman, Glen Sappie, Joelle Burleson, Angela Terry, Michael Petratjic

DIVISION OF WASTE MANAGEMENT: Ruth Strauss, Debra Watts, Betty Gatano, Linda Smith

DIVISION OF WATER RESOURCES: Tom Reeder, Sarah Young

ATTORNEY GENERAL'S OFFICE: Frank Crawley, Kathryn Jones

I. Preliminary Matters

Chairman Smith: Chairman Smith called the January 12, 2012 meeting to order at 9:05 a.m. He then read the Ethics General Statute § 138A-15, which mandates that the Chairman inquire as to whether any member knows of any known conflict of interest or potential appearance of conflict with respect to matters before the Commission. Commission members were asked if they knew of any conflict of interest or appearance of a conflict to please so state at this time.

12-01 Request for Adoption of Amendments to Open Burning Rules to Incorporate Session Law 2011-394 Requirements

Chairman Smith: As you will remember the General Assembly in the last session made amendments to the open burning setback requirements. Included in that legislation was a directive that we modify our rules to comply with the statutory changes. The statutory changes are already being implemented. This is a matter of housekeeping, cleaning up our rules to comply with statutes. Our rules will not be enforceable as presently written and from my perspective it makes sense for us to proceed accordingly. Do you want to do a brief presentation to it?

Joelle Burleson: Only if the Commission desires as such.

Chairman Smith: The first thing we're dealing with is the amendment of the rules. Once we deal with the amendment of the rules we will consider the resolution that we discussed at the last meeting, a draft of which went out previously. But we're dealing with those separately. Any questions of the amendment of the rules?

Dr. Peterson: I make the motion that we amend the rules as presented by the department in our package.

Mr. Ellis seconded.

Chairman Smith: asked for discussion and a vote. The vote was unanimous and the motion carried.

During our discussion in November there was some concern expressed about the fact that the amendment to the statute is heading in the wrong direction as far as public health matters are concerned. There was discussion of us considering a resolution asking the General Assembly to reconsider its decision in those setback reductions, open burning setback reductions. There was also discussion of concern about whether the General Assembly had considered any scientific information and reports in making this decision. With all of that several folks undertook to draft a resolution and it has been edited by several other people, so it has been sent out to you for your consideration, and I'll turn it over to you for discussion.

Ms. Deerhake: We did discuss this yesterday in committee a bit and I would pass along to the Commission members a request for a comment by Mr. Cecich who could not be here today. That was that he thought the resolution could benefit from an additional whereas statement by stating that based on the review of the legislative record that was available there was not any

indication of a scientific analysis to support the action of the legislature. I don't know what the best way is to phrase that. If the Commission members agree in substance with Mr. Cecich's comment we could ask that we get some assistance in drafting that statement to add to the resolution. All in all we did not vote in the committee. It was not a committee, not a charge to the committee, however we did, I believe, reach consensus that we are in agreement with the thrust of the resolution.

Mr. Keen: Was there any indication of a scientific support study? Is that what you're saying?

Ms. Deerhake: That's right.

Mr. Keen: What would be the process of the General Assembly to go about having that support study done?

Ms. Deerhake: They would have to call for it I would think. But I'm thinking that Mr. Cecich was saying that there was no mention of scientific justification for the change in distance.

Dr. Peterson: Which if there was would be something that would guide us to look at and feel more comfortable with the action that we're asked to take and did just take. So it doesn't need to be necessarily a study but just information on which they base their feeling that this additional level of exposure was acceptable without undue human health impacts.

Chairman Smith: I think Mr. Cecich's concern was that it would not be unusual at all for the General Assembly to have people come before committees to make presentations. I won't call it testify because they're typically not put under oath, but to make presentations for or against something that's under consideration. That would be one way the General Assembly receives information that helps it to form its decision. Another is like what's being done with hydraulic fracturing and they can order a study and ask for a report back by a certain time.

Dr. Peden: In this particular case the data already exist. This particular study would result with staffers actually just reviewing the information, asking for experts' help and maybe open up for another public comment to let people pro and con actually comment on it. This is not the kind of study where I would anticipate one needs large sums of money to commission a whole new scientific study about the concentration of air particulates 500 vs a 1,000 ft away from a fire.

Mr. Tedder: I'm sure I will be in the minority on this. I guess I kind of witnessed a different type of session this past year as the most antagonistic and alienation type session that I've witnessed in thirty some years. I'm not sure that this is not maybe throwing a little gas on the fire. In my 30 some, 37 years working here I could probably write a book on the number of statutes, rules and policies that I disagreed with but we moved forward with. This particular one is already on the books. Staff is directed to already carry out these 500 vs 1000, and I'm not sure it really serves a positive purpose to pass the resolution. So I'm going to vote against it not so much from…I don't know what they considered. I'm not sure anybody in here knows what was considered during the committee discussions. We set thresholds about anything you could dream up within our policies and rules. Whatever any number anybody picks this could have been 990 ft, somebody would have disagreed. So that's my two cents worth on it.

Dr. Larkin: Just on this particular issue, I do know an amendment that I'll propose later, but to deal with this, my question is, are we really sure that there was no consideration of any scientific evidence? If we are then I don't have a problem with saying that it's an issue. If we're not sure about that I kind of hate to put something in there that we're not sure about, have somebody come back and say yes we did, here's what we did and that sort of thing.

Mr. Ellis: I wasn't in the Air Quality Committee meeting but if it was phrased properly as a question as to what information was used so that we may consider it in further deliberations, that would be a non offensive way of approaching this.

Chairman Smith: Would you say that again? I didn't quite follow where you were going.

Mr. Ellis: Basically, we ask them for the information they considered rather than stating that it didn't seem there was any scientific information. This way if we're allowed to reconsider it in the future we can take into account the information they used in making their decision.

Dr. Peden: I will say the resolution as it stands from my perspective is fine with me. I appreciate the comments that the other Commissioners made about not poking a stick at the process, the legislature. I think the resolution as it stands does state what I think is the key issue which is we're concerned that 500 ft is not appropriate when 1000 ft is. Stating that concern doesn't necessarily throw, there's some gasoline, but it's not the same gasoline as saying that you guys didn't think about anything. They may have thought about all kinds of things and you're quite correct. I wasn't there so I don't know what they considered. But the outcome of whatever they did is law.

Dr. Peterson: On the Cecich suggestion I think if none of us know the full record we ought to not include that suggestion in our whereas and I don't have the full record of deliberation in what transpired at the General Assembly. As to Tommy's thought, it's a good one but I think it doesn't pass the Tedder test which is to say, that one seems like throwing fuel on the fire so to speak in the sense that it suggests that the General Assembly serves at our pleasure in a way, rather than vice versa. To ask that they send us their information seems to be a little bit beyond what we want to presume. Whereas simply speaking to the arguments here doesn't get me to Tedder's level of discomfort and I support the resolution as it has been crafted, and I make the motion that we move it.

Chairman Smith: We have a motion by Dr. Peterson and a second by Mr. Morse with the resolution not including the Cecich amendment.

Dr. Larkin: I would like to suggest an amendment to the resolution as it is and it's in the fifth whereas where it says, "negative health effects of exposure to smoke and open burning are potentially greater at closer proximity than at a greater distance." What I'd like to do is suggest that we should replace the word potentially with the phrase "likely to be" so that we say "the negative effects are likely to be greater at closer proximity." Based on the discussions that we have had before I think that's actually true. I don't think we'd be having this resolution if we

didn't think it was likely to be worse. I feel we should say so and I make that as a motion with an amendment to the resolution.

Dr. Peterson: I would accept that as a friendly amendment.

Chairman Smith: (asked for further discussion.) We have a motion and a second to resolve as written with the amendment Dr. Larkin suggested but without the Cecich amendment. (Hearing no further discussion there were 3 that opposed and the remainder agreed. The motion carried.)

Also note before we leave this item all together that we have received dated January 5, 2012 a submission of request for information. One of the things we discussed in November was seeking additional information on the impact of this reduction from 1000 to 500 ft. We developed something of a record of scientific and public health information relating to that and we've received one such submission that came in from the North Carolina Conservation Network. I think that has been disseminated to you guys so that's the beginning of what we will collect relating to this. We did not decide in November what we would do with what we are collecting but nonetheless I make that note.

Mr. Morse: How was that formatted to us?

Chairman Smith: It came to me and to Ms. Deerhake as the Air Quality Committee Chair in a pdf copy of a letter with a pdf copy of what appears to be a scientific study report, "Human Health Impacts of Forest Fires in the Southern United States." If it was not forwarded to all of you it will be. I thought it was.

Ms. Deerhake: I did not forward a soft copy. I did pass out some copies yesterday after the meeting and I did not find you. You had to leave early. Ms. Burleson has copies.

Chairman Smith: Ms. Burleson would you email a copy to Mr. Brewer?

Mr. Brewer: I just wanted to say I did receive an email with the copies.

Chairman Smith: Well let's make sure everybody has a copy including the members that aren't present.

12-02 Request Approval of the Proposed Reclassification of the Haw River in Alamance, Caswell, Guilford, and Rockingham Counties (Cape Fear River Basin) to Class WS-IV and WS-IV CA

Mr. Ellis: In March and May 2011, the Water Quality Committee and the Commission, respectively, approved the request to proceed to rule-making for proposed WS-IV critical area and protected area reclassification of the Haw River in Alamance, Caswell, Guilford and Rockingham Counties. This is within the Cape Fear River Basin.

On the map is the area proposed to be affected by this reclassification. The dashed black lines on the map are the county lines. The river flows from the middle of the left hand side of the slide to near the center of the bottom of the slide. The critical area shown is the red semicircle area that drains to a star which is the intake itself and the protected area boundary

is shown as the black and white pattern line. The City of Greensboro requested the proposed reclassification in order to recognize and allow continued use of an existing emergency potable water supply intake on the Haw River. During the drought of 2002, the City of Greensboro received permission from the former Public Water Supply Section of the Division of Environmental Health and funding from the Division of Water Resources to construct and use an emergency intake on the Haw River.

The waters draining to the intake are currently classified as Water Supply–V Nutrient Sensitive Waters due to the Jordan Lake rules. Under current regulations, the source must be classified as either a WS-I, WS-II, WS-III, or WS-IV to be used as a public water supply. Review of existing state and local government regulations applicable to these waters, including the Jordan Lake rules that apply to the entirety of the proposed watershed and the Phase 2 Stormwater Program that applies to approximately 40% of the proposed watershed is shown in the hatched on the slide. This has led us to the proposed WS-IV designation of these waters. DWQ studies indicate that the subject waters meet the WS-IV water supply water standards.

If these waters are reclassified, Alamance, Caswell, Guilford and Rockingham Counties which are the local governments with jurisdiction of proposed WS-WS; would be required to modify and they have agreed to modify their WS-WS protection ordinances within 270 days of the reclassification's effective date. In addition if these waters are reclassified Alamance County would be required to implement the Jordan buffer requirements within its portion of the proposed area. Restrictions for wastewater discharges and new development, this will apply in the entire proposed area. No new permitted landfills or land application sites will be allowed within the WS-IV critical area. In the proposed WS-IV watershed there are three NPDES wastewater discharges shown as yellow dots on the slide. These are within the proposed protected area. They would not be impacted by this proposal. There are also two animal operations in the proposed area that would not be affected by the proposal. These facilities are located in the proposed protected area and are shown as purple dots. In addition, no named planned wastewater discharges or developments would be impacted by the proposal. On September 29, 2011 Division staff and I conducted a public hearing in Reidsville, North Carolina. The purpose of the hearing was to receive public comments on the above mentioned proposed reclassification and the associated fiscal note. Of the five people who attended the hearing one person spoke and that person did not indicate a stance for or against the proposed reclassification. During the comment period the two letters received during the comment period also did not take a stance on the proposed reclassification. The Report of Proceedings which was sent to the members of the EMC prior to today's meeting include these letters received and further details on the proposed reclassification.

If reclassified, the proposal's effective date is estimated to be March 1, 2012. Based on consideration of the comments and available data, staff and I recommend and I make a motion that the proposed reclassification of the Haw River as described in the agenda item and Report of these Proceedings be approved.

Chairman Smith: Thank you Mr. Ellis. A motion was made by Mr. Ellis and seconded by Mr. Tedder. Are there questions or discussion?

Dr. Moreau: The assertion is that WS-V cannot be applied in this case. It is the regulation that prevents WS-V from being the appropriate classification. It may be somewhere in there.

Elizabeth Kountis: Unfortunately I did not bring my Redbook down with me. I do know it is in the 2B .0100s, the .0104 section.

Dr. Moreau: I thought. My recollection is WS-V was the default classification for situations just like this.

Elizabeth Kountis: The WS-Vs are not supposed to be used for public water supplies.

Dr. Moreau: Why is it a WS if it's not water supply?

Elizabeth Kountis: Well you know for the Jordan Lake rules WS-V was put into place and the three definitions for WS-V, one of them is those waters upstream and draining into WS-IV waters. So Jordan Lake has its own WS-IV associated with it. Then also WS-V's waters drain to it. You've got an intake here and so right around the intake is where you're going to need that WS-I-IV.

Dr. Moreau: I don't object to it. My recollection was that the WS-V was put in exactly for this reason where there was no way to take water out. There was no way to really deal with the upstream dischargers.

Mr. Ellis: The City of Greensboro felt that they needed that change.

Dr. Moreau: I'm not objecting to it. If they want it they can have it but I'm just curious why we had to go through the process in the first place. It was already a WS-V.

Elizabeth Kountis: Like I said you've got an intake there that needs the protection for a public water supply. The waters above it drain into it but again right around the intake you're looking at a public water supply.

Chairman Smith: The three NPDES permit holders from those dots, what are they?

Elizabeth Kountis: Two of them are small domestic discharges. One of them is for the City of Reidsville.

Chairman Smith: Further discussion? (The chairman asked for a vote which was unanimous and the motion passed.) Thank you Mr. Ellis for your service as a hearing officer.

Mr. Ellis: I want to compliment the staff even though we had a rather poorly attended hearing. They were ready if a hundred people had shown up. We had the support of all the jurisdictions of local governments before we got started but surprises do happen at public hearings.

12-03 Request Approval of the Proposed Reclassification of the South Fork New River in Ashe and Watauga Counties (New River Basin) to Class WS-IV and WS-IV CA

Chairman Smith: Let me start before we hear the presentation. We received Tuesday night a letter from Mr. Williams with enclosures and that was sent to me on Wednesday morning, then out to you all on yesterday. You've had an opportunity to see that. Among other things Mr. Williams makes a number of assertions about his or his interest's inability to be heard in the process, and so I would like for Ms. Kountis to begin by speaking to that when she makes her report, and then go forward with the full report.

Elizabeth Kountis: I will go ahead and comment on that letter. As Chairman Smith mentioned we did receive a letter from a Mr. Michael Williams asking to have this presentation postponed. He stated that not all of his concerns had been addressed nor were considered nor included in the Report of Proceedings which we sent out to each of you prior to today's meeting. A majority of his concerns related to water quality above the proposed intake and outside of the proposed watershed as well as the environmental assessment process. All of his comments and all comments during the comment period were included in the Report of Proceedings. In addition, his concerns as well as the remaining commenters' concerns were all considered. They're in the Report of Proceedings and will be discussed further in this presentation.

Chairman Smith: So Mr. Williams made several written comments that are in the record. Is that correct?

Elizabeth Kountis: That's correct.

Chairman Smith: Alright. Then Mr. Morse served as the hearing officer. Are you going to make the report?

Mr. Morse: Yes sir, but let me speak to this issue. I had the opportunity to read the entire record and all the submittals by the public and the points that Mr. Williams brought up, his comments were in the public record. In fact I didn't see anything different from his written comments that he made vs his claim that was not presented to the public record. So my review of the public record included everything that he suggested in this most recent email, except for one where he indicated that part of his comments were not part of the public record. Of course I can't speak to that but 99% of his comments were in the public record.

Mr. Keen: In the due process that has been taken, is there a timetable from beginning to end that would include all Mr. William's reports. Is there a rule there?

Mr. Morse: In the public hearing notice, of course we held the public hearing and following the public hearing I believe there's a 30 day period where additional public written comments can be submitted as well. So there is a process in which people can either speak at the public hearing, have their comments be part of the public record, and then there's a 30 day period after the public hearing where additional comments can be part of the public record. Am I correct on that?

Elizabeth Kountis: It's an entire 60 day comment period and the public hearing is generally held in the middle of that.

Steve Keen: Did that time expire?

Elizabeth Kountis: He got in all his comments within the comment period. This letter received this week is outside of that comment period.

Steve Keen: Thank you.

Summary (Jeff Morse): In March 2011 the Water Quality Committee and the Commission, approved the Town of Boone's request to proceed with rule-making for the proposed reclassification of the South Fork New River. Elizabeth Kountis will give a brief overview of the location, regulation, concerns associated with this classification, and then I will provide my input and recommendations as the hearing officer for this proposal.

Elizabeth Kountis: On the screen is a map of the area proposed water supply watershed. The dashed black line traversing from the upper left hand corner to the lower right hand corner is the Ashe/Watauga county line. The river flows from the bottom of the center of the map up to about the actual map center, follows the county line and then departs out the right side of the map. The Critical Area is the red semi-circle and the star is the proposed intake and then finally the protected area is this black-and-white patterned line. A portion of the river to be reclassified currently is a High Quality Waters, or HQW, classified area, which is shown as the hatched area. This area includes lands and waters located one mile and draining to the classified HQW waters. In addition, a special management strategy with only HQW wastewater discharge provisions is applicable to the entire proposed watershed outside of that hatched area. Neither the HQW designation nor the special management strategy will be affected by this proposal. If these waters are reclassified, restrictions for dischargers and new development will apply throughout the entire proposed area and no new permanent landfills or new land application sites will be allowed in the critical area.
In this proposed area there are no current discharges and no plans for discharges or developments that would be impacted by the proposal.

On August 30, 2011, Division staff and Mr. Morse conducted a public hearing in Boone to receive comments on the proposed reclassification. Of the 43 people who attended the hearing, six speakers appeared to not support the proposal, another speaker had concerns but did not oppose it and six additional speakers appeared to support it.

During the comment period, several people provided comments numerous times. Please note that after the fact, staff learned that the proposed rule that was submitted to the state's Office of Administrative Hearings and as part of the fiscal analysis, on EMC's behalf did have a minor typo. The "I" from the acronym of Water Supply 4 was inadvertently omitted from the proposed critical area. But no comments were received about this typo and all other information provided to the public was correct. Division of Water Quality received eight letters plus the resolution that you received today as an amendment to the Report of Proceedings that provided a neutral or positive position on the proposal. Thirty-seven letters and a petition containing 188 signatures stating concerns or a stance against the proposal were received. These comments contained several issues of concern and can be addressed by referencing information already presented by staff or publicly available. (Comments and responses were summarized.)

Now Mr. Morse will provide his input and recommendations.

Mr. Morse: I'd like to point out two observations I made during this process that are not included in the Report of Proceedings. At the public hearing the forty some people that were there one of the comments that I made during the opening part of the public hearing was that we would take very seriously all their comments. We would not just rubber stamp the proceedings and that was a commitment that I made during the public hearing. I want to express my appreciation to the staff and particularly Elizabeth with her leadership on our commitment to ensuring that every one of the questions were answered and responded to, not just superficially. As a matter of fact I've had a number of meetings with Elizabeth and also with other staff members going over these specific questions that were raised during the public hearing. In my opinion there were two consolidated issues that I gathered were the crux of the concerns of some of the locals, people that lived around Todd in the affected area. This is outside of the Blowing Rock area. One of course was the ability of that river to sustain enough water supplies for both recreational use and aquatic use during droughts. As a result of that concern we had a special meeting, a telephone conference with the Division of Water Resources where I asked them to go back and double check their numbers, specifically in the evaluation of the water quantity issues during droughts. I was assured on a second time that as Elizabeth mentioned in her report there is an adequate supply; we only used like 1% of the capacity during severe droughts. They went back and did modeling on that. That was one of the major concerns raised. I think the data supplied by the staff assured me that during severe droughts that the fact that this water intake would not have a detrimental effect on water quality and water quantity took care of my reservation on that issue.

The second issue that I thought raised consolidating a lot of the comments was the data that was used to support the request of the City of Boone. I asked the staff to go back and reassure to me that what they have provided, what the consultants provided, and what the City of Boone provided were justifiable in proceeding with this reclassification. My understanding on my basis was that yes they met the threshold. Now, of course the economy has turned, things have changed since this original report was submitted but we all expect that the economy will turn, and that development will be instituted and the fact that Boone did reach those threshold but are lower than that at this point in time doesn't mean we should not proceed or the city should not proceed with their plans to protect their ability to provide safe drinking water to their constituents and to take care of growth. Based on that premise I felt that we have adequately addressed that issue and especially as a city manager I understand the need of cities to proceed with developments, especially if they did meet that threshold at one point.

Based on consideration of the comments and available data, staff and I recommend that the proposed reclassification of the South Fork New River as described in the agenda item and the Report of Proceedings be approved. If reclassified the proposed effective date is estimated to be March 1, 2012.

Chairman Smith: Would you make that in the form of a motion?

Mr. Morse: It is the form of a motion.

Chairman Smith: I have a motion made by Mr. Morse. Mr. Hall seconded. Discussion?

Dr. Moreau: Would you elaborate on the protection of the river for recreational purposes during drought?

Elizabeth Kountis: There was some modeling done and Fred, I'm going to bring you up here. The DWR did specifically look at recreation so I'm going to let you do that.

Dr. Moreau: It's just not clear from my cursory review of this report just how that was done.

Fred Tarver: DWR requested the consultant to go out and do some channel profiles of the river at the proposed intake and at riffles below the proposed intake. They also modeled the waters surface elevation at various flow regimes and also with their proposed withdrawal. It showed that there was a very nominal reduction in flows based on those channel profiles.

Dr. Moreau: Is there any low flow protocol associated with this?

Mr. Morse: Mr. Chair I can speak to that. In my conversations with the City of Boone officials and Blowing Rock, all municipalities are required to have drought response plans and conservation notice put into place during severe droughts. Calculating those factors into the work that was done by the Division of Water Resources we feel that in addition to the scientific data supporting the ability of the river to sustain water flow in addition with the water supply response plans during drought situations, those would only help increase the ability of the river to sustain itself. And again based on my comments earlier I asked for a special meeting with the Division of Water Resources and Division of Water Quality staff to go over that same question that you raised, Dr. Moreau, because that was one of the fundamental concerns raised by the citizens at that public hearing. I feel very comfortable with the information that I got from our staff that issue had been addressed.

Fred Tarver: One mitigating factor was that their wastewater discharge is actually upstream of the intake so it actually provides additional flows downstream.

Dr. Moreau: This is a run of the river intake, right?

Fred Tarver: Yes sir.

Dr. Moreau: Is there any storage for Boone or is that totally dependent on the run of the river?

Fred Tarver: They do have storage in Winkler Creek at their existing water supply reservoir and they do have a nominal amount of storage behind their weir on South Fork in Boone itself, but as for off stream storage I would have to defer to Boone. I'm not sure.

I think all water systems are required to maintain a certain number of days of storage off stream at their water treatment plant.

Clyde Smith: Did you have any USGS gauges you were basing this on during drought?

Fred Tarver: Yes. There's a gauge downstream at West Jefferson and the USGS made a determination based on the flow records. They came up with runoff coefficients at the site and came up with a range between 0.35 and 0.50.

Clyde Smith: What kind of model were they using?

Fred Tarver: That's a good question. I'm not sure.

Clyde Smith: My question is at that point and time did they do the history of the USGS or did they go to the past ten years when you're in drought conditions?

Fred Tarver: The USGS did the analysis. I assume that they used the entire period of record. I'm not sure what the period of record is for West Jefferson gauge. Also they may have some additional gauge records that mark at an established gauge.

Clyde Smith: We don't all basically know that. The problem they have with these models especially in mountains, they have a tentative spike. I know the model keeps out the top and keeps out the bottom but the medium in the middle no matter what you do it upsets the model. Because in the mountains you do get rain, you do get the elevation then you get your runoff. That was the only thing concerned. I know what USGS is talking about because these towns do need water for the future. That was one of my questions. I am for future water because we need it and I was just curious about the model they used and what data and everything. Just like I said, sometimes it can be misleading because the mountains, the runoff, it gives a spike to the models. When the models kick high and low it seems they got more water at certain times.

Fred Tarver: All the analysis was done by USGS in house. We deferred to them, their experience and knowledge.

Clyde Smith: Ok. Thank you.

Chairman Smith: We have a motion by Mr. Morse and a second by Mr. Hall. (The vote was unanimous and the motion passed.) Thank you Ms. Kountis and thank you Mr. Morse for your services as hearing officer.

12-04 Request for Approval of Local Programs Implementing the Falls Lake New Development Stormwater Rule, and Delegation of Further Approval Authority to the Director

<u>Summary</u> (John Huisman): I'll start out by giving a little bit of quick background on the Falls Lake watershed and the nutrient management strategy in place there, specifically the new development rule, stormwater requirements, highlighting the differences between the Falls Lake stormwater rule and the existing Neuse stormwater rule. I will also cover the program submittal requirements with an overview of what the local governments submitted in their local programs to DWQ for approval and review, and I'll conclude with a recommendation for approval.

As you know, the Falls Lake watershed is located in the upper Neuse River Basin. It's a 770 sq. mile watershed that includes 14 different jurisdictions. We have 8 different municipalities, 6 different counties which all of these are subject to the Falls Lake new development stormwater rule. Just to kind of help orient you, Raleigh and Wake County are located at the lower end of the watershed. The water intake that serves over 450,000 residents in Wake County is located at

the bottom of the lake. NC-50 bisects the lake and I-85 runs through the top of the lake. The entire lake is not meeting the state's chlorophyll-a standards, has violations throughout the lake up from high inputs of nutrient loading. As such we produced, developed a nutrient management strategy that was approved by the EMC back in December of 2010 and the RRC then went into effect in January of 2011.

There are the 8 rules make up that nutrient management strategy that has been approved and effective as of January it calls for reductions in nutrients from both point and non point sources. The purpose of the discussion today is to focus in on the requirements of the new development stormwater rule and the programs that the local governments submitted to enforce those requirements. So the new development stormwater rule in the Falls requires all of those 14 local governments to implement stormwater programs for new development activities and they do that through enforcing the requirements through the local ordinances. They submitted those ordinances in guidance documents to DWQ for review and approval. Those programs that they submitted addresses the rule requirements that are laid out in the Falls Lake rules. For new development specifically they establish the post construction runoff rates the new development projects have to meet for nitrogen and phosphorus through site design, BMP implementation or doing nutrient buy downs. They also include the land disturbance thresholds, how much land the construction project disturbs before it has to meet those N&P rate targets. Also included in the programs from the rule are the onsite treatment requirements about how much onsite treatment has to occur on the project site before the developer is allowed to go off site and do a nutrient buy down through the Ecosystems Enhancement Program or private mitigation bank. There's also the requirement of peak flow matched for the one year 24 hour storm and also making sure that the construction projects are complying with the existing Neuse buffer rules. Because in Falls Lake we do not have a new buffer rule. We're using the existing Neuse buffer rule that's been place for the entire Neuse River Basin. So this is a side by side comparison of the requirements in the Falls Lake new development stormwater rule compared to the new stormwater rule. I'll run through this real quickly for you and point out the differences.

In terms of applicability under the Neuse rule that was in place for the Neuse River Basin it only applied to the municipalities that were specifically listed out in the rule, whereas in the Falls watershed it applies to all of the local governments located in that watershed, all 14 of them that were listed before.

Another difference is that the Neuse stormwater rule does not have a phosphorus reduction requirement. In Falls we have both the nitrogen and phosphorus reduction requirement. As such, when it comes to the post construction target rates for nitrogen and phosphorus there is no phosphorus target rate for the Neuse rule whereas in Falls we do have a phosphorus target rate. You will notice also that there's a difference between the post construction nitrogen rates. In the existing Neuse rate its 3.6 lbs per acre per year and Falls its 2.2 lbs per acre per year.

There are also differences in the land disturbance thresholds, again how much land can be disturbed before the developer has to meet these targets. The thresholds in the Neuse rule are one acre for residential and a half acre for commercial, whereas, they're smaller in the Falls rule where it is a half acre for residential and 12,000 sq. ft. for commercial.

Onsite treatment criteria are also different. In the Neuse we have these flat pound rates that the developer has to get down to before they're allowed to go off site to buy down the rest of the targets. In the Falls rule we require a 50% reduction of the overall reduction need for any projects disturbing more than an acre and a 30% reduction on site for any projects disturbing less

than an acre. Again the reason for the differences in these requirements is that the reduction needs for the Falls strategy are much larger than what we have for the Neuse strategy.

One final difference is the accounting tool basis which is the tool that the developer used to show they are meeting the targets. Under the Neuse implementation they've been using a tool that uses BMP percent reduction efficiencies. Under the Falls rule we're using a new updated tool that was developed by the researchers at N. C. State that uses BMP, the Best Management Practices effluent concentrations and buying reductions. This essentially represents the state of the science accounting tool that better represents what's actually happening out there in the field. In terms of the timeline for the new development rule, it's a fairly quick timeline compared to other rule implementation. As I pointed out earlier these rules went into back into effect January 2011. The division came to the EMC for approval of a model program that consisted of a model ordinance that was developed by the UNC School of Governments along with the accounting tool that I just discussed. This was approved by the EMC back in March. We then provided that to all the local governments to use as guidance so they can develop their local programs which they then turned around and resubmitted to us back in August of 2011 for our review. We are now at the point of January where DWQ is coming back to you to make recommendations for approval on these programs. Once these programs are approved the local governments have six months to (July 2012) to fully adopt and begin implementing these programs.

In terms of the submittals that we received, again there are 14 local governments in the Falls watershed and all 14 of them did submit on time their programs for approval. Out of those 14 programs 4 of the local governments used consultants to develop the programs and will likely continue to use consultants to help implement the requirements. Three of the local governments used the model ordinance in its entirety as we provided to them. The other 11 out of the 14 incorporated the different language components from the model ordinance into their existing stormwater ordinances or their unified development ordinances. So they took those pieces that they needed to make sure they were complying with the overall requirements. All of the local governments have indicated that they plan to fully adopt and implement their local program by July 2012 as required under the rule. In fact there are two local governments that are already implementing some of the Falls Lake requirements early and those are the City of Raleigh and the City of Durham.

This table shows a list of all the local governments provided to us in their program submittals and it's broken down into three categories. This first category is information that was required for the EMC to approve that they all had to provide. It covers things from administrative to programmatic issues in terms of laying out their adoption timeline and the effective date for their program, identifying whether or not they have other stormwater programs they have to comply with Phase II or water supply watershed, where in the review process they ensure compliance with the Neuse buffer rules, a statement whether or not they plan to enforce the requirements for state and federal entities, the area within their jurisdiction that the rules apply, describing their BMP maintenance inspection program, providing a list of the forms that they use for their program implementation like conservation easements and access easements. Of course we require them to submit a copy of the ordinance that they plan to use to enforce the requirements and a statement of the nutrient loading accounting tool they propose to use, and they all propose to use the new accounting tool that we provided them. This last one was an option about equivalent program options. If they already had stormwater requirements in place that they felt met the Falls rules but nobody exercised that option. This second column was an appendix of supporting information that they were required to submit but we recognized that they may

change this information down the road and wouldn't be required to come back to the EMC for approval those changes, because it's mainly administrative in terms of program contacts, the qualifications for the professionals that are implementing and enforcing the requirements in their jurisdiction, a stormwater map and a copy of all the forms that they're using. This last column was additional information that was optional for them to submit that helped us in reviewing their programs and included things like their program approval process, a list of ordinance changes which in the end actually required them to submit based on EMC's recommendation. That makes it easier for the review of where they've updated their ordinances. Description, if they did any land use planning to look at things that they had on the books which may have prevented developers from meeting the requirements, and then describing any appeals process and listing anywhere that they exceed the minimum requirements of the Falls Lake rules. So that was all the information that was included in their program submittals and that we reviewed and concerning the review process, DWQ staff had a group that worked on this. We had nonpoint source unit staff and stormwater unit staff work together in reviewing the 14 local government programs.

The steps that we followed were that the programs would submit to us in August. We got together internally with DWQ staff to review these programs over September through November. We provided comments back to the local governments by the end of November and they resubmitted revised programs to us in December. I will say that all in all the program submittals received from local governments were well organized and fairly complete. The revisions that we requested that they make were fairly minor, basically more of clarification issues that had to be addressed.

Concerning the programs themselves, all the 14 local governments are planning to use the new updated accounting tool using BMP effluent concentrations and volume reductions. Wake County had one proposal. They're slightly different. They're using the same accounting tool as the other local governments; they just modified it to address some specific volume control requirements that they have specific to their county that would allow a developer to use that one accounting tool and not have to use multiple accounting tools. But it's essentially the same tool that everybody else will be using. Out of the 14 local governments 5 of them have proposed to work together to form a stormwater utility to help them implement the rules and they plan on hiring a stormwater engineer to help with site project review in implementing the rules down the road. I have those 5 local governments listed there. Three of the local governments did indicate that they do not plan to enforce the requirements on state and federal entities and they say that's essentially because of ambiguity in the legislation language that provides authority for local governments to enforce against state and federal entities. So that responsibility will fall back to the Division of Water Quality in those cases. I did want to point out that there are two local governments, Hillsboro and Creedmoor, who indicated that they are still working on and addressing some of the minor revisions that we requested of them, and incorporating them in their updated unified development ordinances. They had indicated that they plan to submit those to us in the next two months. But for that reason we will be asking for conditional approval of their programs based on final receipt of those revised texts.

So in conclusion, our requested action of you today is that we're requesting approval of all 14 Falls Lake local government programs for new development. With the qualification that the Hillsboro and the Creedmoor programs be conditionally approved contingent upon receiving their finalized updated UDOs. Furthermore we're requesting delegation of authority of approval to the director allowing him to grant final approval of those two conditionally approved

programs, and any future program amendments and changes down the road. At this point I am happy to take any questions that you might have.

Chairman Smith: Thank you Mr. Huisman. Questions or comments?

Mr. Brewer: John, I just wanted to thank you for putting that powerpoint presentation on line so quickly.

John Huisman: Sure. You're welcome.

Chairman Smith: Thank you Mr. Brewer.

Dr. Peterson: Two thirds of those on the Water Quality Committee and interested participants heard this full presentation yesterday as well. The Water Quality Committee discussed it, acted on it and unanimously recommended the full EMC approve this request approving those local programs for the towns and counties that have prepared complete programs deserving of approval, and giving conditional approval as well to Hillsboro and Creedmoor. We also, perhaps that should be a second motion, came to the EMC in agreement with the staff's request that we delegate further approval authority to the director for Creedmoor, Hillsboro and for potential future proposals as well. Correct me if I'm wrong, John for the potential future action part of that.

John Huisman: That's correct and you requested that we just come back with an information items on any future amendments to the programs.

Dr. Peterson: So my motion should include that as well that we request of staff to be informed about the future actions that are taken. So I make that as a motion.

Chairman Smith: Let's do that as two motions. One let's approve the various local government ordinances and then second let's consider the delegation question.

Mr. Martin: I will second Pete's motion to adopt the local governments and this doesn't need to be a part of the motion. But like I said yesterday any of the local governments who chose to adopt more strict regulations than required by the state that we're not saying we endorse that or condemn it. We're just saying they met the minimum requirements. If they go beyond that it's their business, not our business. But I think it's important that's in the record because in the past there's certain local governments have told their citizens that we required things that they did which we did not require.

Chairman Smith: We have a motion to approve these local government programs. A motion by Dr. Peterson and the second is by Mr. Martin.

Mr. Keen: I want to comment on the encouraging collaboration with the 14 regional or the local programs, the local governments. I am certainly encouraging that collaboration and I am very happy to see this regional thought and just not individuals. We certainly get a lot more accomplished when we collaborate with larger numbers. Thank you for a good job.

Chairman Smith: Further discussion or questions relating to the first motion? (The vote was unanimous and the motion carried.)

Dr. Peterson: The second motion is that we approve delegation to the director for making final decisions on the completed applications of Creedmoor and Hillsboro and other future applications relative to this program.

Mr. Martin: I will second it also with the condition that John mentioned that we do ask that when the director gets a or request for new revisions that we're copied with those, so that we are aware of them and could give him our input or comments if we so desire.

Dr. Peterson: That's agreeable with me as the mover.

Chairman Smith: We have a motion and a second. Questions or discussion? (The vote was unanimous and the motion carried.) Thank you Mr. Huisman.

12-05 Amendments to Rules for Declaratory Rulings, 15A NCAC 2I .0602 and 2I .0603

PROPOSED AMENDMENTS TO RULES FOR DECLARATORY RULINGS
15A NCAC 2I .0601 -.0603

Summary (Frank Crawley): Commission counsel summarized the changes proposed for the Commission's rules for requesting and processing a request for declaratory ruling. The proposed changes are intended to efficiently implement the recent changes to the declaratory ruling statute, G.S. § 150B-4. Following extensive discussion concerning the delegation of preliminary decisions to the Chairman regarding completeness of a request, standards for determining whether a request is granted or denied, and whether oral presentations are to be allowed, the Commission by consensus referred the proposed rules to the Steering Committee for further review.

III. Information Items

Coal Ash Presentations

Chairman Smith: We are going to begin our information items with a set of four presentations on coal. What I hope comes out of these four presentations is some introduction and some repetition of what we've heard before to give us a statewide perspective on coal ash, what there is in North Carolina, how it's stored, some understanding of its amount and then what the various regulations are that relate to coal ash. Some of that will involve the Division of Land Resources, some of the Division of Waste Management and some of the Division of Water Quality. So there are parallel and to some extent overlapping regulatory programs. The other thing that I hope we will glean from this is whether there are any regulatory gaps and if so, what they are and whether or not we should have any concern about that. With that we'll start with the first one of those. This is listed as Mr. Steve McEvoy with the Division of Land Resources.

12-01a Dam Safety at Coal Ash Facilities

<u>Summary</u> (Steve McEvoy): Mr. Chairman, Commission members my name is Steve McEvoy. I'm the state dam safety engineer and a member of the Land Quality Section in the Division of Land Resources. I'm here today to give you the 2012 update on the recently jurisdictional electric power generation facility dams. You recall that our first and last briefing was in November of 2010. Today we want to briefly review the history of the jurisdictional transfer for the benefit of new Commission members and to provide a refresher course to the existing Commission members.

We'd like to take a closer look at the size and nature of dams under jurisdiction. We'd like to look at the nature of deficiencies encountered during the inspection process and the status of resolution of these deficiencies. We'd like to look at recent amendments to the state dam safety law and how they affect these dams. Last we'd like to look at where we stand today with these dams.

It all started with the TVA Kingston Plant ash pond dike failure in Tennessee. It occurred in December of 2008. An 84 acre impoundment released 5.4 million cubic yards of coal ash slurry. The results were extensive damage but thankfully no loss of life. The EPA responded to the Kingston incident and inventoried ash ponds at coal-fired power plant sites throughout the nation, launched a nationwide inspection program, retained consultants to perform field inspections and report on findings, and issued a state by state report card. In this effort the EPA spotlighted North Carolina. You may recall this newspaper headline from the News and Observer in July of 2009. We looked at this at our last briefing where it states "in North Carolina a dozen coal ash ponds threatened lives". The EPA says the state has more high hazard sites than any other state in the nation.

The North Carolina General Assembly also responded. Senate Bill 1004 was ratified and signed into law in July of 2009. It amended the state dam safety law by eliminating the exemption for dams associated with electric generating facilities under jurisdiction of the North Carolina Utilities Commission and by continuing the exemption for those electric generating facilities under jurisdiction of the Nuclear Regulatory Commission which remain under shared jurisdiction with the Utilities Commission. This bill became effective on January 1, 2010. In response the Land Quality Section launched its initial inspection program in 2010. Sixteen power plant sites were identified as containing jurisdictional dams, the owners being Progress Energy and Duke Energy. A total of 67 dams were field identified at 16 sites. Of the 67 dams 57 were jurisdictional, 10 were exempt by size and hazard class. Of the 67 dams 38 were identified as ash pond dams, 24 were active and 14 were inactive. One active and three active ash ponds were exempt by size and hazard class, leaving the final count of 34 jurisdictional ash ponds. Of the 67 dams 29 were either cooling pond dams, fuel containment dams or clear water waste processing dams, other clear water ponds including one hydro power plant dam, six of which were exempt by size and hazard classification leaving 23 jurisdictional so called clear water ponds.

In addition to the number of facilities which was a surprise, the real surprise to us was the size of the facilities. The total length of jurisdictional dam identified, was slightly more than 184,000 linear ft. or 35 miles of dams. That's 9.5 miles for Duke Energy and 25.5 miles for Progress Energy. The total length of high hazard jurisdictional dams identified almost 128,000 linear ft. or 24.2 miles. That was 9.3 miles for Duke Energy and 14.9 miles for Progress Energy.

I want to take just a moment just to give a little refresher course on hazard classification and what it means. It refers to the damage potential downstream from a dam. In North Carolina we have three hazard classifications. High hazard involves loss of life, significant building damage, damage to major roads, highways and railroads, disturbance of major public utilities and significant environmental damage for certain types of dams. Intermediate hazard involves no loss of life, minor damage to buildings, minor damage to roads, highways and railroads, disturbance of public utilities and minor environmental damage for certain types of dams. Low hazard involves no loss of life, damage to uninhabited buildings only, low volume roads and agricultural land. Please keep in mind that the hazard classification refers to damage potential downstream and does not relate to the condition of the dam in any way. When you look at the hazard classification of these dams you'll see that of the 34 jurisdictional coal ash dams, 29 were high hazard, 2 were intermediate hazard and 3 were low hazard. Of the 23 clear water dams, 16 were high hazard, one intermediate hazard and six low hazard. If you look at the total number of dams categorized by reservoir size in acres in the 0-10 acre range you have eight dams, 3 high hazard and 5 low hazard. In the 10-50 acre range you have 22 dams, 20 high hazard, one intermediate and one low hazard. In the 50-200 acre range there are 14 dams, 10 high hazard, 2 intermediate and 2 low. In the 200-500 acre range there are four dams all high hazard. In the 500 plus acre range there are nine dams, 8 high hazard and 1 low hazard.

If you look at the number of coal ash dams categorized by reservoir size in acres-and this is a subset of the previous slide-there were none in the 0-10 acre range, 19 in the 10-50 acre range, 8 high hazard and 1 low. In the 50-200 acre range there were 14 dams, 10 high hazard, 2 intermediate hazard and 1 low. Keep in mind that the Kingston plant site would fit in this range. We had one coal ash pond that exceeded 200 acres. It was exactly 264 acres in size. If you look at the total number of dams categorized by dam length and feet in the 0-1000 range there are 15 dams, 11 high hazard, 2 intermediate and 2 low. In the 1000-3000 ft range there were 24 dams, 22 high hazard and 2 low hazard. In the 3000-10,000 length range there were 14 dams, 10 high hazard, one intermediate hazard and 3 low. In the 10,000-20,000 ft length of dam range there's 3 dams, one high, 2 low and one dam exceeded 20,000 ft in length. If you look at the number of coal ash dams categorized by dam length and feet you will see in the 1-1000 range six dams, 5 high and 1 intermediate and the 1000-3000 ft range 14 dams all high hazard. In the 3000-10,000 13 dams 10 high hazard, one intermediate and two low. In the 10,000-20,000 ft. range we have one high hazard dam and nothing above that size.

You recall we discussed in our last briefing how we normalize the workload with EDUs (Equivalent Dam Unit). We realize that the manpower required to inspect these dams was much greater than that for 57 average sized dams. Our I-beam research indicated that the average length of all dams inspected was approximately 750 linear ft. To give you some perspective that's the length of two and a half football fields. As a result the equivalent dam unit or EDU was established. The intent to reflect the true inspection workload; the principal every-750 linear ft. of dam unit inspected equates to one dam. The 57 jurisdictional dams then converted to 245.9 equivalent dam units, all of which were inspected initially in 2010 and again in 2011. You see the breakdown as 66.9 for Duke Energy and 170 for Progress Energy. The 45 jurisdictional high hazard dams converted to 170.2 equivalent dam units, all of which again were inspected in 2010 and again in 2011, 65.5 EDUs for Duke Energy and 104.7 for Progress Energy.

Where are the 16 plant sites located? Well there are two in the mountains, 11 in the Piedmont or central areas of the state, and there are three in the coastal area. I'm not going to read each one but the information is in your packet for the locations. I would point out that the

Weatherspoon power plant site is decommissioned. If we borrow that newspaper map we can see the distribution of the plant sites across the state. The green dots are Progress Energy and the black dots are Duke Energy. You can see that Progress is concentrated in the east and the far west while Duke Energy is concentrated in the Piedmont and central areas of the state. Of course we all know they're trying to merge at this time and may be one in the future. The summary of deficient dams discovered during the initial inspection effort there were seven total. Each one of these dams received a notice of deficiency or NOD. I wanted to take a few minutes to talk about what we found, the characteristics of the deficiencies that we found and how they were resolved.

In the Allen active ash dam in Gaston County, the initial inspection noted excessive seepage along the toe of the dam near a transmission tower. An NOD was issued in April of 2010. In September of 2011 a repair plan was approved for installing a filtered drainage system to control this seepage. These repairs have been completed and final approval of these repairs was issued in December of 2011.

Next is the Belews Lake main dam which is a large cooling pond in Rockingham County in which the initial inspection noted areas of excessive seepage, several hairline cracks in the spill way wing walls, excess seepage in the gabion abutments, and undesirable vegetation on the dam. An NOD was issued in February 9, 2010. A repair plan was approved in May of 2011 which included measures to control seepage. The wing wall cracks were analyzed and determined to be surficial. Piezometers were installed for continuous monitoring of the embankment, and undesirable vegetation was removed. These repairs have been completed and final approval of the repairs was issued in October of 2011.

The Belews Creek Active Ash Dam in Stokes County had a localized slope failure and seepage containing sediments and were observed during the initial inspection. A NOD was issued in February of 2010. Studies were immediately initiated to include exploratory excavation. An approval to repair was issued in December of 2010 for slope repair which included subsurface drainage improvements and installation of piezometers for continuous monitoring. These repairs have been completed and final approval was issued in October of 2011.

The Cliffside Active Ash Pond Dam in Cleveland County was observed during the initial inspection that sediment deposits from the Broad River obstructed outlets from a subsurface drain system within the embankment. The actual extent of the subsurface drain system was questioned. An NOD was issued in April of 2010. Duke Energy investigated historic documentation of the dam which depicted the location of the drainage system. Duke cleared all obstructed outlets and initiated a maintenance program to ensure that the outlets remain unobstructed. The required maintenance and investigation were completed and final approval was issued in July of 2010. The Cliffside Inactive Ash Basin 1-4 Main Dam in Cleveland County was issued an NOD in April of 2010 requiring a hydrologic and hydraulic analysis of the spillway. Also the condition of the corrugated metal pipe principal spillway was questioned. An H&H analysis was performed which indicated that the spillway could pass the storm required by Code, the 1/3 probable maximum precipitation, without overtopping the dam. A camera inspection of the principal spillway conduit was provided which showed the pipe to be in good condition. The studies were completed and reviewed and the NOD was deemed satisfied in March of 2011.

The Dan River Active Primary Ash Dam in Rockingham County – during initial inspection, a localized shallow slope failure was noticed along with excessive seepage, localized depressions, animal burrows and undesirable vegetation on the downstream slope. An NOD was

issued in February of 2010. An approval to repair addressing these deficiencies was issued in May of 2011. These repairs have been completed and final repairs were approved in November of 2011.

Last, in the Weatherspoon 1979 Ash Dam in Robeson County, an initial inspection noted severe seepage along the southern downstream slope of the dam, isolated areas of steep downstream slope and isolated areas of numerous large tree growth. An NOD was issued in April of 2010. An approval to repair was issued on May of 2011. The repairs consisted of measures to control seepage, stabilize steep slopes and remove large trees. Piezometers were also installed for continuous monitoring in the embankment. These repairs have been completed and final approval of the repairs was issued in October of 2011.

So when you look at the overall report card which involves seven ash ponds and one so called clearwater pond, of the seven NODs issued all of them are resolved at this time. As for the frequency of inspections after passing of Senate Bill 1004 during the initial inspection in the winter of 2010 all jurisdictional dams were inspected, and that's 57 total 246 EDUs. In the winter of 2011 we reinspected all dams, all 57, 246 EDUs. No new NODs were issued in the recent inspection round. We are now entering our third round within the two year period which is underway right now and probably have something on the order of 40-50% of them inspected at this time. I wanted to show you a picture of some of the repairs, the predominant measure that was employed is a layered aggregate filter. It is widespread. This measure is used to treat broad areas of seepage and its design is to function by allowing the seepage water to leave the embankment without taking soil material of the embankment with it. This is a similar measure again a layered aggregate filter employed at the Weatherspoon site for the same deficiency.

How's the workload funded? You will recall we discussed this in our last briefing. Session Law of 2010 provided for a one time dam evaluation fee. The fee was set at $1,100 per EDU for high hazard dams under ownership. The fee was to be paid in two even annual installments, invoiced in October of 2010 and 2011. The fees totaled $187,000,242 and you can see the breakdown, a $115,214 for Progress Energy and $72,028 for Duke Energy. The use of the funds involve one, time limited, Assistant Dam Safety Engineering position for a two period and all the support necessary for that position. Position focuses on submittals and other business specific to the electric power dams. After the two year period, which will be ending in October of this year the workload must be absorbed by the program within the regular budget. During the last legislative session House Bill 119 was passed and became effective in July 1, 2011 for the Dam Safety Law. It did affect the Dam Safety Law among others. One exemption was revised and one was added. The current exemption that was revised raised the jurisdictional threshold for dam height from 15 feet to 25 feet, and raised the jurisdictional threshold for impoundment capacity from 10 acre-feet to 50 acre-feet, unless the dam is determined to be of high hazard in which case it's jurisdictional regardless of size. Since this is an exemption in order to be jurisdictional a dam must meet both those conditions if it's intermediate or low. It must be 25 ft. in height and impound 50 acre feet.

Chairman Smith: Tell us again what jurisdictional means.

Steve McIvoy: Under the North Carolina Dam Safety Law. The exemption that was added involved dams constructed for the purpose of providing water for agricultural use, provided a professional engineer designs and oversees construction and the new dam is registered with the Division of Land Resources. Again, unless it is high hazard in which case it is jurisdictional

under the State Dam Safety Law. For this subset of dams it did not have a tremendous effect, of course the high hazard dams are remained the same, 45. The number of intermediate high hazard dams remained the same at 3. Six low hazard dams fell out of jurisdiction of the Dam Safety Law as a result of House Bill 119. Today we've only have one incident we know about that occurred at the Sutton Power Plant in New Hanover County in September of 2010, as a result of some tropical activity that had occurred in the area. An inactive ash pond had a localized overtopping failure that formed a breach in the dam. This is a view from inside the reservoir looking down through the breach and you can see the size relative to the people next to it. This is a view of the same breach downstream looking back up into the reservoir where we were standing. This is the plum of grey ash that was released by the incident. It covers an area of about a 100 ft. by 100 ft. Fortunately it did not migrate anywhere away from the point of incident. Emergency repairs were affected and approved by the department and this facility is now functioning again. With that I will open it up for questions.

Chairman Smith: Thank you Mr. McIvoy.

Dr. Peterson: Thanks for the presentation. I understand the concern. Most of these issues that you look at and identify as concerns resulted in the NOPs, whatever they were seem to be breaches or something to do with spillways. It seemed to me that there would be potentially questions about the engineering fatigue that might happen in the constructional materials, although I don't know. Or relative in thinking about hog lagoons, something relative to the freeboard that was there that gave you confidence that a tropical storm condition would be met by having enough means of treating that water so it wouldn't be overtopped. Are there other considerations that would result in serious dam failures besides the ones for which there were violations.

Steve McIvoy: For the most part the active ash ponds have a significant amount of freeboard on them. Most of them are containment dams and do not have much outside drainage areas. So they just receive the rainfall that falls in them. We don't have a large problem with that. In terms of the fatigue that you mentioned, I guess that's the most evident in seepage which when you look back through the slides is the predominant efficiency that we ran into. We treat that seepage and the important thing again is to make sure that water leaving the embankment is not necessarily detrimental unless it carries embankment material with it. That's what these layered filter devices are for.

Steve Keen: In reference to the same comment the non-engineering item, so the way that you had built the rock and so forth on the outside of the berm and my thought was the depths inside the dam itself, with the berm. How do you determine how deep you go into it to have a filtering system as it does come through the process of seepage at the bottom of the berm?

Steve McIvoy: Yes. Those devices, the layered aggregate filter, are not particularly deep. They may go through two or up to four different gradations of aggregate that may even start with a geo-textural fabric and the idea is to again prevent, not stop the seepage but prevent it from coming through. So there's no reason to dig into to get the source. We try to treat it on the surface, take the water away and leave the soil behind.

Chairman Smith: That is the soil that makes up the dam?

Steve McIvoy: That's correct.

Chairman Smith: That's your focus rather than filtration of the water that comes through for water quality issues.

Steve McIvoy: That is correct.

Marvin Cavanaugh: We have several flood reduction folks up in Stokes and I noticed that we made the headlines there with Belews Lake. Did you notice a difference in classification or a strategic amount of difference in classification that moved from low to high due to the increase in population or road work in your study?

Steve McIvoy: Not particularly. A lot of these sites are fairly remote and many times the damage is based on environmental concerns also which the Administrative Code allows for these types of dams. That would be mine refuge and waste treatment. You recall when we were discussing in the earlier slides we said environmental damage for certain types of dams. These are one of those types.

Steve Tedder: I know you get some kind of one time funding to help out with jumping on these inspections. How may jurisdictional dams do you inspect throughout the state? How many are in your program right now? Familiar with talking 56 for your total of these and I know it's not ash basins but in total dams workload perspective.

Steve McIvoy: After House Bill 119 it's around 2,000.

Chairman Smith: I do want to request, not only to Mr. McIvoy, but everybody that is doing presentations if you have things to show we need for them to be posted on the EMC webpage so we can access them and refer back to them. It's very helpful to have that information. It's helpful to us if they are posted in advance. What you put up we read and that makes the presentation more effective for us.

Ms. Deerhake: Thank you. I just had a question about the Weatherspoon. You said the plant was being decommissioned. Can you remind us what system is in place for either closing or monitoring ponds at closed facilities?

Steve McIvoy: Well we will continue to inspect them. Just because the plant is decommissioned doesn't mean that the dams go away. They stay there and we just keep them in our inventory and periodically inspect them in accordance with code and statute.

Ms. Deerhake: Can you remind us where we find the rules on closure of ash ponds?

Steve McIvoy: There are no rules. We do have a policy in place but no one has come forth to use that.

Dr. Moreau: All of this has to do with dam failure. It is with these, particularly with the closed ponds. Is there any hazard of walking in there? Is this pretty solid stuff they're walking across? Presumably they're fenced in some way but I'm concerned about, instead these are not abandoned but closed. Any other has a hazard associated with those beyond dam failure?

Chairman Smith: If you would, could you start your response to Dr. Moreau's question with.. I'm making a distinction between an active and inactive facility. Use that nomenclature. I've learned that not all these things mean what they appear to mean.

Steve McIvoy: I'd start by saying that the active ash ponds are receiving a coal ash slurry regularly. The inactive ash ponds, that function was stopped some time ago and that material is just sitting in storage.

Chairman Smith: Is it wet or dry in the inactive storage?

Steve McIvoy: I'd have to say probably both because some dams or some reservoirs have been inactive for many, many years. Some have been inactive for a very short period of time.

Chairman Smith: And the Sutton one we saw appears to be dry?

Steve McIvoy: It was and the problem there was that when the material does dry, if there's any kind of stacking activity or anything in the reservoir you can tend to direct the internal runoff, even in a containment dyke to a very small length of dams somewhere on the perimeter. When that happens you might see an incident like at Sutton.

Chairman Smith: When they dry ou?tDdo they dry out by just natural evaporation?

Steve McIvoy: And seepage into the groundwater table.

Chairman Smith: And back to Dr. Moreau's question

Steve McIvoy: As far as security that's the business of the power companies.

Dr. Moreau: If some kid walked out on those ash ponds, inactive ash ponds, would they support a person walking across them?

Steve McIvoy: Probably the older ones would. The ones that aren't so old I wouldn't step in them myself.

Dr. Moreau: So there is a need to maintain surveillance over those for safety reasons other than dam failure.

Steve McIvoy: Yes and it's a matter of site security which is the business of the power companies.

Steve Keen: I noticed there was a fence on the breech of the Sutton plant and I think you said fortunately it did not migrate over to other property owners for whatever. The sense of what I'm saying is in Eastern North Carolina we have the Leek Plant in Goldsboro which is converting to gas and considerably large, a 143 acres of the ash pond there. Looking at as we move forward in time and we make this transition is there something about ash ponds that maybe we need to look at with the power companies. I hate to say rules. I saw that and I was listening about the future in looking at maybe kids or developments, things that are going on around. Just a thought of maybe looking into ash ponds in the future of how we just watch them. If there are no rules, I still think maybe this might need something to put on the burner, put on the radar. Thank you.

Chairman Smith: Thank you Mr. Keen. Those are good points. Other questions or comments? Your division appears to be doing an excellent job for dam safety and both of the power companies seem to be very responsive and interested in that. Your focus is purely on dam safety?

Steve McIvoy: That's correct.

Chairman Smith: One other question about dam safety.I see that your measurements include the length of the dam, the height of the dam and the surface acreage of the storage of the ash pond. Do you have any numbers or any measurements as to depth or volume?

Steve McIvoy: The 50 acre ft. is a volume. It's one acre of water one foot deep and that covers the volume. It's not really an area.

Chairman Smith: How do you know…do you get the depth information from the power companies?

Steve McIvoy: Yes we do. If we can't then we'll use ways to approximate that.

Chairman Smith: Other comments or questions? Thank you very much Mr. McIvoy. It was very helpful.

12-01b Coal Combustion Residuals Regulatory Framework Implemented by the Division of Waste Management

Chairman Smith: My understanding is that this will focus on dry facilities rather than wet facilities, even the wet facilities that become dry.

<u>Summary</u> (Ellen Lorscheider): I do appreciate being here and was invited by Chairman Smith to discuss the landfills in North Carolina, our North Carolina regulations and laws. I'm going to go over some of the proposed federal regulations, the permit conditions that we have at landfills besides the landfills in North Carolina, and I'm also going to touch on structural fills which is another way that coal combustion waste are disposed of or deposited on the land in North Carolina. Chairman Smith was correct in that I'm going to be going over the land disposal of this waste relative to what we've been hearing about with disposal in ponds and the dams that hold the ponds back.

We have regulations which call these waste coal combustion byproducts. Normally now we're hearing it called coal combustion residuals. Coal combustion residuals are the waste that comes out of the power plants in North Carolina due to air controls, the stacks and the boiler system. There are generally four different kinds of waste that come out. The bottom ash is a sandy waste, fly ash which is what we're hearing about mostly like wood ash. We also have slag which is the big clinkers and flee gas desulfurization. In North Carolina we do not have landfills at all of the steam stations. What we have is there are right now 5 different steam stations which have landfills associated with them. They are going across the state from the west, Marshall which has a closed ash landfill and an open one and also has an open FGD landfill.

Chairman Smith: Would you define each of those? What does it mean to you, closed ash, open ash, open FGD?

Ellen Lorscheider: Ok. The open landfills are actively taking this type of waste and so we closed many of our landfills at the end of the 90s or early in this decade, mostly because they were not lying landfills. So we have open landfills which are taking fly ash and also we have open FGD (Flue Gas Desulfurization) landfills. Very often the power companies try to keep the two different components ash vs. FGD separate because both ash and FGD have reuse capabilities. Ash can be used in concrete products. FGD can be made into drywall.

We've been hearing a lot about Belews. Marshall and Belews are the older and the bigger landfills. We have had landfills there, obviously because we have closed ones, for decades. We also have in the very new landfills at Cliffside and at Allen. Progress Energy has also had landfills open for decades and they have very interesting design of their landfills in that their existing landfill now is actually on top of a closed landfill which is on top of a pond.

In Halifax County we have a landfill that is associated with small utilities but its run by the county. Halifax is the only landfill that we have that is not on the property owned by the utilities. In North Carolina, I do want to tell you, there have been local utilities, of course through history that have burned coal. Although these are the landfills or ash piles that I'm going to talk about today are associated with the utilities, but it is good to keep in mind that the old town boilers and industrial boilers also have, sometimes, landfills associated with them, ash landfills. They also have just ash piles where the ash was deposited fifty years ago. Sometimes we are finding these but they are not permitted under the Division of Waste Management Solid Waste Section. Our laws and regulations go back to 1982. There are two major regulations that we have pertinent to landfills in North Carolina and those are sanitary landfills which include industrial landfills. Actually back in 1982 included all landfills. Then back in the late 80s, early 90s we came up with separate landfill rules for municipal solid waste landfills. So I'm going to talk about the industrial landfills which are sanitary landfills. They are regulated under our .0500 regulations and they include a 5-year permit which is true of all of our solid waste facilities. They require that there be controlled access from the public. This is in the operation plans and they have to have a fence and gate attendant. They shall not, in our site restrictions, and those site restrictions in our regulations require that the landfills do not destruct habitat or endangered and threatened species and restrict landfills in the 100 year flood plain. There's no discharge into surface waters which are in violation of the NPDES permit from Water Quality. They cannot cause violation of the Clean Water Act and cannot cause nonpoint pollution which violates assigned water quality standards.

We also have several buffers that are in our sanitary landfill regulations, industrial landfill regulations. They include that the waste has to be above a 4 ft. separation to groundwater, a 50 ft. buffer to property line, streams, and rivers and there are 500 ft. to dwellings and to wells. The landfill designs, in 1995 our sanitary landfill regulations were rewritten to include specific language having to do with industrial landfills. At that time it was included that in order to keep your sanitary landfill open you had to have a design that ensured that the groundwater standard was not exceeded at the compliance boundary. You had to show the Division of Waste Management through modeling that the modeling of hydrogeology, climate and waste that the groundwater standards were not exceeded. If you chose to, you could build the landfill with a specified design and then you wouldn't have to prove the groundwater standards were not compromised. At that time, after these rules came out, we actually evaluated all of the industrial landfills in North Carolina and made them show us that their existing design did not compromise the groundwater through modeling. The power companies in North Carolina did submit modeling for their existing designs. Their existing designs were unlined landfills but through the next couple of years none of those modeling activities were approved by the Division of Waste Management, and the power companies, through time, worked with the Division of Waste Management to bring in liners. They actually voluntarily lined all of their new landfills.

They closed up the existing landfills and have opened landfills that are lined with leachate collection. This is the specified design that is in our regulations. Starting at the bottom, the design has to have 2 ft. of clay on top of natural ground or excavated ground. The clay is normally North Carolina clay. If need be it has to be 10 to minus 7 permeability. So very often it is augmented with bentonite. On top of the clay is a liner of flexible membrane. Then on top of that is our Lechate Collection System which is ribbed so that the water runs down along. Then on top of the lechate collection is the waste itself. Once the landfill is completely built out there is a final cover that is put on the landfill.

In 2007, the legislature passed an extensive law having to do with solid waste management in North Carolina. One of the components of that law was a provision that the power companies could dispose of ash or FGD on areas that were formerly used for storage or disposal of combustion products. I said earlier about Progress Energy's design was very interesting in that it was a landfill on top of a landfill on top of a pond. This is the idea that they were trying to get at with this law, in that there are areas especially at the large utilities that have already been contaminated or used for a disposal of some kind, and instead of using a virgin piece of property the utilities are now able to easily use a piece of property that has already been compromised by coal combustion byproducts. The design that they needed to use was very specific in the law that was passed in 2007. That design is very similar to the other one except that it has an extra component of a flexible membrane liner. So you have the dry ash pond at the bottom and still you're going to have your 2 ft. of clay with a flexible membrane on top of that. You have the Leak Detection System and then you have another flexible liner on top of that. With this Leak Detection System if the top piece of liner was to have a leak then the lechate which is the fluids that come off of the waste would come out through the Leak Detection System and you would have very early detection that something was going wrong with your landfill. Going up from there you have the lechate collection as usual, and waste on top of that and with the final cover. I will go over what is involved with the final cover. This Leak Detection System can be used in place of our groundwater monitoring wells. Groundwater monitoring is not required by this law. Lechate monitoring is still required but I will say that the utilities that have chosen to use this

design almost always still require groundwater monitoring. They still have groundwater monitoring in their design very often. You'll see more of that.

The permit conditions which exist for coal combustion residual landfills includes sediment and erosion controls which of course are permitted by Land Quality, and ground and surface water, semiannual monitoring and reporting. There are actually in our regulations groundwater and surface water monitoring required but the permit goes into detail the operating plan for those monitoring systems. The permit conditions always say that a licensed geologist or professional engineer must be present and must approve the final location, screen intervals and nesting of the wells.

This next permit condition is very important because this keeps good neighbors. But the dust control at landfills has to be visually observed on an hourly basis and there has to be a plan ready that if there is a dust problem anytime the plan is immediately initiated. The plans include, you put resin down on the ground or concretions, soil or water, whatever is in the plan to stop the dust problem. The permit conditions always have for the final cover is a minimum of 18 inches of soil with a piece of membrane underneath the soil, then on top of the soil will be another 6 inches of vegetated cover. We have financial assurance for all of our landfills in North Carolina and that includes that there has to be annual updates of what the cost of closure would be and what the cost of post-closure care would be. You have to have scales on site to record the waste and the landfills have to report to the solid waste section yearly what the monthly weight was of the waste that they took and which county it came from. There has to be a certified facility operator on site and the edge of waste is permanently marked.

Chairman Smith: Before you go any further could I interrupt and ask a couple of questions to get me oriented at least. Everyone else may already understand this but I don't. If you would back-up to the various statutes that you just went through with the lining and the lechate requirements, and all of that those don't apply to all existing dry ash storage facilities, do they? They only apply to new and …

Ellen Lorscheider: No not as far as the Solid Waste Act of 2007. Those are new laws and they actually are applying to landfills that have been built in the last year. We opened several landfills last year. There is another proposed one right now that is going to be partially on an old pond. So the new act of 2007 applies to those.

Chairman Smith: So the 2007 act applies to new facilities that are started after that.

Ellen Lorscheider: It can apply to them. It is actually a choice of the power company which design they want to use. They can use our old regulatory design but if they are on top of an existing ash pond they can use this new design. It benefits them because very often there's existing contamination already which is showing up in monitoring wells where if they had to rely just on monitoring wells to show the effectiveness of the landfill, it would be difficult to impossible to do.

Chairman Smith: These permits that you showed on this previous screen the one just before this, do those permit conditions apply to all landfills?

Ellen Lorscheider: Those are applying to all the active landfills that we have right now.

Chairman Smith: All active landfills. What about inactive ones? Are you going to speak to closure and what happens to inactive ones?

Ellen Lorscheider: I can speak to that. We have, of course, 3 inactive landfills in North Carolina. The closure is the same as the existing landfills. They put down in most cases, I will not say that they always put down, a piece of fabric membrane. I know that they did it at one of them that closed at Belews but then they always have the 18 inches of soil on top and the vegetated cover.

Chairman Smith: I'm asking you what is required for closure. What you just described is that required or is that optional with the power companies?

Ellen Lorscheider: It is in the regulations that they have closure but it is specific to the different permits what that closure design was. I can check and make sure that you have the correct information as to how the closed landfills were closed.

Chairman Smith: That would be helpful. Then the final question and I'll let you get back to the way you had this planned. For those landfills that existed prior to the 2007 act what supervision or regulations apply to them?

Ellen Lorscheider: The closed landfills?

Chairman Smith: Open or closed. The ones in existence prior to …

Ellen Lorscheider: That is the regulations in 1982 that were then changed to have specific requirements for industrial landfills and they were changed in 1995, those are the regulations that apply to all industrial landfills in North Carolina which includes coal combustion byproduct landfills. Those regulations continue to be used for all industrial landfills including coal combustion byproducts unless the design can vary if the utility chooses to use the new 2007 Solid Waste Act design specifications. I do want to say that the regulations going back to 1982 have always required groundwater monitoring and surface water monitoring at landfills whether they are open or closed. The monitoring has to continue for at least thirty years unless they petition to the division to for some reason discontinue monitoring. That has not happened with any of the landfills at utilities.

This may help a little bit because we do have the two different designs. The yellow dot is Marshall Landfill and that landfill is partially on a pond. So that landfill can use the new design. Also the blue dot right below the yellow one is the Allan Steam Station and that one is entirely on a retired ash impoundment. It is using the 2007 design that has a Leak Detection System between two pieces of liners so that if there's a problem in lechate that breaks through the top layer you immediately know so that it can be addressed. There are also in North Carolina two proposed landfills. One is the Belews, it has one closed landfill, several open landfills and it is this year going to have a major expansion of its existing ash landfill. So that a total acreage of 124 acres will be covered with landfill three time at Belews Creek. There is also a brand new site which will bring the number of power plants to six in North Carolina that have landfills. That is at Mayo. Mayo is going to have a landfill for the first time and that's going to be over

time the second largest co-ash landfill in North Carolina covering a 104 acres. There's going to be a thirty years additional capacity added with Mayo.

This is just for your reference some information about the proposed landfills. This is what we have existing in North Carolina. We have existing 8 landfills and later on this year when Mayo opens it's gonna be at six different steam stations. The landfills that were built according to the new 2007 design is double lined with Lechate Control System and a Leak Detection System. So there are just two of them existing now. The landfill that is at Belews that will be opening up, will also be designed with a double lined with its Leak Detection System but we are going to continue to have groundwater monitoring at that landfill.

I'm going to speak as quickly about the types of waste in North Carolina. We've been talking about just dry ash waste that goes into our landfills. The amount of dry ash that is coming out of the power plants is actually rising every year and this is due to the types of air controls that they have on the steam stations. The amount of wet waste that goes into the impoundment is dropping. This from what we have been told from the utility company though, there are no plans for landfills for land disposal at any of the other power plants other than the ones that I have talked about today. Of course that could change but that's a decision that is made by the industry according to transportation and the cost of building landfills. Air Quality controls and construction costs are determining whether or not these steam stations even use coal to generate electricity. They are making the decisions now whether to go to natural gas or, due to construction costs of new air control systems, whether to even close the steam station such as Witherspoon closing up just recently.

There is one other form of dealing with coal combustion residual waste which I wanted to discuss today. That is in North Carolina we also have regulations for structural fills where the coal combustion byproducts can be placed on the ground in order to have a beneficial use. Our structural fill regulations require that the fill have a buffer of 25 ft. to property lines, 2 ft. to groundwater, 50 ft. to streams and wetlands, 25 ft. to bedrock out crops, a 100 ft. to well, springs and drinking water. Then there are also closure requirements for our structural fills in that there has to be 12 inches of compacted soil with 6 inches of vegetated cover. There also has to be dust control and there is a limit as to what the side slips can be. The most important thing in our regulations is that there has to be a beneficial end use. Unfortunately it does not say what the beneficial end uses are required to be, such as I know that water quality has regulations for beneficial reuse of coal combustion byproducts and theirs are specific as to what can be above the structural fill as far as a paved road or a building pad, things like that.

We've all been hearing after the accident in Tennessee about the proposed federal regulations for the management of coal combustion byproducts. A rule was proposed in June of 2010. The proposed rule said that the coal combustion waste would, in the future, be dealt with in one of two ways. It would be dealt under Subtitle D which is our solid waste rules or some solid waste rules or Subtitle C which is hazardous waste regulations. Then there is also a combination of the two listed in the proposed rules. The department sent in comments in November of 2010 and they included that we would like financial assurance in the regulations, we wanted additional regulations for structural fills which was not addressed in the proposed regulations. The state programs that were already running it be included in the regulations so that they would be permitting the facilities, overseeing compliance at the facilities, receiving the environmental monitoring and overseeing any cleanup plans that had to be facilitated. In November of 2011, we sent in additional comments and I will get to that in just a minute.

There is no time table for when the federal regulations are going to be finalized at all. What I have been told is that there will be guidelines for the steam stations which are going to be out in July of this year and finalized by 2014.

Some of the comments which we sent in November of 2011 included, we were ask to comment on a huge docket of information. These were three documents that were put out by environmental groups which were specific to sites in the different states and they did address several sites in North Carolina. We also commented in November of 2011 about seven public hearings held across the United States having to do with coal combustion byproducts and the proposed regulations. They did comment specifically about several things in North Carolina. Some of the things that we heard about were that there were groundwater exceedances, the first one was primarily iron, boron, selenium. This is true and one of the things that were asked to do was to comment whether or not what came out of the news report was actually true. We have groundwater assessments ongoing at all of our landfills at Duke and for Progress Energy. We did not have groundwater exceedances at our Halifax landfill off site landfill. At a structural fill there were FEMA trailers parked after Hurricane Floyd and at that time the ash was exposed. Actually Health and Human Services responded to that complaint and this is noted in these documents and at the public hearings. The follow-up said that there was no risk associated with the coal ash. There was nothing found. There is also at a structural fill called Swift Creek which we had groundwater exceedances. The Division of Waste Management had wells installed years back and compliance action was taken because the construction plans were not followed and ash was placed too close or possibly in the wetlands. Continuing today, we gave elevated levels of metals in those groundwater wells. We also have erosion problems at this structural fill and the end use that I noted was so important to have at a structural fill was never actually built at some of our structural fills in North Carolina. This concludes my presentation.

Chairman Smith: I'll open the floor up for questions and comments. Not try to restrict those in any way, but I think what I'll say for my purposes, I have a lot of questions. I think probably the most efficient way for me to deal with my questions is to put them together in an outline form and schedule a time to come over and talk with the folks in your division rather than spending the next hour or two going through the things that I need to explore to better understand some of the things that you touched on. You all ask all the questions you want.

Ms. Deerhake: I just have one basic question and that's the Commission authority. Doesn't this waste management fall under the Health Services Commission or am I dating myself calling it Services Commission? Public

Ellen Lorscheider: For Public Health. Yes.

Ms. Deerhake: Solid and Hazardous waste regulations are the responsibility of the North Carolina Commission for Public Health as it's called.

Clyde Smith: Cliffside Plant as you described ash, am I understanding that's the permit they have now they were selling that ash for concrete? But the new permit is going to change the ash to include hazardous waste so they will not be able to sell it?

Ellen Lorscheider: Probably what is going on is that because of the proposed EPA regulations we still do not know if ash is going to be considered a solid waste or a hazardous waste. That is something that received a lot of comments at these public hearings EPA held as to if the ash became a hazardous waste, would that mean that it could not be recycled into concrete products or other products.

Clyde Smith: But that'll be on the federal level.

Ellen Lorscheider: Yes that would be on the federal level.

Clyde Smith: So that would not be the state. If you got a problem you can recycle why not go into our landfills and fill them up because these line landfills are very, very expensive.

Ellen Lorscheider: Absolutely. Actually at this time a very large amount of fly ash and the other ashes. We talk so much about fly ashes but there's also bottom ash. It's used very, very frequently in the construction industry. Bottom ash is, just like sand. So that is a concern across the country in that if EPA considers it hazardous waste, can it still be recycled? Or would anybody want to use if it has a hazardous waste designation even if they are allowed to.

Clyde Smith: Thank you.

Chairman Smith: I will ask one question. That slide you put up that had the list of maybe 8 or ten landfills is that the total inventory of EGU coal ash landfills in North Carolina?

Ellen Lorscheider: That is all of the coal ash landfills. Yes.

Chairman Smith: Then you said if a number of facilities don't have landfills what does that mean?

Ellen Lorscheider: They were still producing ash so they're actually trucking the ash to the existing landfills or the ash that they're producing is only going into ponds.

Chairman Smith: Alright. Questions?

Marvin Cavanaugh: You mentioned going into ponds-on-site ponds?

Ellen Lorscheider: I believe that they're all ponds. Of course this isn't my expertise but I think that there are ponds that all of the power plants in North Carolina.
Steve Keen: When you transport the ash containment not knowing whether it's going to be hazardous or solid waste?

Ellen Lorscheider: That, if I'm hearing you correctly, is going to result from the proposed regulations. At this time we have always done testing on the ash that goes into our landfills and we have not to my knowledge been made aware of any ash that was considered to be hazardous waste according to toxicity level testing. We also require testing when it goes into structural fills.

Steve Keen: Ok. In transporting often is the liability there. That was in question of how that would be handled in containment, in just transporting in case of an accident or something.

Ellen Lorscheider: Right.

Marvin Cavanaugh: One last question that I probably missed and I apologize. When are we expecting these rules or the ability to determine whether or not ashes are contaminant or not?

Ellen Lorscheider: We do not know. We haven't been give a deadline of when the EPA has to have their new rules out although they do have that guideline coming which I believe will be a great help. But we just don't know when they're going to pass any regulations. There's a lot of discussion across the country about it. They may not be in a hurry to get them finalized.

Chairman Smith: It is 12:10. How about 30 minutes? Will that be enough time for lunch? We will try to resume at 12:40. Thank you everybody.

Meeting resumed.

12-01c NPDES Permitting Status/401 Issues

Summary (Sergei Chernikov): My presentation today will cover NPDES permitting for coal ash ponds in North Carolina. This is an information item only. I will cover the regulatory framework power plant components, water quality concerns and waste streams, permitting and monitoring and the Division of Water Quality oversight.

There are 13 major coal fired power plants, 7 belong to Duke Energy and 6 belong to Progress Energy. Duke Energy covers primarily the western portion of the state with the exception of Asheville where Progress Energy has the facility and Progress covers primarily the eastern portion of the state. Both major power companies Duke Energy and Progress Energy have made the strategic decision to retire older coal fired power plants or convert them natural gas. This will have a significant benefit for water quality by reducing chemical and thermal pollution. The first one to be retired was Weatherspoon Power Plant which was retired on October 1st of last year and given the next 4 years, 6 additional coal fired plants will be converted to natural gas or closed. Lee Power Plant will be converted by the end of this year. Sutton Power Plant will be converted by the end of next year. Buck will be converted by the end of 2014. Dan River Steam Station will be converted by 2014, Cape Fear Power Plant will be retired by 2014, and River Bend Steam Station will be retired by 2015.

This morning there was a discussion about regulations for closing down existing ash ponds. At this point, state and federal regulations that would govern this closure do not exist. So the facilities might elect to use the existing ash ponds as a treatment system in the future or just keep them on site for some other purposes. There are numerous existing federal and state regulations that govern regulations of the power plants. The federal regulation established technology-based effluent limits for wastewater discharges and a date of this regulation is scheduled for 2014. Some of the discharges are covered by Section 316 (a) of the Clean Water Act, cooling water

intake structures are covered by Section 316 (b) of the Clean Water Act, and of course all the wastewater discharges from power plants that have to meet state water quality standards and EPA nationwide criteria. Power plants generate numerous waste streams. These waste streams include once through cooling system discharge and the volume of this discharge can be significant up to 1,450 MGD. Other waste streams include cooling tower blowdown and boiler blowdown, domestic wastewater, boiler chemical cleaning, water treatment plant discharge, laboratory waste, coal pile runoff and other stormwater. One of the most contaminated waste streams produced by the power plants is flue gas desulfurization wastewater. It was a result of the state Clean Smokestacks Bill of 2002 implementation. The bill was designed to reduce air emissions of NOx and SO_2. All these waste streams can contain heavy metals, arsenic, selenium, organics toxic compounds, total suspended solids, biological oxygen demand, chlorides, total dissolved solids, heat, high or low pH and they can exhibit whole effluent toxicity. Most of the waste streams generated by power plants are treated in the ash ponds and typical volume of ash pond discharge is somewhere between 3-10 MGD.

Each power plant has a unique configuration however for the purposes of this presentation I have tried to develop a slide with the most typical plant components. Most of the power plants like to keep closed to make sure a body of water because they can consume substantial quantities of water. Cooling water and structures are used to pump the water from the body of water and a portion of the water is used by the water treatment plant to produce portable water and produce high purity water for boiler and turbines. There are two types of cooling systems. One is open cycle cooling, and in the open cycle cooling water is used only one time before being returned to the receiving stream. The closed cycle cooling system water has separated several times in the cooling towers before being returned to the receiving stream. All the power plants uses a variety of different scrubbers. If the facility employs flue gas desulfurization scrubber there is a need to employ desulfurization treatment system to purify wastewater generated by this FGD scrubber. All power plants have substantial reserved for coal on site and coal power generates stormwater contaminated by various compounds. They also produce stormwater from other various areas that use for industrial purposes. Some of the facilities have landfills and some of the old facilities also use old ash ponds that might be retired or might be used for some purposes. Some of the facilities also use domestic wastewater treatment plants.

Most of the waste streams generated on site are taken to ash ponds before being discharged to the surface water. One of the major waste streams generated by the coal fired power plants is ash. There are two types of ash, bottom ash and fly ash. Ash transport water also becomes a waste stream after being contaminated with ash. Ash may include trace amounts of heavy metals, chlorides, arsenic and selenium. The conventional method of dealing with ash is storage in the ash ponds; however the new trend is converting to dry ash handling. This method is more environmentally friendly. It also simplifies recycling of ash and it is also a requirement for all new coal fired power plants.

To give you a better idea of how these ash ponds look like I included two slides of the size of these ash ponds might be significant. This is the Dan River Ash Basin and it is approximately 21 acres. The Allen Ash Basin is much larger and the size is 169 acres. All power plants are subject to NPDES wastewater permits and permits contain numerous requirements and limits. All the permits are based on the statistical evaluation of the effluent data for the last 4-5 years. This statistical evaluation is officially named Reasonable Potential Analysis. Limits are only implemented if reasonable potential to exceed water quality standards or EPA nationwide criteria

exists. Facilities conduct effluent monitoring, surface water monitoring and fish tissue monitoring.

During the past three years the Division of Water Quality had been making new permit conditions which include ash pond closure for those facilities that are going to be retired. Dam Safety conditions have been added to all the permits and fish tissue monitoring is being added to those permits that did not contain monitoring requirements in the past. The Division of Water Quality conducts oversight of all power plants. The oversight include annual inspections, review of the discharge monitoring reports that are submitted monthly by the facilities. Facilities also conduct extensive biological monitoring and submit reports to the Environmental Sciences Section of our division, and these reports are reviewed by biologists and engineers.

Historically all power plants had very good compliance with the terms and conditions of the NPDES permits. I have prepared a slide that lists all of Duke Energy Stations and major components of the stations that might have an impact on water quality. Those facilities that don't have FGD systems on site which is flue gas desulfurization systems will be shut down or converted to natural gas. I have also included the list of landfills but only those landfills that have coal ash and FGD waste. Some facilities also have construction and demolition landfills. This is the slide for Progress Energy plants. Once again those facilities that don't have FGD systems will be shut down or converted to natural gas. One of the first facilities that was retired was Weatherspoon Steam Station. I will be happy to answer any of your questions. Thank you.

Chairman Smith: Thank you sir. Nice, brisk, focused presentation which we appreciate. I do have one question and then I will open it up. The slide that you have that you have permit limits ash pond discharge, are permits required for all ash ponds or just the ash ponds that were created after a certain date?

Sergei Chernikov: No. All ash ponds require permits.

Chairman Smith: Active and inactive?

Sergei Chernikov: And inactive, yes.

Chairman Smith: Thank you. Questions?

Dr. Moreau: There seems to be some confusion, at least on the USGS reporting on the water use for power plants. What constitutes a once through system and what constitutes a closed system? If you're recycling into a lake, Harris Lake, I don't think of that as a once through system but apparently the USGS classification that as a once through system. Is there any clear definition in the regulations here as to what constitutes a once through system?

Sergei Chernikov: I know this is a point of argument between EPA and the power plants. For example, the Sutton Facility, they recycle some of their water into Sutton Lake. So they view that it's a closed cycle cooling system. However, EPA historically views only those facilities that employ a cooling tower whether wet cooling towers or dry cooling towers. Only those facilities are viewed as closed cycle cooling systems. In some cases, a facility might construct a cooling pond or lake on its land to be used for recycling of water; however EPA's interpretation of the existing regulation would view this facility as still once through cooling system.

Dr. Moreau: I think that's consistent with USGS.

Sergei Chernikov: Yes. That's correct.

Dr. Moreau: It causes a lot of confusion.

Sergei Chernikov: It still does but that's the view of EPA.

Dr. Moreau: Thanks.

William Hall: What contaminants do you monitor with your discharge permit?

Sergei Chernikov: Well it really depends. There are some contaminants that are required to do monitoring because they are in federal regulation. All the facilities also submit the list of 136 most common contaminants that might be present in the effluent. If we see that some type of contaminant exists in that it might threaten the state water quality standards or be a nationwide criteria, we would add this contaminant to the list of being monitored in the permit. But keep clear that we are not talking about metals, copper, selenium, arsenic or there might be zinc. There might be thalium in some cases. So its metals that typically use in the process of generating power. Mercury is also one of the most typical. For all the existing coal fired power plants we at least have copper, selenium, mercury and arsenic as being monitored. Of course there is ph, biological oxygen demand and in some cases total suspended solids. There is also whole effluent and toxicity which is comprehensive measurement of the toxicity of the discharge.

Chairman Smith: We heard earlier today from the Division of Land Resources about the dam inspections and the issue that they apparently were most seeing, seen most often was seepage around the various portions of the dam. What seepage tells me is, that liquid is coming through the dam and goes somewhere. What the Division of Land Resources was protecting against was that liquid eroding the dam itself, but no protection as to water quality. Tell me what protections you have in place to deal with that seepage that is clearly coming through.

Sergei Chernikov: We're aware of this issue and we have requested all the facilities that have this seepage to analyze this seepage. Our determination was that the seepage is very similar to their water that is contained in their ash pond because that's what seeps. In most cases what we require is comingling of this seepage with a discharge from the ash ponds to make sure that we have one point of discharge. We feel that basically it's the same wastewater. If we're protecting for the wastewater discharge from the ash ponds comingling of this seepage water which is less than one percent of the total volume will also protect the receiving stream.

Chairman Smith: Well these are large facilities and one percent of the total volume strikes me as a large quantity.

Sergei Chernikov: Right. But I mean that is why we require the one sampling point so that we make sure the effluent meets all our requirement after the wastewater from the ash pond is comingled with the seepage water.

I have to clarify myself. It's not one percent of the water in the pond. It's one percent of the total discharge.

Chairman Smith: I see. Other questions?

Marvin Cavanaugh: I've done a lot of work with Water Resources and you peaked my interest because we're trying an all out effort to reduce the amount of mercury. Are you finding a lot of mercury in the ash deposit or in the ash ponds?

Sergei Chernikov: Well before 2002 when the Clean Smokestack Bill was implemented, generally we did not find a lot of mercury in the discharge because most of it went up in the air. However, after a flue gas desulfurization systems had been installed, the amount of mercury in the discharge increased. But both Duke and Progress have installed very sophisticated and advanced systems so basically removed all the contamination from flue gas desulfurization wastewater and typically includes treatment, physical chemical, different types of flocculants. It also includes biological treatment might be bioreactors of wetlands. So most facilities perform extremely well and keep clear the discharge concentration of mercury from ash ponds is between 4 and 5 nanograms per liter. To give a better idea of how it compares with our state water quality standards our standard is 12 nanograms per liter so in most cases we have discharges that meetings water quality standards of the state.

Marvin Cavanaugh: Thank you.

Chairman Smith: I want to go back to the seepage. I am still not clear on this. These facilities have an NPDES permit with which they are permitted to discharge a certain amount of liquid.
Sergei Chernikov: Well actually for this facility we don't have flow limits.

Chairman Smith: So these are no flow limits but it's not a non discharge permit.

Sergei Chernikov: No. They just don't have flow limits and most of the limits are here for concentration base.

Chairman Smith: And what they discharge has to meet certain water quality standards.
Sergei Chernikov: That's right.

Chairman Smith: The seepage is outside that discharge. It is something coming out of the storage facility that is separate from the permitted discharge. Is that correct?

Sergei Chernikov: Well basically that issue was brought to our attention a few years ago and we were concerned about it. That's why we require all the facilities that have this seepage to analyze the seepage to see what kind of contamination exists. What we determined is that the composition of the seepage is basically the same as the discharge from the ash ponds. So in most

cases seepage might be percolated back into their soil and into the groundwater or it might be comingled with the wastewater that is coming out from the ash pond.

Chairman Smith: So what you're finding is that the untreated seepage has the same water quality characteristics as the treated discharge.

Sergei Chernikov: That's correct. Because it comes from the ash pond and basically in most cases they are at the back end of the ash pond after coagulation, precipitation and other treatment employed by the facilities already took place. So what we have is basically as clear of a discharge in seepage as the discharge from the ash pond itself. It's one of the same.

Jeff Morse: So what you're saying is it's the same as the effluent coming out.

Sergei Chernikov: Exactly. Yes.

Dr. Peterson: Although it could be more treated as it moves through soil on water….

Sergei Chernikov: It could be. We don't find significant differences but yes, there is definitely an additional filtration as it moves through the soil.

Jeff Morse: What is then the concern of the seepage other than the degradation of the dam itself? You don't want seepage but the seepage there is getting on is not creating any water quality issues. Is that basically what I'm hearing?

Sergei Chernikov: That's right. We don't see any indication of the water quality damage from the seepage itself.

Steve Keen: I was thinking that maybe you were speaking of the breeching aspect of the deteriorating the berm or, the fluids coming from the seepage breaking down the dam itself.

Chairman Smith: Yes. That is what the Division of Land Resources looks to and the integrity of the dam. At least that's what I heard this morning. They're not concerned with the water quality. They're concerned with the integrity of the dam. Now what I was questioning was assuming that the Division of Land Resources is doing its job in maintaining the integrity of the dam while there is seepage occurring and we saw those photographs. My question here is related to the potential, the water quality issues from that seepage. What I'm hearing in this report is that the liquid that's coming through the dam as seepage has the same water quality characteristics as the permitted discharge, which means it's not contaminating the water.

Sergei Chernikov: That's correct.

Dr. Larkin: Is this just surface water you're talking about? Not groundwater.

Sergei Chernikov: Yes. I think it is separate from the groundwater.

Chairman Smith: Other questions? Thank you Mr. Chernikov.

12-01d Structural Fill/Groundwater Update

<u>Summary</u> (Ted Bush): Mr. Chairman, members of the Commission I will make an effort to be brief in our discussion today. We have talked on several occasions about groundwater related impacts and I'll try my best to not rehash all the materials that we've already covered. But I do recognize that we have a number of new Commission members so we'll discuss again some of the items that have previously been discussed.

We'll focus on two basic areas. Those are beneficial reuse of some of the materials that are included as part of the ash handling facilities and groundwater monitoring. Looking at the regulatory framework the groundwater classification and standards as approved by this body are the applicable groundwater requirements. Degradation of groundwater and compliance boundary requirements which are addressed in as a part of your regulations in 15A NCAC 2L. As you heard previously in the discussion by the Division of Waste Management some of those requirements are addressed by the Division of Water Quality while others are addressed by the Division of Waste Management. In a nutshell the general breakdown between the two groups is that they generally handle those materials that are dry materials and we generally handle the wet materials or those materials that have previously been wet as a part of the process. In terms of the compliance boundary for review purposes, the regulations require a compliance boundary or a zone beyond which compliance is required at a zone of approximately 250 ft. away from the waste application area or 50 ft. inside the property boundary whichever is closer to the waste application area. For the purposes of monitoring compliance with that requirement each facility will have what's called a review boundary which is an imaginary boundary that is half the distance to the compliance boundary. That would normally for most facilities be where you would place wells in order to determine the compliance status of any of the groundwater based constituents that may be migrating either off site or toward property boundaries.

In looking at beneficial reuse, it is allowed in accordance with 15A NCAC 2T .1200. Those rules are designed specifically to address the compliance issues related to coal combustion products as opposed to other types of residuals. Those regulations resulted from a series of discussions between our agency and the utility companies and were put in place by this body in 2006.

Again, as was sited earlier by the Division of Waste Management presentation there are proposed changes at the federal level. Those changes could potentially impact the requirements within North Carolina at some point, at which time we would need to take a closer look at the requirements that are applied at the state level to make a determination of whether or not changes are needed. We are continuing to work with the Division of Waste Management in preparing comments and feedback on those requirements, and we will continue to monitor those closely.

Some of the types of beneficial reuses that are allowed or some of the items that are indicated here: there was in the discussion earlier about structural fill. In addition to those we have some of the other types of uses that are indicated here. Concrete, brick, asphalt, other encapsulated uses, combustion fuel, overlay of roads, soil nutrients, use of landfills, traction control, etc. are all among the types of things that are allowable uses in terms of beneficial reuse for some of the materials that we're talking about. In looking at the requirements related to those, the reuse activities are generally "Permitted by Rule" at 15A NCAC .1203. Those are their requirements that generally apply to land application uses for concrete manufacturing. There are no additional requirements because it is an encapsulated use. It is not something that

would typically be exposed to the environment. Structural fill is not among those items that are deemed permitted. We have individual permits both with Progress and Duke to handle the structural fill as new sites are added. Their permits are amended to address the new sites. If there are uses that are not a part of properties that are owned and are leased by one of the utility companies, then individual permits are issued for each of those types of structural fill activities.

Looking ahead at groundwater monitoring, EPA initially considered regulation of coal combustion products under RCRA in 2000. As a result of those discussions utility industry implemented a voluntary groundwater monitoring program around 2006 and the Division of Water Quality followed up by requesting that both utility companies place wells at compliance boundary and incorporate groundwater monitoring requirements into their permits. Currently those are being incorporated into permits as those permits come up for renewal. Compliance wells were constructed and final maps were submitted by both utility companies during last year. As I pointed out, as permitted facilities come up for renewal those groundwater monitoring plans are added to the individual permits. Groundwater monitoring data is now submitted of both utility companies under DWQ approved plans. Looking at some of the parameters that are monitored, it's largely metals with the addition of ph total dissolved solids. Those are the parameters that are based upon some of the constituents that we see in the ash material itself in order to monitor any of that which may be getting into the environment. Both utility companies have now completed several sets of sampling for each of their facilities. Metals have been typically those areas where we have seen exceedances and we are continuing to work with both utility companies to determine whether or not those exceedances or as a result of the ongoing activities at the permitted facilities or whether it's a naturally occurring scenario. That's about it for it. If you have questions I shall entertain those at this point.

Chairman Smith: The diagram that you show that have compliance boundaries, is that surface water monitoring?

Ted Bush: No. Those are groundwater related requirements. The concept would be if waste is applied there in the waste application area at the center that at some distance beyond in the direction of migration of groundwater you would expect and hope that there will be compliance with the groundwater requirements that are listed in your 2L standards. That distance away is defined in the regulations has 250 ft. away from the waste application area or 50 ft. inside the property boundary, whichever is closer. Secondarily the review boundary is the point that you would normally measure the level of compliance. If there were compliance at the review boundary, unless there were some additional constituents being added you would expect there would have to be compliance at the property boundary just because those constituents tend to either degrade or be diluted over time.

Dr. Peterson: But if your decisions about compliance to property boundary are based upon the review boundary data, couldn't it be possible that you have an exceedance at the review boundary. But by the time it gets to the property line you didn't.

Ted Bush: Absolutely. That's absolutely a possibility. The idea would be if you have high levels at the review boundary that through predictive calculations or modeling that you would be able to determine whether or not there was a problem anticipated at the compliance boundary. That's not to say that the calculation or the modeling would necessarily give you a full scale of

positive indication of whether or not that is the case, but it would give you a pretty firm idea as to what to expect at that point. You could then take precautionary actions to avoid it actually getting off of their property onto another while getting into areas that are outside the compliance boundary.

Dr. Peterson: I would assume you need time course data in some fashion to know about migration, the product and see possible.

Ted Bush: Absolutely.

Dr. Peterson: Concentration over time that indicates that.

Ted Bush: Absolutely. You would expect that to change depending upon the onsite geology, depending upon the onsite hydrogeology. You would expect variations into that and those variations would oftentimes be time based.

Dr. Larkin: I must be missing something. Why not just monitor the compliance boundary?

Ted Bush: Well you could do that, and in fact that's what in this particular situation with the coal combustion product facilities. Because they have been there for such a long period of time and if there is migration to occur it's like to have already occurred. The idea of having the review boundary is that it gives you some buffer zone, some time to do something about the problem before it gets off onto the neighbor's property or before it gets too far away from the waste application area, that you could then take some precautionary action. It's like having a yellow light instead of the light going from green to red. There is a warning level basically that gives you time to react.

Dr. Larkin: So that would be more useful for new facilities.

Ted Bush: It would be more useful. Generally yes it would be much more of a factor if it were a new facility.

Ms. Deerhake: On your slide about groundwater monitoring can you tell us about the time table for determining if the exceedances are naturally occurring or corrective action is needed? When you talk about corrective action are you talking on a site specific basis or coming back to the Commission with general recommendations about how to deal with exceedances?

Ted Bush: It could be either. We have had ongoing discussions with both Progress Energy and Duke Energy as to what actions are appropriate for situations where we make a determination that there has been an exceedance. With most of the type of constituents that we're talking about they are constituents that occur both naturally or could be added as a result of man's activity. One of the things that we would like to be certain of or have a good handle on is which of those categories the actually observed conditions would fall into. So it will be on a site specific basis. It is not one size fits all type scenario. The concentrations will be different, the site specifics will be different and the geology on the individual sites will be different. The potential for migration to nearby receptors will be different. So all those factors will be taken into consideration on a

site by site basis and an individualized determination will be made as to what steps are appropriate.

Ms. Deerhake: I suppose I'm talking about not necessarily the clean up but whether more proactive steps need to be taken at the land application requirements. Do you see what I'm saying?

Ted Bush: Not sure I understand the question.

Ms. Deerhake: To avoid future groundwater contamination.

Ted Bush: You mean for new sites that are put into place.

Ms. Deerhake: Continuation of existing practices. Do they need to be altered in some way?

Ted Bush: Quite possibly. I would say that those would be, again, things that would fall into place naturally as a result of an evaluation both of the impacts and as to how much of that was as a result of the activities, whether or not there need to be alterations in the way that they're doing business. That surely would be on the table. That determination has not been reached yet, though.

Ms. Deerhake: Your timetable.

Ted Bush: It will be site specific. Again, I don't know that we have a specific timetable that is a drop dead date per se as to when it will occur. It will depend upon what we see with the monitoring conditions. As I pointed out earlier we've had 1-3 monitoring cycles depending upon the facility. It's a fairly slow movement with these types of conditions that we're talking about, and with the movement of groundwater being as relative to surface water. So you would be monitoring only several times a year at each of the facilities. So it would not be something that you could make an instantaneous determination of.

Marvin Cavanaugh: We're dealing with dry ash. Is that what we're talking about now or is it being pumped in with?

Ted Bush: For the majority of what we're talking about right now, its material either that is wet or has been wet at some point. The majority of the materials that were discussed earlier during the Division of Waste Management presentation were typically the dry materials.

Marvin Cavanaugh: Wondering if you have water. You say if you're pumping ash into, this is typically a pond?

Ted Bush: It is a pond.

Marvin Cavanaugh: You continue to pump water in so you have to discharge water out of that pond somewhere.

Ted Bush: Which were the ponds that were discussed during the last presentation. The majority of these facilities are regulated as a part of the NPDES permits.

Marvin Cavanaugh: My question is dealing in another area, the word reuse in that, the water reuse. Can you use the water to typically, rather not discharge but for irrigation? Is it good enough to use for irrigation on your site? Typically if you have grass or if you have anything else growing it could be used to irrigate or come back through the part of your pumping process.

Ted Bush: If it meets the reclaimed water standards that could be an option, I would suppose. I'm not aware that we have any that are used in that way and I'm not aware that has occurred. But if it could meet the reuse standards, that could be an available option.
Chairman Smith: Brief lines of questions. One relates to the groundwater monitoring. When groundwater monitoring is occurring, is it correct that the groundwater monitoring is at the facilities that are either wet ash storage or at some time in the past have been wet ash storage?

Ted Bush: Typically those that have ash ponds are the ones that we are referring to.

Chairman Smith: Is there any groundwater monitoring for the dry ash storage facilities?

Ted Bush: I think that was discussed during the Division of Waste Management presentation. There are some. I think there is monitoring at those as well. That's not something that's within the purview of the Division of Water Quality or being addressed as a part of this presentation. But I think the answer to the question is yes.

Chairman Smith: So you're only addressing at this point wet ash, presently or previously wet ash storage facilities?

Ted Bush: Correct.

Chairman Smith: And you don't see the Division of Water Quality's area of interest or jurisdiction as extending to the groundwater quality around the dry ash storage facilities?

Ted Bush: I would say that our general interest would be for the overall protection of the groundwater and surface water resources. I would say that we work very closely with the Division of Waste Management in looking at activities that are ongoing whether it is dry or wet ash and I would say that all of those types of uses that have the potential to impact groundwater could fall within the purview of the Division of Water Quality at some point or another. What we've attempted to do within the department is to categorize those uses in a way that there is some level of responsibility divided up between the two divisions that have responsibility for protection of the groundwater. There is oftentimes overlap and we do on a pretty regular basis when those situations come up have ongoing discussions with the Division of Waste Management to make certain that both divisions are on top of things in terms of protecting the groundwater resources.

Chuck Wakild: Just to be clear I think Ellen had in her presentation earlier the fact that they do have groundwater monitoring at all landfills and they do measure that again the same

groundwater standards, the standards in 2L. What I meant was groundwater standards, same standards that the Aquifer Protection Section looks at.

Chairman Smith: Thank you. Other questions or comments? Thank you Mr. Bush.

12-02 Point Source Perspective on Progress Under the Neuse Nutrient Management Strategy

Mr. Ayers: This is an information item and I don't think this is a conflict. But just in interest of full disclosure, Mr. Dunn is a partner of mine at Poyner Spruill and I will do my best to not hold that against his fellow presenters, but I did want to disclose for the record.

H. Glenn Dunn: It is planned to be that. You know who I am now. I'm Glenn Dunn, the legal counsel for the Lower Neuse Basin Association and the Neuse River Compliance Association. The purpose of this discussion or this presentation is to give the point source perspective of progress in the Neuse River under the Nutrient Management Strategy which was adopted by this Commission over ten years ago. Really about thirteen years ago, which is hard to believe. I think more particularly, while we don't want to be presumptuous, this is the perspective of most of the large point source discharges who are members of the Lower Neuse Basin Association and the Neuse River Compliance Association. I want to make one thing clear early on, as clear as I can, it's very confusing always for me as long as I've been involved with it, in fact. That is that the Nutrient Management Strategy that you as a Commission adopted and I know most of you were not there at the time and that's why this background and setting the stage for all this. That strategy was adopted before a total maximum daily load was officially adopted for the Neuse River Estuary. But then in, I guess retroactively the Neuse strategy that you adopted was determined by EPA and you, as a sort of rubber stamp, to be adequate to accomplish the total maximum daily load for the Neuse River Estuary. So we're really talking about the Neuse rules which are the means for accomplishing the total maximum daily load for the Neuse River Estuary. I'll probably say it three times. I want to point out the total maximum daily load is for the estuary, not for the entire river. But obviously you can't regulate what goes into the estuary without regulating the entire river which is what the Neuse River nutrient strategy does. The Lower Neuse Basin Association, I want to tell you who we are first and I'll try to make that brief. There are 18 NPDES holders; most of the major dischargers in the river basin are members. This organization was organized early and is purely a monitoring organization. Everything it does is in that direction at least, and primarily by means of Memorandum of Agreement with DWQ monitors at 48 sites in the river and the various tributaries of the river at the cost of about $87,000 per year. That's the most recent year. I think it has been more or less depending on which year. But also the organization provides funds and assistance to several monitoring programs, ModMon and FerryMon at significant costs which are doing monitoring of various pollutants and particular nutrients in the estuary and of the FluorMod which is a new program coming up. We're going to help with that. That's another methodology for monitoring and identifying nutrients in the river. In addition we provide technical resources for annual operating training which is a very important function and wastewater plant optimization. The organization or association created for regulatory purposes by the Neuse rules is the Neuse River

Compliance Association. It is a compliance association specifically authorized by the Neuse rules. The Neuse River Compliance Association membership, almost all are the same as those in the LNBA, and it constitutes by far most of the large point source discharges on the Neuse River Basin. The NRCA estuary allocation, this is important, is the sum of all of its members' allocations because under the Neuse rules all the large point source discharges, over half a million gallons per day flow were given specific mass load allocations. The NRCA is a primary vehicle for point source achievement in the Neuse River because they do have most of the point source nitrogen discharge. To give you an example of how much that is, in 2012 its TN allocation which by the way is in a permit that is given to the NRCA as a group. Its TN allocation is 1,184,165 lbs. Now I know most of you know the Neuse River Basin and I'll go through this quickly. Let me just tell you, go above New Bern and about a little over a third of the way to Kinston; that is where the estuary begins, that is at Streets Ferry and that's where the TMDL as a regulatory requirement begins. We are talking about the estuary and it's above New Bern about 12 or 13 miles. Quickly it's a large river basin 6,200 sq. miles and 3,500 miles of fresh water streams, 200 miles long and totaling the main stem starting at Roxboro going to the Pamlico Sound. So it starts well above Falls Lake. Importantly 371,000 estuarine/saltwater acres is where the TMDL applies. So it's an extremely broad, shallow estuary and the average depth is 15 ft. and we won't go into that. Maybe that has something to do with the difficulty of managing it and its amenability. I think the nutrient production, although I'm no expert on all those reactions. Dave Moreau can explain them all to you at some point, I'm sure.

The 1997 Neuse rules were adopted when most of you were not here when they were adopted. I'll hit the main points because there's too much in there to go into great detail. The overall goal is a 30% reduction in total nitrogen to the estuary from a mean baseline calculated from 1991 to 1995, 30% reduction. Those established without a model to actually allocate among all sources but as I've mentioned where point sources are concerned, there was an 1,640,000,000 lbs allocation to them as a category and that total allocation was and the budget was allocated among NPDES dischargers. The large dischargers get individual total mass discharge limits allocated to them. Small point sources, those below half a million gallons per day have no TN limits and importantly for all of the point source dischargers, particularly for those in our group, the large dischargers, compliance is totally measurable. It is accurate measurements through the DMLRs are always submitted in accordance to the NPDES permits. Non point sources, a few important points there, which they are regulated but there's no allocation or budget by source, no specific individual allocations. The controls there are by Best Management Practices, buffers and the MS4 programs for some but not all of the locales, that is there are stormwater discharge programs. As I said reductions are not measured. The reductions are calculated based on assumptions as to what these BMPs, buffers and MS4 programs accomplish, Best Management Practices in these stormwater programs. Their reductions when calculated and reported are based on assumptions as to the effectiveness of these vast methods that are required under the rules. Importantly to us no trading is allowed between point and non point sources. The rules don't allow that. The NRCAs role under the Neuse rules as I've mentioned, it holds an NPDES permit which is as a limit of the total of all of its twenty members allocations. That is an enforceable limit. The members are allowed to make annual transfers of total nitrogen and each year when the permit is renewed or there's a sort of minor renewal of the permit. Any trading or shifts of allocations among the members are recorded in the permit because each individual member's allocation is shown as an attachment to the permit. Importantly and the real purpose of this, I think it is fair to say is that, the members are exempted

from compliance with their individual TN allocation if the NCRA complies with its allocation. I'll first say that the NRCA is doing that very easily now. The reductions have been tremendous. So we're way below the allocation as a group but they have along the way two or three members who have struggles. Smaller municipalities with small budgets needed years to get into compliance from where they were and so you could say they got in under the wing and avoided violations by being a member of this group, and falling into compliance because the whole group is in compliance. There would be permit violations for the NRCA and any member that exceeds its allocation if the NRCA exceeds its allocation. But as I have already said they are far from that at this point, I'm glad to say. The NRCA's operational procedures' first point is well if these, I hate to call them violating discharges, those exceeded their allocations did it under the wing of the group, so to speak and avoid penalties, what's their incentive to do better? The NRCA has adopted its own operational rules through bylaws as an association. It's an incorporated association and has penalty assessments. There's a formula for it which I won't go into but penalty assessments are a pretty good size for those based on the number of pounds of those who exceed their allocations, and importantly because it goes back into improvements at those plants. The money is held for the particular discharge of paying the assessment and 80% of it is available to go back to that member to pay for improvements if they implement. There is reporting as to the plan and progress made on their plan to improve their plants and its operation. Most of the money paid in an assessment goes back into improvements that will net out nutrient reductions or nitrogen reductions primarily. As I have mentioned the members can exchange within the organization but the bylaws don't allow them to exchange to someone outside the organization. We keep the nitrogen in the organization. Finally I'll mention that an estimate, probably fairly accurate but it's not precise because we don't know precisely, but approximately $300,000,000 have been invested now for the last 12 years or maybe 15 years for plant improvements, capital improvements at plants. So a lot of money has been spent and it is money well spent as far as accomplishing tremendous reductions. I should have introduced Haywood Phthisic at the beginning. Haywood is the executive director and has been for several years of both of these organizations. He's going to go through what we see as a result based on monitoring data that's out there and tell you where things stand. The idea really is to give you some briefing on progress and where we think it lies and where it hasn't been made. I'll just add one observation I made as a totally non technical person that in addition to the money spent on capital improvements in these plants, I've been their counsel for 13 years and I can see it happening. Associations are supposed to achieve certain goals just by the power of the association and exchange in information. It's not just money spent on hardware. You can see that most of the people who attend, members who attend run the plants or the utilities directors know how it works. They exchange information and I'm confident that a lot of the improvement is coming from exactly that, not just dollars.

Mr. Morse: What are the total expenditures in terms of putting up money for improvements to the plants? You have a dollar amount?

H. Glen Dunn: That's the number, $300,000,000

Mr. Morse: I didn't see that in the circle

H. Glen Dunn: As a bit of a disclaimer not everybody could or wanted to go to the time it takes to sort out exactly when they made major improvements, a lot of which was for nitrogen but also helped with other treatment. Most of them did try to sort them out so we think that figure is generally accurate:

Mr. Keen: Is that all from utility rates?

H. Glen Dunn: You mean is it paid from utility rates?

Mr. Keen: Did you get any grants or?

H. Glen Dunn: I'm sure some grants were involved or I know some grants were involved. But most from utility rates would be safe to say.

Mr. Keen: Clean Water Management Trust Fund?

H. Glenn Dunn: Some. I can think of a couple that had been. Most by far has gone through the rates. As I said there have been operational improvements that don't necessarily cost. Haywood will give you more illuminating information, I hope. I hope I set the background of how this works and who we are.

Haywood Phthisic: What you see before you is the reductions that have been achieved by both the associations since 1995 which was our first year of really calculating what was happening with the association members. That represents a 70% reduction by the year 2010 and we had a significant increase to population in the Neuse Basin around 50%, and at the same time the average discharge per day for all our members increased about 25%.

Reuse is a tool that our members use. It's more of an emerging tool. Major expenditures have been up to the facilities themselves to put in biological nutrient removable processes. But it is a significant number, almost 15 million gallons the year 2010. That represents an investment by membership of $60,000,000 and that number by 15 a hard fast number because there were really no reading systems for these rules came in implementation in 2003. If you want to equate that number to a discharge what it really means is one of our member's discharges 4,000,000 gallons per day. So if they had a reuse system that would discharge or reuse 550 million gallons, that would mean they would not discharge approximately 130 days. They would not be putting any water back into the river. Perversely a larger user like the City of Raleigh, that represents 12 days of not discharging to the river. That number represents 1% of our membership's total in 2010 annual discharge.

Dr. Moreau: That's an annual discharge.

Haywood Phthisic: This is always, when I talk, the slide of interest, the purple line represents what the association has accomplished from 1995 to 2010. The blue line is the estuary TN or total nitrogen limit of 6.75 million pounds annually. The red line represents the raw data that's used in the research papers that have been given to the Commission. Of course the research paper uses a different analogy of the data to produce its results, but for simplistic reasons we just use the raw data. Now in Streets Ferry the monitoring station is located northwest of New Bern.

That's what's known as Station 00 in the ModMon monitoring program that monitors the estuary. So as you can see there's fluctuations in the load arriving at Streets Ferry. We also have a data set for Fort Barnwell that's in the Neuse plan that pretty much mirrors the same loading. The green line represents the annual rainfall in the central coastal plain region and to point out we had Hurricane Fran, Floyd and Isabell. When it rains we get loads sent to the estuary and in 2001, 2005 and 2007 those were drought years. We're coming in under the TMDL limit at those periods. However, this does not represent loads coming out of the Trent River which is right in the New Bern area, and that load can be anywhere from 200,000 lbs to 500,000 lbs. When we put this graph together it raised a lot of concerns that really what is being accomplished in the TMDL? There is a lot of progress that has been made, there's fewer fish kills and that helps the estuaries better, but what are we really accomplishing? This is a little flow pattern that is taken out of that research. You had the powerpoint and the appendix information. The research is indicating that in Clayton there has been a 30% reduction in TN so the management strategy is working in that area. When you get to Kinston it is 23% reduction. So the further down the basin you go the less reduction that's being realized at the estuary. That more or less correlates with the slide for this which shows the load at the entry of the estuary. We're seeing a huge influence from Trent River and there's only 400,000 gallons of permitted capacity for three wastewater plants in the Trent River so that source is something other than point source. They are not major facilities; they're minor facilities and they have an allotment of about 15,000 lbs annually for nitrogen, and they're pretty close to that. So where's the other nitrogen coming into the estuary; where is its origin?

Again this follows up on the two research papers that have been provided. We're seeing reductions up in the upper part of the region but as you get down to the lower part of the region the reductions are not being realized. I will point out that its organic nitrogen that's rising in the basin. Nitrogen associated with wastewater plants are nitrate/nitrite. The plants have to remove organic nitrogen before they can remove nitrate/nitrite. That is occurring. We have members that are achieving significantly lower treatment rates than technology allows or it says it would be. We feel very comfortable in the numbers that we're discussing. We were told early on to be quick and to the point so we're quick and to the point. Again, we are very concerned about where the estuary loading levels are headed. The point sources as a whole, all people holding NPDES permits in the basin in 2010 which they represent about 800,000 lbs of nitrogen arriving at the estuary. The rules allow us to go up to 1.64 million lbs. so if you recall the graph you elevate that, the difference in what's happening today to that 1.64 million lbs. and the TMDL is not being met at any point. The things that we are concerned about are the non point source, the tools and those things that are being used to calculate what is getting into the waterway. Minor point sources, those are NPDES permit holders less than 500,000 per day. Prior research in the DMR database in Central Files indicates they have exceeded their allotment as numerically illustrated in the Neuse rules. They are about 33% over that and following up with what's happening in Falls Lake it may be time to take a look at the minor point sources and use a concentration limit or a mass limit because without regulation there's no incentive to produce nutrient free water. As in the Falls rules that you heard in an earlier presentation all communities have to participate. That's not the case in the Neuse rules. It's only designated or those called out in the rules. It may be a time to look at the smaller communities left out and bring everybody into the fold. Again with the reuse water it is a tool that's going to be needed in the future and we have arguments about it legally being called wastewater because it is high quality water that's being produced. Its quality is better than what is in the river in most cases and we hope that at

some point in the future that distinguishing term can be changed to a resource instead of a wastewater. As in the Tar-Pamlico, the Jordan Lake and Falls Lake there are point/nonpoint sources trading programs there. By rule we are prohibited from having that option and we feel that is something that we need to look forward to at having that program going forward. We will entertain any questions.

Chairman Smith: Well I commend you for putting a lot of information in a tight package and presenting it well. Would it be fair to say on that last screen that there are opportunities and needs? Don't let me put words in your mouth. What you are encouraging us to do if we are seeking further nitrogen reductions in the Neuse Basin is to focus on nonpoint sources and to consider extending the Falls rules to new development for the entire basin?

Haywood Phthisic: Well it's not necessarily extending the Falls rules; it's applying the stormwater programs to all jurisdictions below the dam. That's not the case at this point. You can have a county that has a program and a town in that county that doesn't have a program. That's what exists today.

Chairman Smith: Do you have any specific suggestions about nonpoint sources?

Haywood Phthisic: Well we are concerned and grant it this all happened years ago, there was research that was put in place that said this is the mechanism that can account for it. What we're seeing at the estuary is something is wrong with the accounting method. I'll point out that for wastewater treatment plants tests are done daily. They are reported to the state monthly. These are calculated numbers and there's a person who signs a line that is attesting to the accuracy of that information, and if they don't, if they falsify that information they can be in a severe pinch.

Chairman Smith: I quibble with you a little bit about your slide that begins research indicates that little progress has been achieved. I understand what you are saying. That is if you look at the overall reduction, the total numbers are not as impressive as everybody would like to see. At the same time the point source reductions have been significant and the issue that you raised to us is what's causing that huge increase coming out of the Trent River.

Haywood Phthisic: The lower part of the basin. That is more than the Trent River. The map we had is not the best representation of the Neuse Basin but there are many subbasins that are influencing where they come in its pretty close to the start of the estuary.

Chairman Smith: So what we see is, the numbers that you just gave us show reductions going all the way down to the river. The reductions are decreasing, that is the minus numbers are they getting smaller?

Haywood Phthisic: Correct.

Chairman Smith: They're going from 35% to 13% and then all of a sudden it jumps up to a +55.

Haywood Phthisic: In the Trent River.

Chairman Smith: That's what leads you to say overall it has been little progress even though there has been tremendous progress north of the Trent River?

Haywood Phthisic: Correct.

Chairman Smith: Thank you.
Mr. Tedder: Haywood, great presentation. Would you go back to your graphics slide real quick? What I see is you've turned that nitrogen faucet about as far as you can turn it from a point source perspective.

Haywood Phthisic: We, the 20 members, expect that number to go down in 2011 because there have been some facility upgrades so the nitrogens were operating more efficiently moving nitrogen. But we are pretty close. I would say 425,000 lbs is going to be the bottom.

Mr. Tedder: Obviously if you went to 1 lb, you're not going to meet the blue line. It's just a question because I know you probably; I'm assuming you probably pull phosphorus, along with your monitoring nitrogen. If you were to plot phosphorus, even though I know you're going after nitrogen that bottom line there, what have you got in phosphorus reduction just for the fact you're treating nitrogen?

Haywood Phthisic: In terms of concentration there is a side benefit from biological nutrient removal processes. It actually happens along in concert with the nitrogen removal. We have some members that are down in the tenths of parts per million because of the operating nitrogen removal systems.

Mr. Morse: As one of the original hearing officers on the Neuse rules we were concerned at the time; I remember the discussions about the role that point source was playing and the role that nonpoint source was playing. Those concerns were raised back then whether or not there was a balance between the point source and the nonpoint source, and what would be the eventual results at the estuaries. I think this report confirms some of the concerns we raised back then. We just weren't sure we were accomplishing what we had set out. This also gives me concern now based on these results as this model, the Neuse model, moves up the state as we get closer to other basins and my particular basin, the Catawba Basin. Spending $300,000,000 on wastewater treatment plants and improvements for the purposes of reducing nitrogen for an overall effect, if we're not getting an overall effect then is point source being asked to play a role where we're not being effective with our dollars to ultimately fix the problem we're all trying to solve. So I hope that in the future as we look toward other basins we just don't look at point source as the easiest target. We know we got a measurement but if it's not accomplishing which this tends to give me some concerns that we're not accomplishing ultimate results, that we just can't place the whole burden on point source. I think this validates this concern that was raised ten years ago.

Dr. Moreau: We do not have a water quality standard for nitrogen or for phosphorus. We have a water quality standard for chlorophyll-a and dissolved oxygen. Clearly nitrogen and phosphorus are related to those two water quality standards but when measuring progress, we measure both the reduction in the nutrients but we also, what this doesn't show is the response in

the estuary. It would be useful to have the DWQ data added to this to show what kind of responses or non responses we're getting in the estuary. I'm up to my ears in nutrients chairing the committee on the Mississippi River and hypoxia in the Gulf of Mexico. This is probably the number one water quality problem in the nation right now and it's not an easy task at all. You're to be commended not only for the progress that you have made in reduction of nutrient load from point sources but also your willingness to contribute to an understanding of what's happening in the larger basin. The measurement of these loads from the tributaries is extraordinary helpful, and without your input on that I don't believe we would have that data. The primary point of measurement and reporting is at Streets Ferry. So I commend you for that. I would suggest supplementing this; that DWQ add comparable data for what's been happening here at monitoring results on particularly DO and chlorophyll if available.

Chairman Smith: Could we have that at the next meeting Mr. Wakild?

Chuck Wakild: As you know we presented a fairly extensive report at the time that we redid the Neuse Basin Plan and I can't recall as I sit here when, 5 years went so fast. We can do that. I just don't want to commit to the next meeting.

Chairman Smith: That's fine. Just keep that on your list. Thank you Sir.

Mr. Cavanaugh: The data on slide 12 which shows your line graph with the TN comparison. What's the year on the latest data? What's the year on that? This is comparing 1991 with 1995. Is that the pattern or is that something now that was compared to 1991, 1995?

Haywood Phthisic: That was the report in 2009 Martin Lebo and Hans Pearl and the update in what's just been published in 2011. In those research papers that were emailed out it goes into a lot more detail than what you see. We made this slide very simple.

Mr. Cavanaugh: Having grown up down in that part of area I probably mispronounce the creek but this is what it was when I was knew it, Contentnea Creek when I was a boy. It may still be; I don't know. But I noticed that there has been a 2% increase and this huge 5% increase on Trent. Are there any indicators as to what that is contributed to?

Haywood Phthisic: Just organic nitrogen. We're at a point we are realizing the sources. We can dissect nitrogen and know the sources, but we don't know the contributor, and the Fluor Mod project is hopefully going to bring some answers to those questions.

Mr. Cavanaugh: It was strange that we made such tremendous headway and when we got to the tail end we had no change. Very interesting. Thank you.

Mr. Ellis: I want to thank Mr. Morse for his work years ago on the Commission in dealing with this. This was our first really big issue on a basinwide approach to nutrient management. The only people I hear say that everybody's focusing on point sources is the point sources. We've heard from nonpoint sources for every single year since this got started and a lot of individuals have put a lot of their money into changing things. Practices have changed. Now I'm not going to say that everything is perfect but you are not the only people doing anything. We appreciate

what the cities have done and I applaud you for it. But we're going to hear from folks in just a little bit about what the agricultural community has done and using the best methodology to calculate losses that's available. If you have better methodology I think we would appreciate hearing that. I spent some time on the Neuse Basin Oversight Committee and I can tell you a lot of people are putting a lot of effort to make these numbers exactly right and they do the work every year. So we're going to work together with you on cleaning up the Neuse, Tar-Pamlico and the other rivers but you're not the only ones, and we appreciate your help.

Haywood Phthisic: We're not here to say we're the only ones. We're concerned about where the future is heading with the load data that's being realized at the estuary.

Chairman Smith: We understand.

Dr. Peterson: I am glad Dave pointed out what I was most concerned about and that is wanting to see the things we actually have standards on that we use, and that is chlorophyll-a and DO. I want to add to that I would be interested as well in things that we maybe don't quantify as well. We have certainly had an entirely different public climate relative to things downstream of chlorophyll-a and DL. That is to say there has been the odd fish kill but we haven't had those year after year of people yelling about how their shoreline stinks because of all the dead fish, and so forth. I essentially haven't heard the word pfilesteria for a decade and a half. Don't know if I want to but in any case the subsequent downstream sorts of things including the public attitudes and the public response to this is also an important part of evaluating the success of what you all are doing at huge expense on the point sources upstream and what the ag community and others are doing for the nonpoint source. So it's a broader perspective that needs to be taken. I have a question which I didn't follow up with a comment. But what you are suggesting seems to be that the form of the nitrogen changed dramatically downstream so that its proportion is much more organic nitrogen and those measurements you made at Streets Ferry, Fort Barnwell and some relative to what the proportion of nitrogen is in organic upstream in Kinston, Raleigh or wherever.

Haywood Phthisic: Correct. If you review those research papers you can see, actually go back to the TMDL, you can see where plant improvements were made when wastewater plants went from secondary limits which treats no ammonia or nitrogen to plants which were considered tertiary area that treated to low level of ammonia nitrogen. Then you can see the next step when they went to BMR processes. Those are very easily depicted.

Dr. Peterson: Ok. I was just trying to be clear and I'd read Lebo's and Ferrell's papers before you sent them but it was nice to have them. What I wonder is whether those don't stimulate micro-algae growth in different ways and so that change in the organic to inorganic, although the total may not show the decline that we anticipated that it is still effective in determining what levels of nutrient reductions and then oxygen utilization may exist. That's my one thought, but my other thought is this too. Obviously that is a theme in the papers, and you presented it too, this tremendous association with the storm years and the great rainfall runoff associated with them relative to the drought years. I wonder this when we have that tremendous runoff we also have a rapid forcing and displacement of that water from the Lower Neuse and the estuarine system. Therefore, it's quite possible that while we have exceedances relative to the target of what we wanted for loading to the Lower Neuse, estuarine part of the Neuse, it may be that is a

much less serious issue with the high water flows in the sense of sitting there incubating and growing all the algae, and then DO too. Now I'm simplifying things terribly and I'm not the person to do this. But just looking at it from a broad perspective, which is what you all are doing, what is valuable to us and gives me these half-baked ideas, suggest that those pursuing those sorts of issues could be rewarding and refining what we're doing in management, and understanding about what's affecting those bottom line variables that EPA has us deal with, which is to say chlorophyll-a and DO, then the bottom line variables that so much of the community up the coast is interested in. That is whether the fish have gone belly up, whether they're stinking and whether there's other sorts of obnoxious things associated with the water that they disapprove of.

Mr. Hall: First I'll commend you of many of your members becoming reuse members and reusing a valuable resource. In your last slide you talked about maybe a possibility of having a higher use of reclaimed waters vs. what is being done now. You indicated maybe some resources. What is keeping your members from using reclaimed waters more than they do now?

Haywood Phthisic: The resources distinguish the factor that it's still wastewater and it's treated as a wastewater. If you have a reuse line that breaks or spills it's treated as wastewater in the regulatory sense. We understand there are some other states that are approaching it differently and we have not gotten into the details yet. But at a point inside the plant it changes from being a wastewater to that resource. That's an avenue we would like to see explored further.

Dr. Moreau: In that part of the NPDES permit regulations from EPA, I don't think that's, the reality is that you can discharge it, pick it up 10 ft. downstream at the discharge point and it's no longer wastewater.

Haywood Phthisic: Understood?

Dr. Moreau: Is it so long as you discharge it, it is no longer under the NPDES permit. If you recycle it straight out of the plant it is still under the NPDES permit.

Chairman Smith: On your reuse discussion you gave us some comparison numbers of a certain number of days that a municipality would not discharge back into the river. Wouldn't it be equally accurate to think about that as a certain number of days that the municipality would not be withdrawing water from the river?

Haywood Phthisic: No sir.

Chairman Smith: Why not?

Haywood Phthisic: Not necessarily the same. Not apples and apples.

Chairman Smith: If they reuse water wouldn't it be water that they would not have to have from some other source? That is the river.

Haywood Phthisic: In a sense if you have a lawn irrigation program where you are using reuse water for lawn irrigation vs. potable water that is correct. If that's what you intended.

Chairman Smith: Ok. So for instance golf courses are a good example of reused water and if they weren't using the reuse water, they would either have the change the irrigation policies or get the water from somewhere.

Haywood Phthisic: Most golf courses typically pull from streams that I've seen. I don't know of too many that would use potable water.

Chairman Smith: When would that reusable water not be accurately described as reducing the amount of reduction from the river? That is, the amount of intake.

Glenn Dunn: The water he's talking about is the water that will be used otherwise from somewhere other than the river.

Chairman Smith: Other than the river. Alright. It's coming from some surface water source.

Glenn Dunn: It's coming from a stream.

Chairman Smith: I understand. Ok. Other comments or questions?

Mr. Hall: Just to clarify that any time you use reclaimed water to displace the use of potable water then you can in fact reduce the amount of water you take out of the stream to be treated for potable drinking water.

Chairman Smith: Correct. I asked my question poorly by confining it to river intake as opposed to some other source.

Mr. Cavanaugh: One last comment. This is the kind of work I do. We've got to do a mind change to get people to understand. Given the example there is one of the universities I think out in Alabama right now, their dormitory is collecting their own rainwater and they've got special permits to use that as grey water plus to flush their commodes and stuff with. We've just got to change that mindset. To give you a good classic example as you harvest water you can go look at the outer banks of Ocrakoke Island the older regional system have theirs when they did this. It's educating everybody how we can do this and not dump the water back into the stream and we do wastewater treatment plants, but not dump it back in that but send it to a holding pond to use for the irrigation on golf courses, athletic fields and so forth. That's just something that has just got to be done in the way of the future if we're going to protect our aquifer.

Haywood Phthisic: UNC has a system like that.

Mr. Morse: In defense of my remark I purposely referred to nonpoint source but also included in nonpoint source are local governments. I wasn't trying to single out any particular use but nonpoint source also includes local governments.

Chairman Smith: Any other comments or questions? Thank you both very much. It was an excellent presentation and helpful to us. Glad you suggested it.

We move into 12-03 Annual Progress Reports on the Neuse & and Tar-Pamlico Agriculture Rules. This has been scheduled twice before and we didn't get to it so John has narrowed this presentation down into a very tight package, I'm told.

Dr. Moreau: We have seen the reports.

Chairman Smith: I'm told we have seen the reports.

12-03 Annual Progress Reports on the Neuse & and Tar-Pamlico Agriculture Rules

Summary (John Huisman): You have seen the reports. I'm happy just to give a quick very brief overview if you prefer that today.

Chairman Smith: I think that will probably be enough. Then if folks have questions they can go on with them.

John Huisman: As you know, me and my colleague, Mike Hermann, presented back in the November meeting to the Water Quality Committee and today I will just give a brief summary of the presentations that we gave on the Annual Agricultural Progress Reports for the Neuse and Tar-Pamlico. I'd be happy to take any clarification or additional questions you have after I get through that.

As you know we have nutrient management strategies in place for both the Neuse and the Tar-Pamlico river basins. They've been in place since 1998 and 2001 respectively. Each of these management strategies contains an agriculture rule which requires agriculture as a whole to reduce their nitrogen loading by 30% with the added requirement of no increase in phosphorus load in the Tar-Pamlico River Basin. As of this year's report agriculture in both basins continues to meet and exceed the required 30% reduction with agriculture achieving an estimate of 49% reduction in the Neuse Basin and estimated 52% in the Tar-Pamlico Basin, representing a 5% and 2% improvement over last year's reported progress. These reductions are achievable largely through crop shifts, from high nitrogen crops to low nitrogen crops, reduced fertilizer application and implementation of Best Management Practices and crop land loss. As mentioned earlier the Tar-Pamlico also has the added requirement of no increase in phosphorus load relative to the baseline. Data collected for this year's report indicates that there is no increase, risk and phosphorus loss relative to the baseline year-end in the Tar-Pamlico Basin. So in conclusion the agriculture community continues to meet and exceed the 30% reduction requirements in both basins. Moving forward DWQ will continue to work in partnership with the Division of Soil and Water Conservation and the Basin Oversight Committees in both basins to promote additional BMP implementation and continue to refine any accounting methodologies as new information becomes available. At this time I will be happy to elaborate or answer any additional questions you may have since I realize that was a pretty brief overview of the progress in the two river basins. Thank you.

Chairman Smith: Comments or questions? Thank you Sir.

Mr. Brewer: I have a comment. I was going to ask Tom. Do you feel there's something wrong with the methodology in the calculations of the nitrogen reduction and agriculture community?

Mr. Ellis: No. I think what you've got is two different systems to take a look at. With point sources you can take a sample at the end of the pipe. You got a clear definition of what's happened. With the nonpoint source, an action on the land, let's say fertilizer on the field, it's used by the crop; some goes into the shallow groundwater and heads towards the coast. There's nothing you can do on that field to make that nitrogen disappear faster. It's going to take its time leaving the system. It's not going to be out in a year. It may not be out in twenty years. We don't know. A lot of the loadings that we're having are historical loadings and there's nothing you can do on the property today to make it go away faster.

The measurements that the agriculture community makes are at the field edge because that's where we can measure it. Point sources go right to the stream but with the nonpoint source, that field, may be 50 ft. from the stream or maybe two miles from the stream. It just is not an easily measurable thing like a point source.

Mr. Brewer: Thank you. I didn't get the rise out of you that Jeff did but that was good to hear those comments.

Dr. Peterson: This is my annual occasion for making the same comment and it's a serious one. We have simply not progressed on it. Now I think back when the Tar-Pamlico River Association began all this issue and moved us to the stage we're in now after lots of public hearings and lots of hard work by a lot of people. But they did not restrict their concern to water born nutrients. They identified at that time the growing use of animal feed lots and the tremendous injection of ammonia into the atmosphere that then is going to come down and wet and dry deposition to get into our surface waters and continue to add that particular problem. I think it is high time we make a move on that so that we recognize that there's a connection between air quality and air emissions and water quality, especially as it applies to these sorts of plans and to understanding the data whose explanation may be somewhat elusive. Maybe a lot of the elusiveness is because we don't understand what's happening in that atmospheric deposition. So every time I read this report every year it gives me the annual progress reports on nonpoint sources I raise the same issuet; it's nonpoint sources minus this big gorilla that we need to incorporate and put into play somehow. I think this is likely to come back and hurt us if we don't make some attempt to bring that into play and witness challenges we face with the NPDES Committee yesterday.

Ms. Deerhake: Thank you for your remarks Dr. Peterson. I've been a big advocate of the cross media consideration by this committee and the transport issues that happen there. I really do believe that it's worth a significant joint effort by air quality and water quality to try and quantify the deposition and the role of deposition in these basins.

Dr. Moreau: I'll just comment that when we are talking about taking actions against nonpoint sources we are relying on state authority, not federal authority. Clean Water Act clearly exempts agriculture from regulation. It does have Section 319 which has addressed nonpoint sources but

those are not relied on federal authority. Any implementation of that depends on state authority and so as we talk about moving in that direction we have to be aware that we're not being backed up by the federal government.

Mr. Martin: I would say one of the opportunities that we have to take care of this is as Tom pointed out there's lots of time that this is groundwater dischargers because being whether it is septic systems, agriculture, whatever, people applying fertilizer to their yard but the EPA in their infinite wisdom has taken away our most effective strategy of dealing with that; because they won't allow online stormwater treatment devices. If we can't put those devices online you can't get at where the problem is and we'll never be able to attack this until they come to their senses and realize that on one hand they're requiring all this stormwater treatment and with the very same hand they're stopping you from being able to do the only effective way to treat this unless you're going to put a pump in the stream and pump the water out and build an upland device which is never going to happen. So it's just frustrating to me over the years to have seen that a couple of (attorneys excuse this) idiot attorneys at the EPA and Region IV's interpretation of the Clean Water Act has caused this to happen.
Chairman Smith: I will be the first to acknowledge that having a license to practice law does not guarantee a lack of idiocy. It is something we see demonstrated regularly.
Mr. Ellis: Some years ago we were working on measuring nitrogen from agriculture operations and we had a very effective management practice implement itself. It was called Beavers. Kevin just has to train beavers where to locate these facilities and maybe that would solve a part of the problem. One of the things that we discussed in regards to air and I'm lost when we get to air. I don't claim to have any knowledge about the air rules or how that works. But the amount of the number of animals being produced in Eastern North Carolina, particularly swine which is the one most focused on. Remember that we had a moratorium on that expansion for quite a few years so the number that we got now, it's the same number that we had then. I don't know whether they produce the same amount of emissions as they did then, but it probably is going to be pretty close. That's not increasing. So for decreasing at other places that may be a steady line we could, might be good to get it down but it's not going up as some people think.

Chairman Smith: What we are seeing is a tremendous growth in the poultry population in this state.

Dr. Moreau: You've still got application of fertilizer. I haven't looked at the crop data.

Tom Ellis: Again that varies from year to year depending on what crop you can make money with. Eat more tufu. Soy beans being don't need it.

Dr. Moreau: It's interesting, in the Mississippi River the representative of the National Corn Growers Association showed up and testified that they had nothing to do with the flow of nitrogen down the Mississippi River.

Ms. Deerhake: Just to further my suggestion about quantifying the role of nitrogen, I know that a number of researchers have worked on this. Speaking about Divisions of Air Quality and Water Quality if they could begin to take the same approach to laying out emissions reductions in emissions being achieved, for example through federal regulations right now through the

implementation of voluntary BMPs by the agriculture community and what that can achieve, in the same systematic fashion that they did for the mercury TMDL that was presented yesterday to us. I think that would be very informative to the Commission.

Sheila Holman: Thank you Chairman Smith. I just wanted to mention that as Division of Water Quality looked at both the Falls Lake and the Jordan Lake issues, we did provide nitrogen deposition numbers. We looked at nitrogen derived from the NOX emissions which as Ms. Deerhake put it out those are under a lot of federal and state regulations. So we are seeing a projected decrease in the nitrogen coming from NOX that's being deposited. But the ammonia numbers are stable to increasing. I don't remember the actual numbers but we can certainly look at that for both the Neuse and the Tar-Pamlico.

Chairman Smith: Good. That would be helpful. Any other comments or questions? Thank you Mr. Huisman and Mr. Hermann. Next we have Ms. Stecker and Cam McNutt which is a follow up from a previous meeting. I think probably our September meeting in which we had considered more questions raised about the 303d List Assessment Methodology. So we've asked for a more detailed presentation or a follow-up presentation on that methodology. This too was scheduled for the last meeting. I'm happy we are getting to it today.

12-04 303(d) List Assessment Methodology

Summary (Kathy Stecker): It was at the September meeting that Jay Sauber and I gave you all an overview of our monitoring programs and the Clean Water Act, Section 303d process including the 303d list of impaired waters and total maximum daily loads. So today as you requested Cam McNutt and I are going to give you a little more detail on how the 303d list is developed. Cam will show how we use the assessment methodology to determine whether waters are not impaired or are impaired. So this methodology is not just for the 303d list. We can talk really fast. We probably got 15 to 20 minutes of material here. So I will give a very brief introduction.

You recall under the Clean Water Act states are required to develop that list and submit to EPA for approval by April 1st of every even numbered year. We really can't talk about 303d without talking about 303a, b and c. I'm not going to talk long about it but a, b and c deal with water quality standards and standards include uses and the numerical and narrative criteria established to protect those uses. Both 303d and the associated implementing regulations put the 303d list in the context of water quality standards and standards under the public review and comment, and your approval as well as EPA approval as part of each triennial review. Now Cam will go over North Carolina's assessment methodology that's based on our standards. Then I will come back and provide a little more general information.

Cam McNutt: As Kathy has already covered the part about the standards, I'm going to talk about the criteria that we use to assess water quality in these five basic uses of aquatic life, that's ecological, biological integrity, a recreation which is swimming, shellfish consumption in North Carolina, really talking about harvesting the oysters, fish consumption which the Water Quality Committee anyway heard a little bit about that yesterday related to mercury and of course, water

supply. What you did hear about that use today when reclassifying a water body for that particular use.

In any of these five categories we'll use either numeric or narrative criteria to assess the water quality and in some of them you can see we use both. As far as the data goes for assessing these some of them will only have one piece of information that we use for assessment and others we can use anywhere from 1-15 or even 20 different parameters to assess aquatic life or recreation. In order to do the assessment in these categories we have to use a lot of different data. As you heard from Jay Sauber in September he talked about the DWQ programs which are mostly up here from the Environmental Sciences Section. That is the bulk of the data that is generated from the Division of Water Quality but we also have data that comes from the coalitions as you heard from the Lower Neuse Basin Association folks earlier. We use their data in assessments as well as shellfish, beach monitoring data, data from Health and Human Services and universities. We have had data from local governments and utilities as well as federal government also. During any 5 year period which is our assessment period we're looking at anywhere from about 500,000 to just over a million different observations from these various data sources. So there is quite a bit of data used. Once the data are collected they're summarized by a location basically or sampling station. They're assigned to a water body which is what's happening right here or an AU which is an assessment unit which is a description of some length of water from point A to point B or size, say for a lake. After that assessment of uses determining whether the uses, those five are being met or not, based on any of these parameters, then we develop the integrated report which includes the 303d list as well as the 305b report which are all the other assessments. I had a slide for each of the five categories, kind of a simplified version of our methodology but basically the blue is good or these are supporting criteria, the red, not so good. Those are impaired criteria. This particular one is for the assessment of aquatic life. As I said a little while ago we can either have a benthic site which are instream aquatic insects basically, evaluate fish community or any number of parameters from chemistry data and in several places in the state we have all three of these in one spot. Aquatic life is assessed using both narrative and the numeric criteria. The water as I said earlier we can look at anywhere from one for benthos for example up to 15 or 20 different parameters to assess aquatic life. If the low, a good fair, you see we don't assess something that is impaired if it's below excellence. It has to be below this good-fair bio-classification which is not excellent, but it doesn't have to be excellent to still be considered to be meeting water quality uses for aquatic life. For chemistry data, like dissolved oxygen ph chlorophyll-a, we do allow for 10% exceedance of the standard before we're going to make an impairment decision on that. As an example, for dissolved oxygen, if we have a hundred samples in a five year period, if eleven of them are below the dissolved oxygen criteria, then that would be impaired. If nine of them are below then that would not be impaired. I will explain that a little more later. It's not as simple as just using the 10% criteria. A little bit more on the narrative standard for biological integrity, this is out of our rules. In North Carolina we use our benthos and fish community data to assess this narrative standard. Jay presented an overview of these programs at the September meeting, the benthos and fish community programs. The data that we use for this are widely used across the country and around the world and they are very good indicators. A direct indicator of aquatic life health in most of the waters in the state we can use these data. For recreation or swimming assessment, again here we're using both numeric and narrative criteria to assess this use. Here are the criteria for supporting here. We are basically looking at a geometric mean or some other maximum number not to be exceeded in order to be saying that we're meeting the recreation use.

We do the same thing with fecal coliform and interior entericocci although the interior entericocci does not have a maximum. These data are collected by both the Division of Water Quality and the Beach Monitoring Program. A difference about this assessment is if these criteria are exceeded in monthly samples that don't result in impairment. In order to make an impairment decision at these sites where these criteria are exceeded the samples have to have been collected at least five times within a 30 day period. The monthly data are used to target areas where we would do that more intensive sampling of five times in 30 days before we make an impairment decision. The narrative part is used currently only in the beach areas where you've seen advisories posted warning that there could be potential exposure to pathogens in swimming. If those signs are posted for greater than 61 days in the five year assessment period, then those would also be impaired as well. Most of these are associated also with data that indicates there's impairment also. But some of them are permanently posted around drainage pipes that drain directly to beaches. Water supply assessment, there are 4 or 5 different criteria in addition to aquatic life criteria that are assessed for waters that are classified water supply. This isn't done at all of our stations, only the water supply stations. Again we're using 10% exceedance of those standards. Nitrate/nitrite would be one of those that are different from an aquatic life standard. In water supply waters we are assessing both recreation and aquatic life when those data are available to do an assessment.

Shellfish harvesting is an example of a criteria that is only narrative and basically if a coastal water that's classified for shellfish harvesting is approved for shellfish harvesting by Shellfish Sanitation then it is supporting that use. If it is anything other than approved which I don't know if you've heard of the other classifications but it's basically conditionally approved or prohibited and it would be impaired for the shellfish harvesting use.

Fish Consumption – the Water Quality Committee heard a little bit about this yesterday. Basically if there's no consumption advisory then the water body would be supporting the fish consumption uses as you've have heard before. If not, I'll tell you now. There's statewide advisory or advice for mercury consumption and, therefore all the waters in North Carolina are impaired for that use. We do have other site specific advisories for different parameters; PCB, selenium and dioxide are included in those. Those are generally in smaller areas. They're not statewide like the mercury advisory is.

This is a little bit of a complicated slide. Like this one, you kind of keep in your head when you're thinking about where all these things get categorized. But I would warn you the next slide is way more complicated so this will look better then. When we did the water quality assessment we are not just looking to make a 303d list of the impaired water bodies. We're doing an assessment of all the uses so if we have excellent water quality we are assessing that as well. EPA only reviews the waters that are impaired and that we put into what we call Category 5. Those are waters that require a TMDL. There's also a set of waters that are not meeting uses that we put into Category 4 and those generally already have a TMDL so it's not required. Together these two waters that are in these two categories are what we call the impaired waters list. Waters that are categorized in Category 1 or 2 are supporting the uses. It can't have any impairment of any of the uses and all of them supporting. Category 3 is a little bit of a grey area but most of the waters that we put into Category 3 are waters that do not have any data to make an assessment on. That's about 70% of the mainstreams in North Carolina. We do not have data to make an assessment. There's another subset in Category 3 where the data are inconclusive to make an assessment and you will see that on the next slide. Here is the decision tree that is used to make the actual assessment for dissolved oxygen. Believe it or not this has been simplified for

presentation purposes. As you can see here this is where we evaluate the 10% exceedance at the very top. We have to have data, of course. If the dissolved oxygen levels are exceeded in less than 10% of the time it gets a supporting assessment meaning it's meeting the aquatic life uses. But more importantly you can see we make several other decisions before we come to an impairment decision. Any one of these will basically determine that we don't have the information to make a determination if the dissolved exceedances that we are seeing are actually causing impairment. Several of these have follow-up actions including more study to determine if the low dissolved oxygen is due to natural conditions. Once we make that determination we actually recategorize it in the next list as supporting because the exceedances were saying, "are due to natural conditions". We have several other things that we consider as well. We have a similar diagram like this for all of the parameters that we assess. Some of them are slightly simpler, some of them are a bit more complicated and they do change as our assessment methods change. Here's basically our two year cycle and again every two years we're going through this process. It's kind of continuous but we are using five years of data each time so there is a little bit of overlap between the assessment periods because of the five years that we do every two years. So we're basically adding two new years' worth of data and then dropping off of the back as well. We submit our 303d portion, that's Category 5, the waters that require TMDLs to EPA on April 1st of the even numbered years. After we have approval and we receive updated guidance from EPA as well as evaluating our standards and our methods, we will do a kind of review of the assessment methods that we have right now which are basically the same ones we've had since 2008 and 2010. We're using the same ones. During the odd number years which was just past we actually get the data, do the assessment and right now we are in internal review and we're planning to take out the 303d portion of list for public review early next month. Now I am back to Kathy.

Kathy Stecker: Real quickly a review of EPA's role in all of this. They do explicitly approve or disapprove the 303d list itself but not the assessment methodology. However, the Federal Register is full of numerous examples where EPA adds waters to states list that when they believe those waters do not attain standards. In other words, they believe the state has missed those waters. So then states have to issue permits and develop TMDLs consistent with EPA's additional listings. Delisting is kind of a reporting requirement. We began every two years with the most recently approved list and then say in 2012 we'll start with the approved 2010 list and report waters that can be delisted. Any delistings must be accompanied by good cause justification besides attainment of standards and that could be due to water quality improving or a change in the water quality standards themselves. Other good causes include an approved TMDL or other enforceable management strategy that is meant to achieve water quality standards. As Cam mentioned, when the draft list is made available for public review then we must consider and respond to all comments. In 2010 we had 27 commenters who submitted comments. Examples of the types of comments we typically receive are listed here. We get suggestions to add or remove waters, specific waters to or from the list. We get requests for clarification typically of our assessment methodology. We get information from people on possible sources of the impairments and we also get requests to conduct studies to find out what the sources of the impairments are. We do make revisions based on the comments received, most often for clarification or to correct errors. I'll conclude by saying all of what we talked about and in a lot more detail is available on our website including the assessment methodology, all of the 303d lists from 1998 to 2010, the public comments we received and our responses to

those comments. You can also see the entire statewide water quality assessment that Cam told you about from this link. We also have a Listserve that anyone can subscribe to and be notified of opportunities for participation in the 303d process and TMDLs and other related updates. Thank you.

Chairman Smith: Thank you Ms. Stecker and Mr. McNutt. Comments and questions? Thank you very much.

We have one addition to our agenda and that is a report on this State of the Environment Report. A couple of you asked for this on yesterday so I spoke to Asst. Secretary Smith and she suggested you.

Trina Ozer: I'm Trina Ozer and the policy analyst in the Office of the Secretary. The 2011 State of the Environment Report is a science based review of the state's Air, Water and Land Resources. The report fulfils the legislative requirement that the department presents an evaluation of the quality of the state's environment and that efforts were taken to protect the state's national resources. It also describes some emerging environmental issues that we're looking forward to. The report identifies environmental protection issues where they're located and what efforts are already underway or needed to address those problems. When it's available the report contains trend data for environmental indicators to give readers a look at where we've come from and what level we've improved. I'll give you a couple of highlights of the environmental indicators in the report. In the past, much of North Carolina had ozone levels exceeding the National Ambient Air Quality Standards, but with the cooperation of business and industry North Carolina's ozone levels have substantially declined since the 1970s. Fine particle pollution has also declined since the 2002 passage of the Clean Smokestack Act and additional reductions are expected as industries and motor vehicles face more stringent air quality standards. In addition to improving air quality, the majority of the state's lakes, streams and rivers have good water quality and support fisheries and fish habitats, provide drinking water and allow for recreational uses. However about 40% of the state's waters are impaired by pollutants like mercury, bacteria and sediment. In the area of water supply, Water Shortage Response Plans have been developed to improve the state's drought response. Groundwater data collection has increased. Aquifers have started to recover in the Central Coastal Plain and water supply models are being developed for most of the state's 17 major river basins. The state continues to make progress in cleaning up contaminated properties and in helping to provide alternative water supplies where drinking water wells have become contaminated. Although the rate at which the state has acquired land for conservation has declined since 2009. We continue to identify and protect key parcels focusing on parcels that are critical for water quality protection, wildlife habitat, recreation, agriculture and military activities. The report also talks about some emerging challenges for the department including changing air quality standards at the federal level, rapid population growth and development in certain parts of the state. Water supply and the allocation of water resources between competing users, the potential impacts of climate change and the completion of a legislatively mandated study on issues related to oil and gas expiration in the state focusing particularly on horizontal building and hydraulic fracturing to extract natural gas. Are there any questions about the 2011 report?

Dr. Peterson: Does it happen to include indoor air quality?

Trina Ozer: I don't have the whole report memorized but I do not remember that.

Sheila Holman: Actually the Division of Radiation Protection in Department of Health and Human Services is charged with that implementation so it's not covered within DENR's purview.

Chairman Smith: Other comments and questions? And this report is available on the DENR webpage?

Trina Ozer: It's on the website. If you go to the homepage there is actually a little picture of it and you can click right on it.

Chairman Smith: Good. Thank you very much. Appreciate you being available on such short notice. That completes our agenda. We now move into the reports by the committee chairman.

II. Status Reports by EMC Committee Chairmen

A. Water Quality Committee Dr. Charles H. Peterson

The Water Quality Committee had a handful of items. We dealt first with a request for approval of reclassification of the segment of the Roanoke River at the Bertie/Martin County line. That item will come to the EMC in two months time but we approved this to move forward. There was similarly the request that we heard and acted on today to approve the local governments' ordinances in concert with the Falls Lake new stormwater development rule and delegate authority for Hillsboro and for Creedmoor to the director once those particular rules at the county level and town level were finalized. We had an information item from Amy Chapman on the Neuse and Tar-Pamlico buffer rules. That among other things was a response to a Session Law that asked if there was a different way to achieve what those buffer rules do and to go through them systematically to address options. There are a couple of items which will come out of that which will come before the Commission. But we had it as an information item because it is still under review particularly at higher levels than the 6th floor in Archdale. We also had an update on our flexible mitigation rule and had the benefit although it was just the company, not the voice of John Dorney who had done this so often for us before and who had been one of the major movers on this. But Amy has that ball in her court and came and talked to us about that. We will hear more in the future. Then we had an information item on mercury and the TMDL for mercury and where we're moving on that from a water quality perspective that tied in as well to an analogous item on the Air Quality Committee agenda, the committee that followed. That constituted our meeting with I might add a very interest discussion of the mercury, the air transported, deposition and scope of that in space.

B. Air Quality Committee Marion Deerhake, Chairman

We had two concepts which are revisits to regulations that we adopted or rules that we adopted in the past year. Both of them had been forwarded to EPA and EPA came back with their interpretation of the statutes saying that we needed to come back to the drawing board and make some revisions. One is dealing with the revisions for New Source Review and Prevention of Significant Deterioration for nitrogen oxides significant level. That has to deal with the states action based on the perception or the opinion of the role of NOX npm prime formation or is it

PM prime formation. Then the other one deals with the volatile organic compound reasonable available control technology rules and the application of control technology guidelines in the state here. We did discuss the open burning action and that was before the EMC today as I mentioned earlier. Then we had two updates from Laura Booth. One was the update on the Ozone National Ambient Air Quality Standard in the nonattainment area of designation that the state has proposed for the Charlotte area, which is the only area expected to be in nonattainment for the ozone standard. We also received the good news that the Hickory area, the Lexington and Triad areas nonattainment status for PM2.5 is likely to be lifted. Then as Dr. Peterson mentioned we received the air quality portion of the mercury TMDL presentation. Then we also had discussion about the recent maximum achievable control technology standard promulgated in December by EPA for electric generating utilities and the air toxics submitted particularly mercury. I would just add and I didn't add this yesterday. I can do this now instead of an information item later. I did want the members to know that the 2010 Toxic Release Inventory Dataset has become available from EPA and you can go to EPA's website and look it up by state or by source. It's a very easy to use tool if you're interested in the air toxics. They are all toxics, I guess that are reported as being released from specific sources in the state.

C. NPDES Committee Dr. David Moreau, Chairman

The NPDES Committee did meet to consider a recommended decision by the ALJ in the case of the Rose Acre Farms, a very large poultry egg producing operation in Hyde County with approximately 3,000,000 hens. The issue was whether or not there was a discharge to the waters of the state from this facility. It is a dry litter animal feeding operation and the issues appeared to be surrounding whether or not there was an actual discharge from the operation to the waters of the state. What triggered this was actually a renewal of an NPDES permit and what triggered the objection from Rose Acre was the addition of several Best Management Practices that were attached to the NPDES permit renewal. There was an issue of the state as I recall the arguments were claiming that this was in fact a liquid waste operation because of the egg washing operation and the tie between the animal feeding operation and the eggs. Secondly the DWQ was arguing that there was a discharge because of the exhaust of ammonia feathers and other things from the hen houses that were particularly ammonia that was being deposited, and indirectly entering the waters of the state. The committee listened to the presentations for over an hour. There was a discussion of the issues in excess of an hour. The motion was made that we overturned the ALJ's decision on the grounds that there were material facts that were in dispute. The ALJ had issued a summary judgment and we concluded that there would be material facts in dispute. They should be addressed in an evidentiary hearing. We then voted on that and the final decision was 4 to 3 in favor of that motion. So it was remanded to the ALJ for an evidentiary hearing on those issues.

Chairman Smith: One point of correction. The final vote was unanimous 7 to 0. A previous motion was defeated 4 to 3. The remand for an evidentiary hearing the entire committee agreed on.

Dr. Moreau: Thank you for that correction. I clearly was focused on the first vote.

D. Renewable Energy Committee Dr. Charles H. Peterson, Reporting

Dr. Peterson reported for Mr. Phillips. The Renewal Energy meeting had one item on the agenda and that was an item from the North Carolina Solar Center and a presentation of summary of progress in wind energy, the sorts of issues that are still occurring, the developments within the state on land and over water, and some of the directions that are now being moved in. Thanks to the close work with the federal agency and Interior Department now named Boom and the state who has established a task force to look at finding the areas offshore in North Carolina to be listed as possible lease sales sites so as to stimulate the development of that industry off the beach in North Carolina. We also heard about issues on land in the east and the west and were updated with our knowledge of the process and what its impediments may be.

Chairman Smith: Comments by Commission members? Directors?

III. Concluding Remarks

Sheila Holman: Just two quick things. I just wanted to make one clarification to Ms. Deerhake's summary of the Air Quality Committee. PM2.5 areas have officially been redesignated so Hickory and the Lexington/Greensboro area are in attainment of the National standards. I just also wanted to congratulate Mr. Wakild on his being name as the Director of the Division of Water Quality. I certainly look forward to working with you. Thank you.

Mr. Morse: What's the status on the chlorophyll-a conference?

Chairman Smith: Mr. Wakild can tell us about that, this being his first opportunity to comment to us as a division director.

Chuck Wakild: Thank you. First I think we have finally got freed out of most of the state bureaucracy in order to move forward. We're at a point now where private vendors have had an opportunity to submit bids, and I think they're about to open or just have.

Alan Clark: We did put it out for bids to some private vendors. We had a chance to look through those and we didn't feel like any of those were satisfactory. So we're going to be working with North Carolina State University's program that has a capability of doing this for us. We're hoping to have this in May or June.

Chuck Wakild: Is that a target for holding the conference?

Alan Clark: Yes.

Chuck Wakild: Just to add on some of the discussion earlier coming from the Neuse River Group and the discussion that the Commission had, I think that will all be part of that discussion too. The agenda hasn't been quite set yet and we're going to evaluate requests that different groups have had for specific speakers, and that should be firming up fairly quickly, if we're looking at June or July to hold this conference. Or rather May/June.

Chairman Smith: Anything else Mr. Wakild?

Chuck Wakild: Other than to say thank you to you Mr. Chairman and other Commission members who were able to come to the gathering for Coleen last night. It was very nice and I think she appreciated it a lot. People had a good time so thank you all.

Chairman Smith: It was a nice thing. For those of you who organized it and those of you responsible for it, it was very well done.

I appreciate you all arranging your busy schedules to be here for a full day and we are now adjourned. (Hearing no further comments the meeting was adjourned at 4:00 pm.)

NOTE: Attachments are on file in the Division of Water Quality with the Official Minutes.

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Lois C. Thomas, Recording Clerk

By Commission Members
By Directors
By Counsel
By Chairman

Adjournment AG01-12-12