

NORTH CAROLINA
COUNTY OF WAKE

IN THE GENERAL COURT OF JUSTICE
SUPERIOR COURT DIVISION
13-CVS-11032

STATE OF NORTH CAROLINA *ex rel.*)
NORTH CAROLINA DEPARTMENT OF)
ENVIRONMENT AND NATURAL RESOURCES,)

Plaintiff,)

V.)

SIERRA CLUB, WATERKEEPER ALLIANCE,)
NEUSE RIVERKEEPER FOUNDATION,)
WINYAH RIVERS FOUNDATION, ROANOKE)
RIVER BASIN ASSOCIATION, and CAPE)
FEAR RIVER WATCH, INC.,)

Plaintiff-Intervenors,)

v.)

DUKE ENERGY CAROLINAS, LLC,)

Defendant.)

DEPOSITION OF
KENNETH MARK
RUDO, Ph.D.

and

NORTH CAROLINA
COUNTY OF MECKLENBURG

IN THE GENERAL COURT OF JUSTICE
SUPERIOR COURT DIVISION
13-CVS-14661

STATE OF NORTH CAROLINA *ex rel.*)
NORTH CAROLINA DEPARTMENT OF)
ENVIRONMENT AND NATURAL RESOURCES,)

Plaintiff,)

V.)

CATAWBA RIVERKEEPERS FOUNDATION,)
INC., APPALACHIAN VOICES, YADKIN)
RIVERKEEPER, MOUNTAINTRUE, DAN)
RIVER BASIN ASSOCIATION, ROANOKE)

RIVER BASIN ASSOCIATION, SOUTHERN)
ALLIANCE FOR CLEAN ENERGY, and)
WATERKEEPER ALLIANCE,)
)
Plaintiff-Intervenors,)
)
v.)
)
DUKE ENERGY CAROLINAS, LLC,)
)
Defendant.)

MONDAY, JULY 11, 2016

PINE CONFERENCE ROOM
NORTH CAROLINA DEPARTMENT OF
HEALTH AND HUMAN SERVICES

5505 SIX FORKS ROAD
RALEIGH, NORTH CAROLINA

9:57 A.M.

VOLUME 1

PAGES 1 THROUGH 220

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S T I P U L A T I O N S

PRIOR TO EXAMINATION OF THE WITNESS, COUNSEL
FOR THE PARTIES STIPULATED AND AGREED AS
FOLLOWS:

1. OBJECTIONS TO QUESTIONS AND MOTIONS TO STRIKE
ANSWERS NEED NOT BE MADE DURING THE TAKING OF THIS
DEPOSITION, BUT MAY BE MADE FOR THE FIRST TIME DURING THE
PROGRESS OF THE TRIAL OF THIS CASE OR ANY PRE-TRIAL
HEARING HELD BEFORE THE JUDGE FOR THE PURPOSE OF RULING
THEREON OR AT ANY OTHER HEARING OF SAID CASE AT WHICH
SAID DEPOSITION MIGHT BE USED, EXCEPT AN OBJECTION AS TO
THE FORM OF A QUESTION MUST BE MADE AT THE TIME SUCH
QUESTION IS ASKED OR OBJECTION IS WAIVED AS TO THE FORM
OF THE QUESTION;

2. THAT THE WITNESS DOES NOT WAIVE READING AND
SIGNING OF THE TRANSCRIPT;

3. THAT THE OBJECTION OF ONE COUNSEL MAY BE TAKEN
AS THE OBJECTION OF ANY OR ALL OTHER COUNSEL.

P R O C E E D I N G S

(WHEREUPON,

KENNETH MARK RUDO, Ph.D.

WAS CALLED AS A WITNESS, DULY SWORN, AND TESTIFIED AS
FOLLOWS:)

D I R E C T E X A M I N A T I O N 9:57 A.M.

BY MR. HOLLEMAN:

Q. Dr. Rudo, we met a few minutes ago. My name
is Frank Holleman, and I am an attorney at the Southern
Environmental Law Center. And we represent various
conservation groups in this litigation. I wanted to ask
you, first, have you ever given a deposition before?

A. Yes, sir.

Q. Well, then you know all of the ropes, but let
me just for the record say a few things. I am going to
be asking you a series of questions. Sometimes my voice
drops. If you can't hear me or if I cough over myself,
or if you can't -- if you don't understand my question,
please let me know and I will try to clarify it and make
it so that you can answer it.

Now, although we are in a conference room here
at your office, you realize, I believe, that the
testimony today is given as though you were in a
courtroom and might be used in court at some future time?

A. Yes, sir.

1 Q. Now, Dr. Rudo, where do you live?

2 A. I live in Chapel Hill, North Carolina.

3 Q. And what is your position today?

4 A. I am sitting down in the conference room. I
5 am an Environmental Public Health Toxicologist for the
6 North Carolina Division of Public Health. And by the
7 way, if my voice -- if I have got to speak up or slow
8 down, please let me know.

9 Q. Could you tell us your educational background,
10 please, sir.

11 A. I got my Bachelor's at the University of
12 Maryland at College Park. I got my Master's in
13 Environmental Toxicology also at the University of
14 Maryland. And I got a Ph.D. in Environmental Toxicology
15 at North Carolina State.

16 Q. And could you tell us your employment history,
17 please, sir.

18 A. How far back?

19 Q. Well, let's start after you got your Ph.D.
20 Where were you working then?

21 A. Before that or after?

22 Q. At the -- well, let's -- why don't we start
23 from college. It might be the simplest thing. Just
24 after college, what did you do?

25 A. After college I ---

1 Q. When did you graduate from college?

2 A. 1988, I believe.

3 Q. Okay.

4 A. And so this is the only job ---

5 Q. Take us from there, if you could.

6 A. This job, right here. I have been in it since
7 then, about 27 years and three months.

8 Q. And is your title the same now as it has
9 always been?

10 A. I would say so.

11 Q. Are there other people at the department who
12 hold the same position you do?

13 A. At this point in time, I would probably have
14 to say no. There have been -- when I first came here,
15 there was a toxicologist who hired me. He had this same
16 position. And for about 14 years, maybe, there was also
17 another toxicologist that worked with me.

18 Q. So if my math is correct, does that mean since
19 2002 you have been the sole toxicologist for the
20 Department of Public Health?

21 A. In terms of this position. In the last six,
22 seven years, I have worked with another toxicologist.
23 But she was on an ATSDR grant. But we were sort of
24 working together in a manner similar to the folks before
25 me.

1 Q. And what was her name?

2 A. Sandy Mort.

3 Q. Now, did she work at HHS or at DEQ, do you
4 remember?

5 A. Well, she works at DEQ now. She left at the
6 beginning of the year, something like that. Before that,
7 she worked in our branch.

8 Q. At HHS?

9 A. Yes.

10 Q. Now, beginning -- since January 1, 2015, has
11 anyone else been a toxicologist in the Department other
12 than you and Ms. Mort?

13 A. There has been a Master's toxicologist,
14 Kennedy Holt, that has worked with me. I am not exactly
15 sure of when he first started, whether it was in January
16 or sometime towards maybe March or April of last year,
17 maybe even a little later, but -- and he is still a
18 Master's in toxicology. And he is doing various other
19 jobs in our branch right now, but he still helps me out.

20 Q. Who do you report to?

21 A. I report to Dr. Mina Shehee. She is our
22 Branch Chief.

23 Q. And how long have you reported to her?

24 A. I am not sure how long she has been our Branch
25 Chief. Maybe six, seven years.

1 Q. And throughout your tenure, have you reported
2 to whomever the Branch Chief may be?

3 A. No. I think for my first maybe 15, 17 years,
4 I had a supervisor named Bill Pate. And I reported to
5 him. And he reported to the Branch Chief. But because
6 of the nature of the work that we do, I pretty much talk
7 to the Branch Chief all the time.

8 Q. But since January 1, 2014, you have reported
9 to Dr. Shehee, is that correct?

10 A. Yes.

11 Q. And could you tell us -- generally describe
12 the work you do. What are the duties of your position?

13 A. It is really sort of -- it is hard to sort of
14 sum it up, but I think the best way to say it is I
15 perform human health risk assessments for people that are
16 exposed, primarily environmentally -- whether it is
17 occupationally or residentially or just being outside --
18 to impacts from chemicals in water, soil, air.

19 Q. Is there anyone else in -- let's start with
20 the Department -- HHS who does this role other than you?

21 A. At the moment, pretty much it is me and this
22 Department right now.

23 Q. And how long has that been true?

24 A. On and off since I came here. You know, like
25 I said before, sometimes I had somebody working with me.

1 I am not anybody's boss. I have never been anybody's
2 boss, I don't want to ever be anybody's boss. So whoever
3 worked with me worked as a co-worker.

4 Q. I want to ask you some questions about the
5 development of the Health Screening Level for hexavalent
6 chromium.

7 A. Yes, sir.

8 Q. When did that begin, if you recall,
9 approximately? Or when did that effort begin?

10 A. I have a time line somewhere, but I will try
11 to do it from memory. I would say sometime maybe July or
12 August of 2014. DENR -- they were DENR then, they are
13 DEQ now -- their regional people sent me several well
14 water sample results, private well results -- I think it
15 was from Salisbury from near the plant there -- because
16 they had found measurable levels -- detectable levels of
17 hexavalent chromium and vanadium, two chemicals which we
18 really had not had a lot of -- a lot of -- hadn't worked
19 on very much.

20 And we did not have any kind of drinking water
21 standard. We didn't have an MCL. We didn't have a
22 Groundwater Standard or an IMAC for hexavalent chromium
23 by itself. We did have an IMAC for vanadium, but they
24 requested that we do a health risk evaluation for those
25 wells. And so I think that is when this sort of began.

1 Q. And when you say "they," do you mean someone
2 at DENR?

3 A. Yes.

4 Q. Do you remember who it was?

5 A. No, I don't.

6 Q. And could you describe for us what happened
7 from there?

8 A. All right, here we go. We started doing some
9 work on both vanadium and for hexavalent chromium. And
10 when we let DENR know that we were probably going to need
11 to calculate a Recommended Value -- Health Screening
12 Value, Health Protective Value for hexavalent chromium,
13 we told Dr. Shehee that we needed to do this. And we
14 began work on it.

15 And she contacted her counterparts in DENR and
16 asked them -- and told them what we were going to do.
17 And they sort of, you know -- let me look for a nice word
18 -- requested that we not do that.

19 Q. Okay. And when you say, "We were going to do
20 a health risk assessment for hexavalent chromium," are
21 you referring to the Department or more than one person,
22 or who are you referring to?

23 A. It would have been Sandy Mort and myself.

24 Q. And who at DEQ requested that you not do it?

25 A. Well, what I was told was that when we relayed

1 our intent to do this -- and it is actually a very normal
2 thing for us to do for a chemical that may not have an
3 IMAC, that may not have a Groundwater Standard or MCL.
4 And we have actually never, to my knowledge, had any
5 response from DENR that would have not wanted us to do
6 that.

7 MS. LeVEAUX: Objection.

8 BY MR. HOLLEMAN:

9 Q. Well, continue, please.

10 A. Yes. So this was sort of, I think, the first
11 time that we had ever seen an objection to our request or
12 desire to promulgate a standard.

13 Q. And who objected, do you know?

14 A. What I was told was that the objection came
15 from Tom Reeder.

16 MS. LeVEAUX: Objection.

17 BY MR. HOLLEMAN:

18 Q. And who told you that?

19 A. That I don't remember. It was sort of he was,
20 I guess, the Supervisor of the group that we were working
21 with over there, I think -- the Division of Water
22 Quality. I don't know if they are still entitled that.

23 Q. Were you told about his objection by someone
24 from DENR or by someone from HHS?

25 MS. LeVEAUX: Objection.

1 THE WITNESS: I am sorry, I will slow down.
2 I think it was Dr. Shehee. There may have been some --
3 some e-mail traffic to that purpose, also.

4 BY MR. HOLLEMAN:

5 Q. Did she tell you why he objected, or what his
6 reason was?

7 MR. LONG: Objection.

8 MS. LeVEAUX: Objection.

9 THE WITNESS: She probably did, but I don't
10 remember what the -- the specific reason was.

11 BY MR. HOLLEMAN:

12 Q. Do you remember any general reason or what the
13 nature of the general objection was?

14 MR. LONG: Objection.

15 MS. LeVEAUX: Objection.

16 THE WITNESS: I think it was probably
17 because the number we were looking at calculating was a
18 number that was significantly lower than the Groundwater
19 Standard for Total Chromium that existed at that time.

20 BY MR. HOLLEMAN:

21 Q. And why would that -- why was that a concern,
22 if you know?

23 MS. LeVEAUX: Objection.

24 MR. LONG: Objection.

25 THE WITNESS: It would have been a concern

1 because it was adjacent to a Duke facility, and there was
2 probably concern over how it would be looked at by Duke
3 if we did that.

4 BY MR. HOLLEMAN:

5 Q. And why would Duke be concerned ---

6 MS. LeVEAUX: Objection.

7 MR. LONG: Objection.

8 BY MR. HOLLEMAN:

9 Q. --- if you know.

10 A. Well, we were dealing -- we had already been
11 dealing with the coal ash issue because of the spill in
12 the Dan River earlier in 2014. So my guess is that, you
13 know, they felt that it might have resulted in a standard
14 that might have pointed fingers at them, in terms of
15 their being responsible.

16 But, you know, our view of this is that we are
17 not looking -- we don't look at who is responsible for
18 the contamination in general. We are just dealing with
19 the fact that there is an increased health risk to
20 somebody's drinking water, we want to make sure we are
21 trying to protect them.

22 Q. Now, after you learned of the objection, what
23 happened next?

24 A. We were told not to calculate a standard for
25 hexavalent chromium at that time.

1 Q. And who told you that?

2 A. Dr. Shehee.

3 Q. What was -- when did the issue of hexavalent
4 chromium come up next?

5 A. I would say it would probably have been in
6 either December of 2014 or January of 2015.

7 Q. And what caused the issue to come back up?

8 A. I think it might have been the passage of the
9 CAMA law, which was requesting or requiring Health Risk
10 Evaluations for wells within a certain proximity to coal
11 ash ponds.

12 Q. And who -- who brought it up to you next, or
13 did you bring it up? In other words, how did it arise?

14 A. I would say the concern and the desire to
15 actually start looking at this again, in terms of our
16 group, would have come from either Dr. Shehee or Dr.
17 Davies.

18 Q. And so what did you do next?

19 A. Well, we talked about -- you know, we had
20 concerns, obviously. It was -- if we were going to do
21 this, we wanted to make sure that, number one, what we
22 calculated followed the intent of the CAMA Law. We
23 wanted to make sure that we were following the
24 legislation.

25 And we had a meeting with Chris Hoke, and I

1 think Danny Staley might have been there, and other folks
2 above me, so they could interpret for us what we were to
3 do according to the law. And at that point, we were told
4 to move forward with -- and I am not sure when the
5 meeting was, but there was this meeting that sort of
6 crystalized for us what we were to do and the road we
7 were to take.

8 Q. When you say "we," who are you referring to?

9 A. Our Branch.

10 Q. And your Branch -- who are the people you are
11 speaking of when you say "our Branch"?

12 A. It would have been Dr. Shehee, Sandy Mort and
13 myself. And then when Kennedy started working with us,
14 it would have been Kennedy.

15 Q. Okay. Go ahead.

16 A. And I am not sure, time line wise, if this
17 occurred before or after a request that we received from
18 DENR -- from Jay Zimmerman, who was, I think, the
19 Division Director for Water Quality. And he sent a
20 letter to us requesting our assistance doing Health Risk
21 Evaluations for the wells that were falling under the
22 CAMA Law. So we actually were invited and asked for our
23 help by DENR, which is not unusual, because we work very
24 closely with them.

25 Q. And so what did you and your colleagues in the

1 branch do?

2 A. Well, we set about starting to review the
3 literature, starting to read the papers that would be
4 associated with the end points -- the toxicity end point
5 that we were going to base the recommended Health
6 Protective Level on. And we calculated a level and
7 proposed it. And at that point, everything just got
8 really -- I would say things got a little unusual, even
9 for us.

10 Q. And how did they get unusual?

11 A. In terms of -- even though we were invited to
12 do this by DENR, once we calculated a value that we felt
13 was consistent with the literature, it was consistent
14 with the approaches taken by California, I believe New
15 Jersey, and EPA, we got a lot of resistance all of a
16 sudden from DENR, led by Tom Reeder, specifically, who
17 did not -- once again, did not want us to calculate a
18 specific Chromium VI -- hexavalent chromium, Health
19 Protective Level.

20 Q. And did Mr. Reeder tell you why he didn't want
21 you to do it?

22 MS. LeVEAUX: Objection.

23 THE WITNESS: I think there were a lot of
24 reasons they brought up why they didn't want to do it. I
25 think one of them was they felt they already had a

1 standard -- a Groundwater Standard. But it was for total
2 chromium. And we felt that, you know, this was a dated
3 standard, as was the MCL for total chromium. And we also
4 felt that because we were dealing with hexavalent
5 chromium toxicity specifically, that we needed to have a
6 Health Protective Value put forward specifically for that
7 chemical.

8 That was one reason that they -- they -- oh,
9 another reason they gave was they felt that this would
10 sort of impact public water issues, because they told us
11 -- and we already knew, but they did tell us that they
12 had data that said there was hexavalent chromium in many
13 public water supplies in North Carolina. So they were
14 concerned about if we promulgate something for the
15 private wells adjacent to the sites covered by the CAMA
16 rule, that we would also, I guess, ethically and morally,
17 be required to also try to protect people where this was
18 found in public water supplies.

19 BY MR. HOLLEMAN:

20 Q. Now, why were they concerned about that?

21 MS. LeVEAUX: Objection.

22 BY MR. HOLLEMAN:

23 Q. Was that not something one would want to
24 do ---

25 MS. LeVEAUX: Objection.

1 BY MR. HOLLEMAN:

2 Q. --- protect people drinking public water,
3 also?

4 MS. LeVEAUX: Objection.

5 THE WITNESS: I think the way to answer that
6 question is to -- I think you have to understand how the
7 Public Water Supply Section, and then their Supervisor,
8 Tom Reeder, would look -- looks at public water supplies.
9 I think that is the only way I really think I can answer
10 the question.

11 Standards for public water supplies are based
12 on something called Maximum Contaminate Levels that are
13 set by EPA, I guess under the Clean Water Act. And one
14 of the issues with MCLs are that they are not specific
15 Health Protective Levels. They are not -- they are not a
16 Health Protective number specifically. They start with
17 the basis of Health Protective numbers. But then they
18 are modified based on issues of technological
19 feasibility, the ability of water plants to control cost
20 issues.

21 So MCLs are not Health Protective Standards.
22 And we were proposing a Health Protective Standard for
23 hexavalent chromium. So I think that that would have
24 been, you know, part of the issue for Public Water
25 Supplies.

1 BY MR. HOLLEMAN:

2 Q. At this time were you proposing .07 parts per
3 billion as the standard or the screening level for
4 hexavalent chromium?

5 A. Yes, sir.

6 Q. What other -- did they give you any other
7 reasons for their concerns or objections?

8 MS. LeVEAUX: Objection.

9 THE WITNESS: I don't know. We would
10 probably have to look at the notes that people took from
11 the meetings. We had several meetings, but two very
12 large meetings, because we were endeavoring to reach
13 consensus on what we were doing and moving forward to
14 actually do the Health Risk Evaluations.

15 But I think their primary concern was the
16 Public Water issues. And, you know, the questions were
17 asked of us if there were public water wells that were
18 withing the distances covered by CAMA, would we do a
19 Health Risk Evaluation for those -- those wells, in
20 addition to the private wells. And our answer was, "Yes,
21 we would have to do that."

22 The argument that Tom Reeder gave to us was
23 that there wasn't an actual Standard -- an MCL -- for
24 hexavalent chromium. So he felt that the water should be
25 considered safe -- public water -- if there wasn't a

1 Standard. So he was concerned that if we promulgated a
2 Health Screening Level -- protective level for hexavalent
3 chromium, that we would have to consider people that had
4 hexavalent chromium above .07 as at an increased health
5 risk.

6 BY MR. HOLLEMAN:

7 Q. When you calculated your .07 level, did you
8 consult with the Centers for Disease Control?

9 A. That was one of the things we were asked to
10 do, yes.

11 Q. And what was the response from the Centers for
12 Disease Control?

13 MR. LONG: Objection.

14 THE WITNESS: They looked at the number that
15 we were using -- the basis for the number, I guess the
16 calculation itself, and they were -- they agreed that we
17 had approached it correctly.

18 BY MR. HOLLEMAN:

19 Q. In the meetings you were describing where DENR
20 expressed objections, was there any mention of the
21 reaction of Duke Energy to the Health Screening Level?

22 MS. LeVEAUX: Objection.

23 THE WITNESS: I don't recall if there was or
24 not. I think the concern that they had was more in line
25 of, if we were taking people off the water, you know,

1 what would we do to try to help -- you know, help these
2 folks get a potable water supply? And one of the
3 suggestions that came up in the meetings was to ask Duke
4 if they would take the lead on doing that.

5 BY MR. HOLLEMAN:

6 Q. Now, what was the result of those meetings?

7 A. The purpose -- let's start with the purpose.

8 Q. Okay.

9 A. And then we can talk about the meetings
10 themselves. The purpose was -- as in many things that we
11 do when we were working with DENR, was to come to a
12 consensus agreement on the numbers we were going to use
13 not only for hexavalent chromium but for all the other
14 chemicals that we were going to be covering under the
15 CAMA Law for the residents that lived adjacent to these
16 sites. We wanted to reach consensus on issues related to
17 risk communication with these folks and other parties.
18 We wanted to reach consensus on information that we would
19 give out to the residents as options for other potable
20 water sources. We wanted to reach consensus on the
21 specific language that we would use.

22 And this is where things got really -- you
23 know, a little argumentative -- on what we would tell
24 them, and in what form we would tell them, and the
25 wording on the forms that we would send out to residents.

1 So the idea was to reach consensus on all of these
2 issues. And when we work with DENR, that is always our
3 desire. We have written working relationships with them
4 -- different Divisions over there.

5 And oftentimes -- and this is -- you know,
6 there have been times where we have worked with DENR and
7 even Public Water. An example is an issue that came up
8 in 2013 with Tom Reeder, the first time we worked with
9 him, called Neuse Crossing, where we were not able to
10 come to a consensus, where there was disagreement that
11 had to be settled at the top of our two Departments. And
12 it was really the first time ever, I think, that it
13 happened in maybe 20 years.

14 But in this case, we wanted to reach
15 consensus. And a lot of times, in these kind of things,
16 there is a lot of screaming, yelling, ranting and raving
17 on both sides to try and get to a point where everybody
18 says, "Okay, we can go ahead and do this." In this
19 situation, we eventually reached consensus. I would call
20 it a grudging consensus, because both sides had to accept
21 things that they had difficulty accepting.

22 But the problem, I think, that occurred here
23 was that the way the consensus was reached was
24 problematic, because we were several times -- probably
25 two or three times, we thought we had reached agreement.

1 And we moved ahead -- well, we had reached an agreement,
2 I will say. And then we moved ahead with sending Health
3 Risk Evaluations out to the residents based on the
4 sampling, only to find out that a day or two later, or
5 sometimes even that same day, that DENR scuttled the
6 consensus that we reached and had more objections. There
7 were a couple of times we actually sent out Health Risk
8 Evaluations, only to have to pull them back because of,
9 essentially, Tom Reeder backing away from agreements that
10 he had made with us.

11 Q. Let me go back first to the meetings. You
12 mentioned notes. Who took -- did anyone take -- who took
13 notes at the meetings?

14 A. I would say a lot of people took notes. I am
15 not -- I am not a big note taker at meetings. Sometimes
16 I will take notes after a meeting to sum things up, but I
17 rarely even do that. The only time I did that
18 significantly was, as part of this process, was I was
19 asked to go to the Governor's office to meet with him
20 over there. And I did take some notes after the meeting
21 for that.

22 But I would say folks in our group took
23 meeting notes, folks from DENR took meeting notes. So I
24 think there is a lot of documentation. There were two
25 major meetings. One was in the beginning of February,

1 and one was at the beginning of March.

2 Q. Who -- do you remember who was in each of the
3 meetings?

4 A. There were a lot of people from both groups in
5 these meetings, probably maybe 20 people present for each
6 of the meetings.

7 Q. Could you tell us who you remember from DENR?

8 A. The head of the Public Water Supply section
9 was there. I am not sure -- her last name has changed
10 several times, so I am not sure what her last name she is
11 using right now is. But she was there.

12 Q. What was her name at one point?

13 A. Goodrow. And her assistant -- I think she had
14 one or two assistants there. I think Mr. Midget, I
15 think, was one of her assistants. Reeder was there, I
16 think the folks that we ended up working with and
17 eventually sending out our Health Risk Evaluations to,
18 and they would send it out to the residents with their
19 own cover letter -- they were there. I think Debra Watts
20 and Eric Smith.

21 Jay Zimmerman was there. A woman named Connie
22 Brower was there, and probably their PR folks. But I --
23 I am not sure.

24 Q. And who from HHS?

25 A. I don't recall. I think Dr. Davies may or may

1 not have been at either one or both of the meetings,
2 Sandy Mort, Dr. Shehee and myself. I am not sure if Dr.
3 Langley was there or not.

4 Q. What about Mr. -- or Dr. Staley?

5 A. I am not sure if Danny Staley or Chris Hoke
6 were there. I don't recall.

7 Q. Was there anyone there from any agency or
8 organization other than HHS and DENR?

9 A. I don't recall if they were or not.

10 Q. Now, you have mentioned some agreements that
11 were reached and then didn't carry through. What were
12 those consensus agreements?

13 A. Well, primarily it was, initially, the
14 acceptance by DENR of the hexavalent chromium Health
15 Protective Value we were proposing to use. That was the
16 initial barrier. And I am not sure if this occurred in
17 the February meeting or the March meeting, but we had --
18 there were concerns about risk communication, especially
19 from Reeder, where it was significant. He wanted to make
20 sure that we were standing behind what we were going to
21 do, which meant to us -- you know, we -- when we tell
22 people or recommend to people or give people a Health
23 Risk Evaluation of their water, and if it is bad news,
24 that there is an increase risk and maybe a recommendation
25 to not drink their water, there was concern on their

1 department that we would follow-up and work with these
2 residents.

3 And that is something that we do as a group.
4 That is one of the things, i think, that highlights the
5 kind of work that we do, is that we are very, very
6 aggressive in reaching out to people that have problems
7 with their water, talking with them, explaining health
8 risks that might exist -- the chemicals, you know,
9 explaining, you know, the Standards that may or may not
10 exist, and helping them to not only understand the risk
11 from their water and the chemicals, but to also help them
12 in trying to fix the situation to get a potable water
13 source, either temporary or permanent.

14 And this is sort of, I guess, the backbone of
15 what we do for Health Risk Assessments in our Branch. I
16 mean, that is what makes us -- sets us apart, I think,
17 from other toxicologists in the country, other
18 toxicologists that may exist in state government, is that
19 we are actively at the field level working with people
20 who have problems with their drinking water.

21 Q. So, as I understand it, perhaps the first
22 consensus was you would use .07 as a Health Screening
23 Level, and that HHS would stand behind that and assist
24 the people who received the notices?

25 A. Yes.

1 Q. Was that the consensus?

2 MS. LeVEAUX: Objection.

3 BY MR. HOLLEMAN:

4 Q. And what happened to that consensus?

5 A. Well, that one was -- I would say that one was
6 sort of accepted, in terms of DENR's viewpoint, with the
7 remaining concern that they had of how we would apply it
8 to public water wells within the distance that was
9 required by the CAMA Law. And I think our compromise to
10 that was we would do a Health Risk Evaluation, but we
11 would send it to Public Water, and then let them go
12 through their procedures in terms of notifying either the
13 residents or the operator of the public water system -- I
14 think Aqua had several systems in there -- so they could
15 take the steps within their approach to make sure that
16 they were protecting residents. Go ahead.

17 Q. I was going to ask you, and you may have
18 answered it completely, but just in case, what were the
19 public water systems that fell within the CAMA testing?
20 You mentioned Aqua. Were there any others?

21 A. I am not sure if there were any others besides
22 Aqua. I think there might have been nine or ten public
23 water wells that we were dealing with.

24 Q. And do you know which communities those wells
25 were serving?

1 A. Not right off the top of my head. We have the
2 data upstairs.

3 Q. And do you know what happened with respect to
4 those systems?

5 A. I know that we did get phone calls from
6 residents that were on those systems asking for
7 additional information/explanations. But I am not sure,
8 because that was sort of taken out of our hands by DENR
9 as part of our agreement, that they would deal with
10 issues of potable water and things like that.

11 Q. So did you send -- did "you," that is, HHS or
12 your group -- did you all send a written notice or
13 written document of some kind to DENR about those public
14 well water supplies?

15 A. Yes, sir.

16 Q. And tell me, what did you send them?

17 A. It was the same form that we would have used
18 for the private wells.

19 Q. And it was addressed to whom?

20 A. The notice that the -- the address or the
21 owner would have been the public water system.

22 Q. Which would have been Aqua, in the Aqua
23 instances?

24 A. I believe so.

25 Q. And then that went to DENR. And do you know

1 what DENR did with it?

2 A. No. My assumption is that it would go to
3 Public Water, as per our agreement, and they would take
4 the steps to protect those folks.

5 Q. Did the Aqua customers who called you -- did
6 they indicate whether they had received any written
7 notification, or what led them to call you?

8 A. I think they had received some type of
9 notification. The calls that we got were more of the
10 nature of an explanation of the risk.

11 Q. Now, I believe -- do you remember the levels
12 in the Aqua systems?

13 A. No, sir.

14 Q. Now, going back again, I believe you said
15 there were some consensus agreements that then were
16 objected to.

17 A. Yes, sir.

18 Q. And what were the ones that were objected to?
19 What were the aspects of the consensus agreements?

20 A. Well, I think one of the meetings ended when
21 Reeder, who was sitting right across from me at that
22 meeting, we had debated what we were going to do in terms
23 of sending out the Health Risk Evaluations, the language
24 that we were going to be using, the Standards and the
25 Protective Numbers we would be using. And at -- and I am

1 not sure whether this was the February or the March. I
2 think it was the March meeting.

3 He essentially asked me a question about would
4 I guarantee to him that we would reach out to the
5 residents and make sure we were communicating the risks
6 and helping them, if DENR agreed to what we were
7 proposing to them to do. And my response was that we
8 would. And he ended his presence at the meeting by, in
9 effect, turning to his folks and going, "Okay, you know,
10 do what they want to do, we are in agreement."

11 And that was -- and we were ready to move
12 forward based on him saying, "Okay, we are good." And
13 literally, a day or two later, he changed -- he threw up
14 a whole new set of objections and stopped the process
15 right in its tracks. And we essentially spent several
16 days in March scrambling to try to get back to consensus
17 again.

18 Q. What were the new objections he raised?

19 A. They wanted language on the Health Risk
20 Evaluation forms that, from our standpoint, and what we
21 had done for over 30 years in protecting private wells,
22 we felt we couldn't do that. They wanted language put on
23 there that stated, in essence, we were overreacting in
24 telling people not to drink their water.

25 He wanted us to say on the forms, "Well, there

1 is risk. You shouldn't drink the water, but it is not
2 exceeding any Public Water Standards or any EPA
3 Standards. So this is the maximum risk, and it is" --
4 you know, it was almost like saying, "Don't drink the
5 water, but don't worry about it," which was -- that was
6 something we had never been asked to do before.

7 And up to that point, my name was on the forms
8 as the person to contact, which is something that I
9 always want to do, because I want people to call me if
10 they have questions. And once they insisted on this
11 language in there, and Sandy and I objected to that for
12 many, many reasons -- but ethical reasons more than
13 anything -- they -- they insisted.

14 And our Department, I guess, wanting to make
15 sure we had consensus, agreed to do that. And I said,
16 "Well, at this point, you have got to take my name off of
17 this. You know, I can't stand behind that. That is just
18 -- it is just not right. It is going to confuse people.
19 People are not going to really know whether they should
20 drink the water or not." I mean, it is crazy stuff. It
21 just didn't make any sense.

22 But once again, it reflected their concern
23 with the fact that Public Water issues were things that
24 they were still concerned about. And because they were
25 concerned about those, they sort of took that to say,

1 "Well, we want to tell everybody that Federal Standards,
2 it doesn't exceed them. So this is sort of an
3 overreaction." And that was just -- and it put us in a
4 position -- and this occurred on two occasions. The
5 first time this occurred, I said, "Take my name off of
6 this, I cannot -- you know, if we have got to send it
7 out, we have got to send it out. But my name is not
8 going to be on this."

9 And we are going to now have to make sure that
10 we literally talk to everybody. We were talking about
11 300 -- 400 families, maybe more. And we were going to
12 have to make sure we talked to them, explained the risk
13 so that they weren't confused by this language that was,
14 in essence, saying two different things.

15 So that was the first -- first time that
16 happened. And we actually sent out, I believe, some
17 Health Risk Evaluations with that language. And within a
18 day, we had -- we were told to pull it back because they
19 -- they wanted to make more changes.

20 Q. Now, you said that you had ethical concerns.
21 Could you explain what the ethical concerns were?

22 A. To my Department?

23 Q. Yes. And to you, yes. Could you explain,
24 please, what ---

25 A. Yes. I mean, we did it both in writing and in

1 meetings with our supervisors, why this was of concern.
2 Our Department agreed that it was a concern. They didn't
3 really want to do it, but I think they felt -- once
4 again, they wanted to make sure that -- I mean, because
5 of the hold up from Reeder and his folks, we were now
6 sitting -- the concern we had was we were sitting on
7 sample results for residents that had been -- we are now
8 -- we are now a week into March, maybe two weeks into
9 March, and we are sitting on sample results from early
10 February and mid-February.

11 So we have sample results that are of concern
12 to people. And because we are still trying to work it
13 out, we are not able -- we are sitting on them, while
14 people are at risk. And we are not able to tell them
15 that they are at risk. And that was -- that was a
16 concern also. We needed to get to these folks and start
17 working to protect them.

18 Q. Now, could you explain the nature of your
19 ethical concerns about the language that you referred to
20 earlier?

21 A. I think it is -- it is what I have already
22 said. It is that, you know, you want -- we always try
23 to, in writing -- let me take a step back. When you tell
24 people that something is wrong with their water, it is --
25 you know, people take their drinking water for granted.

1 They assume that, you know, you are going to pick up your
2 bottle or use your tap, and the water is going to be --
3 it is good water. It is water. Everything is okay. We
4 understand, and we have always understood as a Health
5 Risk Assessment group, that -- and John and I have talked
6 about this on many occasions -- that when you tell
7 somebody something is wrong with their water, it is a
8 very serious matter. It is a quality of life, stunning
9 thing to tell somebody.

10 If anybody went home, in this room today, and
11 you walked to your door and there was this little notice
12 on your door saying that your water was contaminated, it
13 would just change -- it changes everything. It changes
14 how you look at your day; it changes how you look at
15 water, whether it is public water or your own private
16 well. And it affects how you feel.

17 And that is part of the reason we were created
18 as a group, to make sure we reached out to people and
19 took the alarm -- took the dread of this situation and
20 removed it for people, and put it in a framework that
21 they would understand what is in their water, they would
22 understand what the risk is, they would be less afraid of
23 the issue because now they understood it, because they
24 had somebody to explain it to them, which is what we do.

25 And they also had somebody that was going to

1 stand with them, that was going to work to protect them,
2 fight to protect them, go talk to whoever was necessary
3 to help them get a good water supply, whether it was a
4 responsible party, whether it was a City Council, County
5 Commissioners, the legislature or whoever. So that is
6 what we do to remove the alarm, remove the dread.

7 And in order to do that -- and this goes, now,
8 to the answer of the question: you want to have a form
9 that you are giving people -- the notice, that is very
10 straightforward, very layman friendly. They look at it
11 and they understand. It says, "It is okay to drink, it
12 is not okay to drink. You may want to give us a call and
13 we will help you with it," and that is what we have
14 always done.

15 But we have never sent out a mixed signal with
16 the Health Risk Evaluations that we send. People look at
17 them and they understand it. This was a -- the mother of
18 mixed signals. I mean, it was a mixed signal to me. If
19 I got it, I would look at it and go, "Well, I don't
20 know." And I mean, it was so bad that when Dr. Davies
21 instructed me to start calling everybody, which was a
22 very arduous thing, to try and call 400 people, a lot of
23 the people weren't sure what to do because of the
24 language.

25 And that was -- that was -- it was really

1 difficult. It was tough. And it wasn't necessary. But
2 Reeder and his folks felt to protect, I guess, the
3 sanctity of Public Water -- "We don't want to -- you
4 know, we want to establish that Public Water Standards
5 are the basis for drinking water for everybody" -- and
6 they are not. But they wanted to put that language on
7 there.

8 So, initially, they put the language -- they
9 wanted to put it at the bottom of the form. And even
10 worse, it was at the bottom, and it was in really tiny
11 letters. So a lot of people might have missed it or, you
12 know -- and then the second time it happened was worse.
13 Let me think.

14 The second time it happened was the end of
15 March, around April Fool's Day. And we had, I think, 118
16 Health Risk Evaluations that we were getting ready to
17 send out. And I was -- I was exhausted. And I was going
18 to take some -- a week or two off. And so I finished up
19 the 118 Health Risk Evaluations. Kennedy and I reviewed
20 them. We were getting ready -- they were going to send
21 them over to Eric Smith at DENR to put cover letter on
22 and send out to the residents.

23 So I left thinking, "Okay, we are -- okay. We
24 are at least starting to do it now." And I am halfway
25 home. I am in a t-shirt, shorts, moccasins. I am ready

1 to go rest. And I get a phone call from Dr. Davies
2 telling me to turn around -- I was almost at Chapel Hill
3 -- to go back, that the Governor wanted to discuss this.
4 And, I mean, my first reaction was, "Well, I am not
5 really dressed to, you know, go meet with somebody that"
6 -- I mean, I have never talked to a Governor in all of
7 the years I have been here. I was telling the John the
8 other day, I have been in the Governor's mansion, because
9 he had lead problems and we were fixing their water, but
10 I never actually -- but I have never actually talked to a
11 Governor.

12 So I was a little, even for me, intimidated by
13 this, much less the way I was dressed. She was like "I
14 don't care how you are dressed, they want to talk to
15 you."

16 So I went down to that big old building in
17 downtown Raleigh, and the Governor wasn't there. He
18 participated for a couple of minutes by phone. So I met
19 with -- was it Josh Ellis? Is that his name? I am not
20 sure. I think it is him. And he had an assistant.

21 And they wanted to talk about what we were
22 putting on these forms. And the Governor called for
23 about, I guess, five minutes or so to sort of -- he was
24 in the middle of some other issues. And I am not exactly
25 sure, even from my notes, because it was -- the guidance

1 -- whether he had given Mr. Ellis the guidance what to
2 talk to us about before we arrived. But he essentially,
3 you know, was saying, "Okay. We need to discuss the
4 language on the forms." And then he left it to Mr. Ellis
5 to do that.

6 Q. And what did Mr. Ellis tell you?

7 A. He had a concern. Once again, I don't know
8 whether this was from Mr. Ellis or from the Governor,
9 because the Governor never actually specifically said
10 what, you know, his concerns were. But he had a concern
11 about what we were telling these folks on the forms.
12 Thier concern was initially telling people not to drink
13 the water. He felt that was a pretty strong thing to do.

14 And so I spent probably about a least a half
15 an hour explaining to them -- because they weren't
16 familiar with what we did. And this is something we
17 often have to do with new bosses or people that are not
18 familiar with our group. I explained to him the Risk
19 Assessment Process: what we do, how we do it, what we
20 base it on, that it is all science based. We are not --
21 we don't go out on limbs, you know. We base it on
22 science that we can support, that we can defend anywhere
23 we have to.

24 And that -- part of the reason that we tell
25 people not to drink the water, if there is an exceedance,

1 is because we learned before I came here, 30 years ago --
2 I came here 27, but before that -- they learned, and the
3 person who hired me explained this to me, that if you
4 just tell somebody there is something wrong with their
5 water, that there is a risk, they have got chemicals in
6 their water that might cause cancer or something like
7 that, and you just say, "Well, that is it, see you
8 later," they had learned early on that that was probably
9 the most alarming thing you could do, because you were
10 essentially telling people there was something wrong with
11 their water, pulling the rug out from under them, and
12 just leaving them lying on the floor to figure out how to
13 get up.

14 So our branch learned early on that the only
15 way -- the appropriate way, from a moral and ethical
16 standpoint, to do this, and to make sure that we were
17 protecting public health -- which is what our -- you
18 know, our goal is -- what we are supposed to do, was to
19 do what I have talked about today, which was give them
20 information on the use of their water -- bathing,
21 showering drinking, washing clothes, dishes, explain the
22 chemicals to them, what they could do, what they can't
23 do, whether it is a high risk, low risk, how should they
24 look at it, and then to help them take steps to get a
25 clean water supply.

1 And that was a lesson that our Branch
2 apparently learned the hard way, maybe back in '85 or
3 something like that. Because by the time I had arrived
4 in 1989, they were telling people this part (phonetic)
5 not to drink the water. So that was considered the
6 appropriate thing to do. And I don't think Mr. Ellis
7 quite understood that.

8 And I think after we explained it to him, I
9 think he understood a lot better why we were doing it
10 this way. And I think the thing that the Governor wanted
11 us to do was to try to explain to each person
12 individually what their risk was, either numerically if
13 possible. And that is just not something we are able to
14 do on a Health Risk Evaluation because, number one, as we
15 explained to Mr. Ellis, the sample results are a snapshot
16 of that day. So the risk could change by the time we are
17 looking at it maybe a week later or, in this case,
18 unfortunately, a month and a half later. And that it is
19 really misleading to tell them numerically what the risk
20 is without more information to support it. And you
21 really can't do it numerically for non-cancer and
22 toxicity end points.

23 So I think he understood that. And I think at
24 that point, the crux of the conversation was, "Well, how
25 can we relate the degree of risk -- you know, how else

1 could we address it?" And I think the suggestion might
2 have been made by one of the other folks, that because
3 this was coming from DENR -- this concern -- that if DENR
4 wanted to address or try to address numerically or in
5 some other way, themselves, in their letter -- their
6 cover letter, they could feel free to do it. Because we
7 really couldn't do it in our letter. It really wasn't
8 appropriate.

9 So that meeting was left with, "Okay. We will
10 probably put some language in the cover letters." And,
11 you know, he said, "Go on vacation. Rest." And when I
12 came back, to my, I guess, "surprise" is mild, they had
13 pulled the 118 Health Risk Evaluations back again because
14 there was another dispute from Tom Reeder and his group.
15 Once again, they wanted additional language put on the
16 forms that they knew that I would not -- would not have
17 been acceptable to me. It was even more confusing.

18 And they now wanted us to put it in the
19 statement in the line where we were telling people not to
20 drink their water, basically saying, "Don't drink the
21 water, but we are overreacting." That is essentially
22 what it says. And they knew I would have a problem with
23 it, so it was done while I was gone. When I got back, it
24 was -- they had re-sent them with this language. So, you
25 know -- so we were stuck with it. And there was nothing

1 we could do about it. And I think that was a -- that
2 made it even more important that we talk to everybody.

3 But these are the kind of things that were
4 going on with DENR and Tom Reeder. I mean, this was -- I
5 mean, I had never seen anything like this before.

6 Q. When you were called to the Governor's office,
7 or to meet with the Governor, did anyone from HHS go with
8 you?

9 A. Kendra Gerlach, who was our public relations
10 person, went to the meeting. And she probably took
11 notes, also.

12 Q. But Dr. Davies did not go with you?

13 A. I am not -- no, she didn't go. I am not sure
14 whether she was in town or not.

15 Q. And the Secretary didn't go with you?

16 A. No. I was just told just to go over there.
17 It was probably because we had already finished. The
18 Health Risk Evaluations were about to be sent out. I
19 think there was an urgency, and they just said to turn
20 around and go back.

21 Q. How did the Governor learn about this?

22 A. I have no idea. I would imagine that, you
23 know, the heads -- I know the Secretaries, Dr. Wos, and I
24 am not sure who was the secretary, whether it was van der
25 Vaart or not at that time. Obviously, these were --

1 because of the issues involved, you know, it was clear
2 that these decisions were being made not at the peon
3 level by me and Sandy and those folks, or even, you know,
4 Eric Smith or Debra Watts, but these were decisions that
5 were being decided at the tops of our departments. So if
6 the Governor was aware of that, I wouldn't be a surprise.

7 Q. Who was at the meeting other than Mr. Ellis
8 and yourself and the Government Relations person?

9 A. Just Kendra Gerlach.

10 Q. So there were just three people there and the
11 Governor on the phone?

12 A. Four. There was four of us. It was Mr. Ellis
13 and his assistant, myself and Kendra Gerlach.

14 Q. During the meeting, did anyone mention Duke
15 Energy?

16 A. I don't think so.

17 Q. Tell us what the Governor said about his
18 concern or why he had called you over there.

19 A. I just think he was concerned about, you know,
20 making sure that what we were telling the residents, you
21 know -- like I say, I think it gets back to sort of
22 like, "to know us is to love us," you know? It is the
23 kind of thing where what we do, it concerns a lot of
24 people that are just coming -- that are not familiar with
25 how we work.

1 And then they are very surprised to see that
2 what we do is all science based, peer reviewed published
3 science. We vet everything that we do. We do our
4 homework. We explain what we do to people.

5 So a lot of times -- for example, the thing I
6 mentioned earlier about Neuse Crossing, we had to go to
7 our department at the very top and first tell them --
8 explain to them who we were, how we work, because they
9 had never worked with us before. And so a lot of that
10 is, is that a lot of people have their own viewpoint
11 about how they think we should do issues related to
12 drinking water and how should we communicate with people,
13 and what we should tell them and not tell them. And a
14 lot of people have opinions of that.

15 And that is -- you know, we understand. We
16 have always understood that. And that is why a lot of
17 times we have to sit down, explain who we are, how we do
18 what we do. And most -- pretty much every time -- but
19 there will be one exception we will talk about later --
20 every time we explain this to people, whether they are in
21 our department, new bosses, new state health directors,
22 new heads of departments, after they listen to us when we
23 explain to them what we do, they usually understand and
24 they work with us.

25 Q. I think you answered this, but just in case my

1 memory is wrong, have you ever been summoned by a
2 Governor before?

3 A. Just to the mansion to -- they had very old
4 plumbing over there. This was maybe -- this was when
5 Governor Hunt was the Governor. And he asked that we
6 come over there and take water samples and look under the
7 sinks and everything, and look around and see if we could
8 get the lead out of their water supply, make
9 recommendations whether they should be drinking it or
10 not, things like that. But I never actually spoke with
11 the Governor.

12 Q. Have you ever been summoned before by a
13 Governor about an issue of public concern before?

14 A. No.

15 Q. To your knowledge, has anyone else in your
16 group ever been summoned to meet with the Governor
17 before?

18 A. I am certain that this has occurred, yes.

19 Q. But you don't -- with respect to this issue,
20 has anyone in your group met with the Governor with
21 respect to this issue?

22 A. That, I don't know.

23 Q. Now, did you learn why the change was made in
24 the letter while you were out?

25 A. No.

1 Q. And the change -- was the change made in the
2 Health Risk Assessment?

3 A. It was made -- well, I think they left the
4 tiny little writing at the bottom of the form, but they
5 also added language basically saying this was the maximum
6 risk, literally right after we are telling people not to
7 drink their water. And it was just amazingly misleading
8 and dishonest language.

9 Q. Now, was anyone's name on the health forms
10 that went out? I know you said yours was not. Was
11 anyone's name on it?

12 A. I believe all there was was a phone number for
13 our group for people to call.

14 Q. Did others in your group object to their name
15 being put on the form or not, if you know?

16 A. I don't -- I don't think anybody else was
17 asked to put their name on there, to my knowledge, but we
18 all objected to the language. Very much so. But we were
19 overruled on that.

20 Q. So in terms of the revised language, was there
21 anyone at HHS who agreed to the language?

22 A. Well, the Department would have agreed to the
23 language. I know they did so very unwillingly, at least
24 from, you know, the folks that we had been working with.
25 But I believe at that point in time, they were also

1 driven by the idea that, you know, because of Reeder
2 holding this up for so long and just essentially, you
3 know, just throwing monkey wrench after monkey wrench
4 into the process, that they just needed to get to a place
5 where he would agree to let us go forward, because we had
6 been sitting on these sample results so long. We needed
7 to start addressing them.

8 But I know from the standpoint of Dr. Davies,
9 is that she had -- her concerns were such that when I got
10 back, she basically set down with Dr. Shehee and myself
11 and said, "Okay Ken, you need to start calling people.
12 We need to make sure we are, you know, at the top of our
13 game with risk communication, even more importantly,
14 because of the language that could be confusing the
15 folks."

16 Q. Let me put the question a little bit
17 differently: did anyone in your group agree with the
18 language?

19 A. I don't think they did, no.

20 Q. Now, once those letters went out, was that the
21 end of the dispute over the so called "Do Not Drink"
22 letters? Was that the conclusion of the dispute, or was
23 there another one?

24 A. I would say that it is sort of yes and no,
25 because now we encountered a problem. Once we saw the

1 results and started working on them, we wanted to make
2 sure initially that the laboratories that were utilized
3 to do the analysis had the ability to detect the
4 chemicals to a degree that we felt would reflect our
5 ability to see if there was risk.

6 And I think DENR, you know -- and I understand
7 why -- you know, what their situation was. They were
8 probably under a lot of pressure from different
9 laboratories for these labs to be utilized, because there
10 was money to be made. There was a lot of sampling to be
11 done. And for whatever reason, you know, they tried to
12 pick the best laboratories, but they picked -- you know,
13 a couple of labs that were able to get down to detection
14 limits that we needed. But they also utilized labs that
15 were not able to do that.

16 So -- and I am not sure whether we had to add
17 this to our forms or whether it might have already been
18 on there. But we had to recommend to probably at least a
19 hundred of the sample results that -- to the residents
20 that we needed to resample them and utilize, I think it
21 was Pace Analytical Labs, because they had the ability to
22 detect hexavalent chromium down to the level that we
23 needed to look at.

24 So that was -- after we started sending them
25 out, that was the next big discussion that we had between

1 the departments. And initially, Reeder did not want to
2 do this. He didn't want to do any re-sampling. And I
3 think this was an issue that our Department made it clear
4 to them at the top that, in order for us to do an
5 accurate Health Risk Assessment for these folks, we had
6 to do the re-sampling.

7 So this was -- and I am not sure whether their
8 concern was whether Duke was going to pay for it or not.
9 Duke -- I mean, in terms of Duke's involvement in this
10 risk assessment process, I think they were -- they did a
11 really good job in terms of, number one, they agreed to
12 give everybody bottled water, which was a big relief for
13 us, you know, because they didn't have to do it. You
14 know, it was -- nobody had a finding of responsibility
15 yet. So they did that, you know, even long before those
16 kind of things were found. And we were very appreciative
17 of that.

18 And I am not sure if they were paying for the
19 sampling or not, but I think they were. And I think part
20 of it was they agreed to do the re-sampling. So in terms
21 of those two issues, I think Duke -- you know, they had
22 our salute, because they took the pressure off, you know,
23 and they made sure that people got bottled water. They
24 made sure that, I guess, the re-sampling was done.

25 Q. Now, did Mr. Reeder explain why he objected to

1 re-sampling to determine whether there was hexavalent
2 chromium at the lower levels?

3 MS. LeVEAUX: Objection.

4 THE WITNESS: I think what we got from folks
5 below him, I think, were cost issues, you know, and
6 whether Duke was going to agree to it or not. I think
7 that was their concern.

8 BY MR. HOLLEMAN:

9 Q. How much expense was at issue?

10 A. It was probably anywhere from, maybe -- if it
11 was just for one specific chemical, I think the cost
12 would probably be around \$75. If it was for everything,
13 I think it might have been about \$150.

14 Q. Per well?

15 A. Per well.

16 Q. And Mr. Reeder was concerned about that level
17 of cost in testing these wells, that was your ---

18 MS. LeVEAUX: Objection.

19 THE WITNESS: Well, we are talking about a
20 lot of wells. You know, we are talking about maybe 100,
21 150 wells. It might have been more initially, because of
22 what we were looking at. So, I mean, there were a lot of
23 -- a lot of followup was going to be necessary.

24 BY MR. HOLLEMAN:

25 Q. Let me show you what has been marked Exhibit

1 279. This has previously been marked as an exhibit. And
2 do you recognize that as one of the letters and the
3 attached well water information and use recommendations
4 that went out to residents?

5 (Witness peruses document.)

6 A. I am just trying to make sure it is all here.

7 (Witness peruses document.)

8 Yes, sir.

9 Q. The cover letter is from DENR. Did you all
10 review the language in the cover letter before it went
11 out?

12 A. For each specific resident, or just in
13 general?

14 Q. In general.

15 A. In general, we -- I would say that we -- I
16 will speak for myself, that I reviewed a couple of
17 earlier versions. But the version that was eventually
18 sent out when I went on vacation, no.

19 Q. On the front cover, there is a chart in the
20 letter for chromium. I notice vanadium is not in the
21 chart and letter, on the front page. Do you know why
22 vanadium was not included in the front page -- the first
23 page of the cover letter?

24 A. No.

25 Q. Was that discussed, whether the chart on the

1 first page would have vanadium in it as well as chromium?

2 A. No. This was DENR's decisions to -- you know,
3 how they presented the data for each specific sample
4 result. Our Health Risk Evaluation was our -- our
5 information.

6 Q. Now, the ---

7 A. (Interposing) You will notice also that
8 just ---

9 Q. Go ahead.

10 A. --- that the number that they have for
11 chromium on their cover letter is the total chromium
12 number. And the hexavalent chromium number is not on
13 there. It would -- we assumed it would be contained in
14 there, but we would have based our evaluation on
15 hexavalent chromium, not total chromium.

16 Q. If you look at the HHS form, which is
17 attached, the two substances listed are hexavalent
18 chromium and vanadium, is that correct?

19 A. Yes, sir. Uh-huh.

20 Q. Looking at the cover letter that DENR sent
21 out, I don't see any mention of hexavalent chromium in
22 the letter. Do you know why hexavalent chromium was not
23 included in the DENR letter?

24 A. I am not sure whether they made a decision on
25 their cover letter to look -- to present total chromium

1 or hexavalent chromium. It really just doesn't matter to
2 us, because we are basing our numbers on hexavalent
3 chromium. And in all probability, there probably
4 wouldn't be any exceptions.

5 In other words, if they had a chromium level,
6 and we are saying, you know, "Hexavalent chromium is
7 elevated, don't drink the water," the total chromium is
8 probably still going to reflect it, I would think. So,
9 you know, I don't think it is -- to us, it is not that
10 big an issue, I would say. I mean, it is just their
11 interpretation of the information they want to present.
12 But what we are saying and what we are telling people is
13 still consistent.

14 Q. If you look at the HHS form, under the first
15 block, it says, "While this recommendation represents the
16 maximum in health protection, your well could still meet
17 all the criteria -- would still meet all of the criteria
18 of the Federal Safe Drinking Water Act for public
19 drinking water sources." Is that the language that was
20 added while you were on vacation?

21 A. Yes. And it is also language that they put in
22 their -- their cover letter. And that is what I thought
23 was decided. But because -- if you -- you look at that
24 last sentence, the first statement, "While this
25 recommendation represents the maximum health protection,"

1 that is not true. So it is an untrue statement.

2 Q. And why is it not true?

3 A. Because it may not, you know. Now, the second
4 part of that is, it is true because of what is not said.
5 There isn't a standard for -- there is no criteria
6 specifically for -- in the Federal Safe Drinking Water
7 Act for hexavalent chromium. So it is a true statement,
8 because there isn't one. But it is also misleading and
9 sort of -- it is not cool to do that. It is just not a
10 -- this is not the kind of information we should be
11 giving people, because it is misleading.

12 And that is what our objection was, is that --
13 you know, what we are telling people is there is an
14 increased risk, and we don't think you should use your
15 water. And give us a call, let's talk about it. Let's
16 let us help you. If you get in a fix, let's let us help
17 explain it to you. Let us do our job, which is what we
18 have been doing for 30 years.

19 We are very good at this. We have done
20 probably, at least, a hundred thousand of these, if not
21 more. Let us do our job, that is what our message was.
22 We know what we are doing. We have done this before. We
23 have done this helping your department on hundreds and
24 hundreds of occasions. You know, why all of a sudden are
25 we putting all of this -- this misleading stuff in here.

1 That was what our -- we didn't understand it.

2 Q. In your career, had you -- had this happened
3 with any other notice you had sent out in connection with
4 DENR?

5 A. Well, you know, there have been occasions when
6 -- and this is true with also County Health Departments,
7 who we work very closely with. If we have a new form or
8 we are updating a form, we want to talk to the folks we
9 are working with over in DENR, over in County Health
10 Departments, Environmental Health folks. We want them to
11 look at our forms. We want their comments.

12 A lot of times they help make what we are
13 saying better. They clarify it, make it simpler, make it
14 more to the point. Especially County Health Departments
15 have been really helpful doing that over the years. So
16 we want to have input. We want to have -- these folks,
17 we are working with them. We are out there in the field
18 with them. We are going to people's homes with them.

19 You know, we want them to understand it. And
20 we want the folks -- the residents to understand this.
21 And, you know, we want to be able to communicate. So --
22 but this (indicating) is sort of the opposite of that.
23 This is throwing impediments up, barriers to what we are
24 trying -- to keep it straightforward.

25 Q. Did you or anyone else at HHS or DENR, for

1 that matter, ask that either the cover letter or the HHS
2 form tell people that there was no Federal Safe Drinking
3 Water Act Standard for hexavalent chromium and vanadium?

4 A. I am sorry. Could you -- could you say that
5 again?

6 Q. I am sorry. Did any one in your department at
7 HHS, or even anyone at DEQ ask that the HHS form or the
8 DEQ letter include a statement that there is no -- there
9 are no Federal Drinking -- Federal Safe Drinking Water
10 Act Standards for hexavalent chromium and vanadium?

11 A. This is -- this was not asked for by our
12 department. This was asked for by Reeder and -- you
13 know, specifically, and their department.

14 Q. You may have misunderstood my question. Did
15 anyone ask that the information sent to the residents
16 tell the residents there is no Federal Safe Drinking
17 Water Standard for hexavalent chromium or for vanadium?

18 A. This is confusing. Are you saying whose
19 suggestion was this?

20 Q. No. Let me back up.

21 A. Yeah.

22 Q. All right. This letter says that, "Your well
23 would still meet all the criteria -- all of the criteria
24 of the Federal Safe Drinking Water Act for public
25 drinking water sources." Okay? The letter doesn't

1 contain a following statement that, "However, there is no
2 Federal Safe Drinking Water standard for hexavalent
3 chromium or vanadium."

4 A. I got it.

5 Q. Did anyone suggest that the HHS form or the
6 DEQ letter should tell people that there is no such
7 chromium standard?

8 A. Yeah, we suggested that. At our -- I can only
9 speak for, you know, our Branch, you know. We -- yes, we
10 said, you know, if you are going to say it meets all
11 criteria, we also need to say that there isn't a specific
12 MCL for hexavalent chromium and vanadium. I mean, that
13 came from us. I don't know -- above from us, I can't
14 speak for them.

15 Q. And what was the response from DEQ or your
16 Department?

17 MS. LeVEAUX: Objection.

18 THE WITNESS: Well, it is not on there. So,
19 I mean, obviously, our concerns were turned down on that.

20 BY MR. HOLLEMAN:

21 Q. Now, normally, where would somebody's name
22 appear on this HHS form?

23 A. At the bottom, where it says, "For further
24 information," a lot of times it will say, "Please contact
25 Dr. Kenneth Rudo of the Occupational and Environmental

1 Epidemiology Branch," and the phone number that is give
2 there.

3 Q. And then this little language in small print
4 at the bottom, who asked for that to be included?

5 A. Reeder.

6 Q. Now, what was the standard you used in
7 determining .07?

8 A. Excuse me? Say that again.

9 Q. What is the standard, in words, that you used
10 to determine .07 as a Health Screening Level for vanadium
11 -- I mean for hexavalent chromium?

12 A. It would be an approach.

13 Q. Approach.

14 A. How did we arrive at that number?

15 Q. Yes.

16 A. The approach would be based off of studies in
17 the scientific literature that looked at cancer and
18 non-cancer end points for hexavalent chromium. We would
19 have looked for the key studies that were utilized --
20 that would be utilized to calculate something. If it was
21 cancer, we would look at the 2 year bioassay studies.

22 We would also look at what EPA has said on the
23 subject. A lot of times we look at what California said.
24 They have got a vast number of toxicologists, and they do
25 really good work. And we have worked with them and

1 helped, you know, on a lot of issues over the years, in
2 addition to a lot of other states. So we would look at
3 what other states would do.

4 We would look at EPA regional data, screening
5 levels that they may have calculated. We would probably
6 talk to the ATSDR. They are a branch of CDC that does
7 Human Health Risk Assessment.

8 Q. And can you tell us for the record what ATSDR
9 is, if you remember?

10 A. Agency for Toxic Substances and Disease
11 Registry.

12 Q. Okay.

13 A. I may not have said that in many years. So,
14 in other words, we want to look at the peer reviewed
15 published scientific literature. We want to look at how
16 our interpretations of the literature would match up with
17 EPA, other agencies, state and federal. We want to look
18 at -- you know, derive what is called a Cancer Slope
19 Factor, which is based on the number of tumors --
20 specific tumors, numbers of tumors -- from whatever key
21 study we are going to look at.

22 If we are looking at cancer, it would be based
23 on -- for non-cancer what maybe the most sensitive end
24 point is, toxicity-wise, to calculate a reference dose.
25 And based on that, we calculate an advisory level that

1 may be recommended as a Groundwater Standard eventually.

2 Q. The footnote says that the .07 represents a
3 lifetime cancer risk for an adult at one in one million.
4 Is that a bench mark you used in a lifetime risk for an
5 adult of one in one million?

6 A. Well, in North Carolina, we are -- when we are
7 calculating what might become a Groundwater Standard that
8 we would use for protection of drinking water, the law
9 states -- there is, like, a six-part guidance for how to
10 calculate a Groundwater Standard. And for a cancer
11 calculation, according to the North Carolina 2L Law, the
12 cancer risk that we base if off is one in a million
13 lifetime cancer risk.

14 Q. Is that a Standard that is widely used in the
15 toxicology field, apart from the North Carolina Statute?

16 A. You know, I think different states, even
17 federal agencies, may use a range for a lifetime cancer
18 risk, generally from, say, one in ten thousand to one in
19 a million. A lot of times, it may depend on how you are
20 using it, what you are using it for, what kind of
21 economic impact it may have if you are promulgating a
22 standard, those kind of issues.

23 But from our standpoint -- and this is
24 important -- that we are not concerned with adjustments
25 of a number for technological feasibility or economic

1 reasons, or philosophical reasons. We are required by
2 what we do to protect health, to base our Health Risk
3 Assessments strictly on science -- peer reviewed science,
4 published science, and the values that come from there.

5 Q. There is a fact sheet that is attached to the
6 notice for chromium and for vanadium. Do you know who
7 wrote those?

8 A. We did.

9 Q. Now, after the letter went out -- I noticed
10 some letters went out on different days. Why did that
11 happen, do you know?

12 A. It is just -- it is just that as samples came
13 in, as they were sampling -- eventually we started
14 re-sampling into the summer. And so it is, in essence,
15 as DENR would get sample results back from the
16 laboratories, they would send those results to us, and
17 then we would do the Health Risk Evaluations.

18 Q. Let me show you -- just so we have got this in
19 the record -- what has been marked Exhibit 274, and see
20 if you recognize that document?

21 (Witness peruses document.)

22 A. There is a little interference with your
23 "close all tabs" and "close current tabs."

24 (Discussion off the record)

25 Yes, sir. Go ahead.

1 Q. Do you recognize this?

2 A. Yes.

3 Q. And what is it?

4 A. This would have been the calculation for the
5 hexavalent chromium Health Protective Value that was
6 calculated by the Division of Waste Management at DENR
7 for us.

8 Q. And then that was provided to you?

9 A. For review. And -- we would review it and see
10 if we were in agreement with our counterparts over in
11 DENR.

12 Q. Did you agree with what was in 274 -- Exhibit
13 274, or did you have some disagreements?

14 A. No, we were in agreement. And just to -- just
15 to clarify, we have a standing agreement with the North
16 Carolina Division of Waste Management, because they have
17 a Health Risk Assessment Group within that division. And
18 we work very closely with them. And so the calculations
19 that we did, and a lot of the work that we did on this
20 issue, was in concert and agreement with them.

21 Q. And did they agree with the .07 standard for
22 hexavalent chromium?

23 A. Well, they calculated it, and we reviewed what
24 they did and the basis for it. Yes.

25 Q. And what is Exhibit 275?

1 A. Essentially, the same thing. It is just a
2 calculation of the Groundwater Quality Standard.

3 Q. And is that a document that you received from
4 DEQ, or DENR?

5 A. Yes.

6 Q. And did you all agree with that, as well?

7 A. Yes, sir.

8 Q. Did you ever meet with or talk to anyone at
9 Duke Energy concerning the hexavalent chromium standards?

10 A. I am not sure if we ever had any kind of phone
11 conversations. There was -- at some point in time, they
12 sent over a letter with their concerns to our department.
13 And I don't recall whether we had a phone conversation
14 with Duke or whether we gave information to -- from the
15 Branch to the Department that they would have sent on or
16 not.

17 But we had a -- we had two public meetings
18 with residents. One was in Salisbury -- this was
19 probably last summer -- and one was in Belmont, in Gaston
20 County. And at the first meeting, it was attended by a
21 toxicologist that was either consulting with Duke or
22 working for Duke. And she gave a presentation. And then
23 I went ahead and led the public meeting and, you know,
24 sort of directed it and answered questions.

25 And it was either before or after the meeting

1 I went over to talk with the toxicologist. And I invited
2 her over, if she wanted or if Duke wanted her, at any
3 time to come over -- give us a call, come on over, let's
4 grab a room, get piles of paper thrown around, and talk
5 about hexavalent chromium and vanadium and, you know, see
6 how we both were looking at it.

7 You know, they might have had some information
8 that may have proved helpful to us. We may have had
9 information. This is something we commonly do when we
10 are looking at science. We want to make sure that we are
11 talking to all of the folks involved and we -- you know,
12 everybody has some input. So we offered to do that with
13 the toxicologist at that meeting representing Duke, but
14 we never heard back from them.

15 Q. Did you agree with what she said in her
16 presentation?

17 A. No.

18 Q. What didn't you agree with?

19 A. A lot of it.

20 Q. Do you remember any specifics?

21 A. I think she was just trying to give her view
22 to play down the risk for the residents at the meeting.
23 And we disagreed, you know, with a lot of the information
24 she was presenting. I think we were also in disagreement
25 with how she was presenting it, but it was -- you know,

1 it was a public meeting. So, you know, she was -- she
2 was entitled to say what she wanted to say. And we had
3 no problems, obviously, with her taking as much time as
4 she wanted. She actually had a presentation that she
5 gave. And we sat back and took notes and appreciated them
6 coming and doing that.

7 Q. Do you remember any specific points you
8 disagreed with?

9 A. Just -- I mean, it was a lot of things. I
10 mean, just how she was looking at the science, how she
11 was interpreting the science, how she was explaining it
12 to the residents. Just, you know ---

13 Q. What about the presentation did you not agree
14 with, or the way it was presented?

15 A. I don't -- it has been a year. I am not sure
16 right now exactly what it was. It was just we had a lot
17 of concerns. But these were things that Dr. Shehee and I
18 felt that we could -- were worth discussing with Duke and
19 the representative for Duke.

20 And we wanted to get a better idea of how they
21 were looking at things. And we wanted them to understand
22 how we were looking at things, and seeing if we could
23 arrive at a -- you know, from a scientific standpoint,
24 you know, where we both sort of understood each other.

25 Q. Did you have an understanding of why Duke

1 Energy had a toxicologist to explain things to the
2 residents, when it is not a toxicology agency? And as I
3 understand it, it had been denying it had any role in the
4 contamination?

5 MR. LONG: Object to the form.

6 THE WITNESS: I am not sure whether it was
7 the toxicologist or the Public Affairs person for Duke
8 that was sort of directing their portion of the meeting.
9 But one of them told me -- and they might have told the
10 residents in the meeting -- that this was something that
11 they had done on several occasions at other places in the
12 country where they were dealing with coal ash issues. So
13 apparently this was, you know, part of their presentation
14 that they had done previously in other areas of the
15 country. So I understood that.

16 BY MR. HOLLEMAN:

17 Q. Going back, after your meeting with the
18 Governor and Mr. Ellis and other in the room, did you
19 ever hear again from anyone from the Governor's Office or
20 the Governor himself?

21 A. No, sir.

22 Q. Let me show you -- this is printed on the back
23 and front.

24 COURT REPORTER: Do we have a number?

25 MS. BLAKE: Yes. This will be 490.

1 (PLAINTIFF-INTERVENORS EXHIBIT 490

2 WAS MARKED FOR IDENTIFICATION.)

3 BY MR. HOLLEMAN:

4 Q. And what I am showing you is an e-mail -- a
5 series of e-mails that begin on February 2nd, and
6 continue on February 3rd. If you can look at -- and I
7 see you are copied on the e-mail. Do you remember this
8 e-mail string?

9 A. Not specifically, but it makes sense, because
10 we had -- this was going to be the first of our two large
11 meetings with DENR. The first one was on February 6th,
12 so ---

13 Q. And I see the DENR meeting was pre-empted for
14 a meeting with Duke Energy. I assume that means a
15 meeting between DENR and Duke, not you all and Duke; is
16 that correct?

17 A. I am not -- you know, this could have been
18 around the time when Duke sent a letter to us. I am not
19 sure exactly when that might have occurred.

20 Q. So it could be a meeting between Duke and some
21 people at HHS, perhaps?

22 A. It could have been.

23 Q. It could have been.

24 A. I mean, we had -- we got a similar letter from
25 Aqua at some point in time, also. They wanted to talk.

(PLAINTIFF-INTERVENORS EXHIBIT 491

WAS MARKED FOR IDENTIFICATION.)

Q. Let me show you another e-mail, dated Wednesday, February 11th, 2015, from Dr. Shehee to you, which has been marked Exhibit 491. This e-mail deals with activity by Halifax County, Virginia. Do you know -- do you remember this e-mail?

A. Not specifically. But we were also -- I mean, part of what we are doing is a lot of times when we -- like, when we were working on the Dan River coal ash spill and, you know, we were very intimately involved. We put up the advisories on the river initially. We work with our counterparts -- our colleagues in neighboring states.

So, in this case, we were working with the Virginia toxicologists and their folks, you know, the year before, on the Dan River. Because, obviously, it went into Virginia. And I think we were trying to get a handle on whether Virginia was dealing with, you know, the same issues about wells that we were and how they may want to work on that.

Q. Do you know what happened in Halifax County?

A. No.

Q. What happened after this (indicating)?

A. I don't recall.

1 (PLAINTIFF-INTERVENORS EXHIBIT 492
2 WAS MARKED FOR IDENTIFICATION.)

3 Q. And I would like to -- let me show you another
4 e-mail string. I guess it is marked 492. This is an
5 e-mail dated February 16, 2015, from Mina -- Dr. Shehee
6 to Sandy Mort, and also copied to you. Do you remember
7 this e-mail?

8 (Witness peruses document.)

9 A. Yes.

10 Q. And can -- first of all, what was the context
11 of the e-mail? Why was it sent?

12 A. Given the date, I would say there were several
13 contexts contained within this. At the February 6th
14 meeting, there was a lot of discussion and a lot of
15 desire on the part of Reeder and his folks that we
16 shouldn't be calculating a separate hexavalent chromium
17 value because we already had an MCL of 100 and a 2L
18 Standard of 10, both for total chromium.

19 So they were -- they were, at this point in
20 time, "vociferous" is a good word to use. They really
21 didn't want us to have a hexavalent chromium number.
22 Just like when we talked about earlier, the year before,
23 when we were going to do it they stopped us successfully
24 from promulgating a standard back in 2014. But once they
25 invited us to help them with it in January of 2015, they

1 asked us specifically for our help.

2 You know, we -- you know, to a great degree we
3 had to have the separation of hexavalent and total for us
4 to do our job as requested by DENR and to protect the
5 folks that might be impacted. So this was Sandy Mort
6 just sort of laying out what the issues were based on
7 what the cancer risk would be if we used the MCL, what
8 the cancer risk would be if we used the current
9 Groundwater Standard for total chromium.

10 And because the rule in the law was stating
11 that we utilize -- my understanding, neither the MCL or
12 the 2L Standard were based on the cancer end point for
13 hexavalent chromium, or even total chromium. They were
14 very dated standards. So we didn't even have a number
15 that we could use that was based on the latest science.
16 So that -- number one, that is the reason for redoing it
17 or re-suggesting a number.

18 But the law -- and this -- I think probably by
19 the 16th of February, probably we had had that meeting
20 where Chris Hoke, our lawyer in our Department, had
21 explained to us that, you know, "This is what the CAMA
22 Law says and this is what the 2L Law says." And CAMA was
23 saying use 2L, 2L saying use one in a million. So we
24 were sort of, you know -- we are bound legally, according
25 to what our Department was telling us, to recommend the

1 drinking water value for hexavalent chromium based on a
2 one in a million cancer risk.

3 And we were just explaining to our folks in
4 our Department what the cancer risk would be at the other
5 standards that were -- existed for total chromium. And
6 my guess is is that this would have also been presented
7 to DENR as an explanation of why we were doing this.

8 Q. And for the record, it says, "The Federal Safe
9 Drinking Water Act approved Maximum Contaminant Level for
10 total chromium is 100 micrograms per liter in finished
11 drinking water, and the State Groundwater 2L standard for
12 total chromium is 10 micrograms per liter. Both
13 standards are for total chromium, which consists of
14 trivalent chromium and hexavalent chromium. Neither the
15 MCL nor the 2L standard are for hexavalent chromium
16 alone. The MCL and the North Carolina 2L standard for
17 total chromium are dated and no longer protective of
18 public health, based on the principles by which the North
19 Carolina 2L standards are based." Did you agree with
20 what was in the e-mail?

21 A. Yes. I think that is one of the things we
22 were trying to -- you know, our Department at this point
23 understood the -- you know, what we were recommending was
24 based on law, in terms of degree of protection. And I
25 think at this point we were also trying to communicate

1 that to DENR.

2 Q. And then the e-mail goes on to say, "Based on
3 an updated cancer slope factor for hexavalent chromium as
4 referenced in the *Toxicological Review of Hexavalent*
5 *Chromium in Support of Summary Information on the*
6 *Integrated Risk Information System* -- or IRIS -- and the
7 health-based drinking water level calculated by DENR
8 toxicologists and reviewed by DHHS toxicologists, a
9 one in one million excess lifetime cancer risk for
10 protection of public health results in a groundwater
11 concentration of 0.07 micrograms per liter." And I guess
12 you -- did you agree with that?

13 A. Yes. And it also was true that in addition to
14 IRIS containing the cancer slope factor that we agreed
15 with, they also -- it was also utilized, I believe, by
16 California EPA, OEBA. I believe they used the same
17 cancer slope factor. And I also think New Jersey did.
18 And I believe it was also -- I think, initially, we also
19 saw that -- I think it was EPA Region 9 had a screening
20 value based on the same cancer slope factor.

21 So there was a consistency of -- a consistency
22 across the board of state and federal agencies with the
23 cancer slope factor that we were utilizing. So we were
24 very scientifically comfortable with what we were
25 recommending, in addition to having very solid peer

1 reviewed published science to base it off of.

2 Q. And then the e-mail concludes, "The Excess
3 lifetime cancer risk at the MCL, or 100 micrograms per
4 liter, is one in 700. The cancer risk at the North
5 Carolina 2L groundwater standard, or 10 micrograms per
6 liter, is one in 7,000. Both the MCL and the North
7 Carolina 2L groundwater standard for total chromium
8 present an elevated excess lifetime cancer risk above the
9 North Carolina target risk level of one in one million
10 for hexavalent chromium, which is identified as a
11 mutagenic carcinogen. The excess lifetime cancer risk
12 estimates for the MCL and the North Carolina 2L standards
13 calculated using the 2L rule method result in an
14 unacceptable level of excess lifetime human cancer risk."
15 And did you agree with those statements?

16 A. Not only do I agree with it, but we still --
17 we still stand by that. And that is still what we
18 believe to be true.

19 Q. Now, did this language make it into the DENR
20 letter, or for that matter, into the HHS form?

21 A. I think, to a certain degree, it is in there,
22 because -- you know, the part about the one in a million
23 cancer risk is in the bottom of the form. In terms of
24 what it would be at the total chromium standards, no. I
25 don't think there was anybody -- I don't -- I don't

1 recall if anybody asked to have those numbers put in
2 there or not.

3 Q. And the information about the excess lifetime
4 cancer risk estimates for the MCL and the North Carolina
5 2L standards, that is not included in the materials, is
6 that correct?

7 A. No. Just the one in a million.

8 Q. I guess this is 493.

9 (PLAINTIFF-INTERVENORS EXHIBIT 493
10 WAS MARKED FOR IDENTIFICATION.)

11 Exhibit 493 is an e-mail dated March 13, 2015,
12 from Dr. Shehee to Eric Smith and Debra Watts, copied to
13 you. Do you remember the e-mail?

14 A. Very well.

15 Q. Can you explain the context for this?

16 A. Yes. This is -- I think this was the first
17 one. This was -- we were -- I know I have got a really
18 -- I have an e-mail, I think, that responds to this. But
19 this was the first time we had -- before this happened,
20 we had reached consensus between the two Departments.
21 Our Department already had -- was in agreement with what
22 we were doing. And now, as it -- this was as a result of
23 the March 6th agreement where Tom Reeder says "Go ahead
24 and do this." And then there was some more discussion
25 because he pulled it back, like, two days later. And

1 then a couple of days later, apparently they all worked
2 it out.

3 And then on Friday, March 13th, they told me to
4 go ahead and send out what he had. We might have only
5 had, maybe -- I don't know how many we had by this point
6 -- sample results, but this was a Friday. I did the
7 Health Risk Evaluation -- I remember this very well -- I
8 did the Health Risk Evaluations. I was going to run them
9 over by hand to Eric Smith, but it was -- it was probably
10 3:00, 3:30 on Friday, and he was leaving early.

11 He said, "Just bring them over on Monday,"
12 because, you know, they wouldn't have sent them out over
13 the weekend anyway because they had to get their cover
14 letters. But we were done. We were in consensus. We
15 were, you know, all dancing to the same tune.

16 So I was about to run them over. And he says
17 "Bring them over on Monday." Then we got a call from Dr.
18 Davies going, "I hope you didn't send these out yet, you
19 know -- these Health Risk Evaluations. We have got to
20 pull them back." So I said, "Well, we were going to send
21 them out but we hadn't done that." So they took a deep
22 breath and were happy we hadn't sent them out because
23 apparently there had been this -- "we," you know -- Sandy
24 and I and Mina, I guess -- had thought that this issue
25 was -- about this additional language had been decided

1 and not to put it on there.

2 So we had -- you know, and then we were -- we
3 actually had an e-mail from Dr. Davies to -- for us to
4 start sending these out, that we were in agreement. And
5 then we had to pull them back. They insisted on putting
6 this language in.

7 Q. Who is "they"?

8 A. DENR -- Reeder and his folks. Our Department
9 -- I think part of this is -- and this -- by March 13th,
10 I think the people above us in our Department were
11 getting weary of this -- this battle, which is what it
12 was. You know, we were -- it was just -- it was very,
13 very -- we had not really encountered anything like this
14 before -- any kind of resistance, then agreement, then
15 more resistance then more agree -- it was just -- it was
16 foreign to us, I guess.

17 And, you know, the impression I was getting
18 from our Department was, like, "We have just got to get
19 these out." You know, does this -- is this language, you
20 know, is it untrue? Is it this or that? And we would
21 give our opinion, but, you know, they weren't -- you
22 know, I think, you know, they were making decision based
23 on, you know, they really wanted to move forward. And if
24 it didn't really actually negate what we were saying,
25 they were willing to put it on.

1 And we still objected, you know, from within
2 our group. We have e-mails with our very, you know,
3 strong objections. But, I mean, you know, when we are
4 told to do something, we are told to do something. You
5 know, there are lines that we can't cross, both morally
6 and ethically, which is why I removed my name from this
7 at this point. But, you know, orders are orders.

8 So this is when -- the first time we pulled it
9 back and then didn't send them out again. This would
10 happen either one or two more times between March 13th,
11 2015, and a week or two into April when I was -- came
12 back from vacation.

13 Q. Can we mark this as Exhibit 494?

14 (PLAINTIFF-INTERVENORS EXHIBIT 494
15 WAS MARKED FOR IDENTIFICATION.)

16 Exhibit 494 is an e-mail -- two e-mails. One
17 begins from you to Dr. Shehee, dated Sunday, March 15,
18 and then a subsequent on the same day from you to Dr.
19 Shehee.

20 A. Yes, yes.

21 Q. Do you remember these e-mails?

22 A. Yes, I do.

23 Q. All right. The first one says, "Mina, this is
24 the HRE version that I am recommending. Since we now
25 have an absolutely scientifically untrue human health

1 statement insofar as it pertains to chromium on the
2 bottom front of our HRE form, i am removing my name from
3 the HRE form and -- as an initial reviewer. I have
4 attached my recommended version of the HRE form. It
5 still has the OEEB contact information, but I cannot,
6 from an ethical and moral standpoint, put my name on a
7 form with this absolutely untrue human health statement
8 insofar as it pertains to chromium. If you want me to, I
9 will still do the HREs and give risk communication
10 information to NC residents for the sample results, but I
11 do not want my name on this form. Sincerely, Kenneth
12 Rudo, Ph.D. Toxicologist, North Carolina Division of
13 Public Health." And is that the e-mail you sent?

14 A. Yes.

15 Q. And could you explain -- you may have already
16 done this -- but for the record could you explain what
17 was the absolutely scientifically untrue human health
18 statement as to chromium on the form?

19 A. Well, it is -- what is on here (indicating) is
20 different than what this was -- I don't have the -- you
21 know.

22 Q. Okay, right. What were you referring to?

23 A. It was probably another version of this that
24 was -- probably had -- I think had something about the
25 Public Water Standard on there. More consistent with the

1 language that is in the top of this. This (indicating)
2 is the untrue part here.

3 Q. And when you say "untrue part here," it is the
4 attachment to Exhibit 279 under "Test Results and Use
5 Recommendations," is that right?

6 A. Yes.

7 Q. Yes.

8 A. I mean it is -- this is embarrassing. I mean,
9 it is just -- this is the last thing I ever wanted, to
10 have something like this where I am just -- I am just --
11 this is -- I am stunned. Okay? I mean, I just -- I
12 can't believe that this is going on in the world now, but
13 it is. But, I mean, it is just -- this is -- this is
14 just not how we do our work.

15 I mean, we are trying to protect public
16 health. We are trying to protect people. We are trying
17 to help people. We are trying to help people protect
18 their water. And this is ground that we have just never
19 been on in all the years I have been here.

20 This is -- there are a lot of things that have
21 happened pertaining to this that has just never happened
22 before because we are the scientists. We are the ones
23 that have the knowledge and the information, and we can
24 defend this for our department. We can defend it for the
25 residents. If we have to, we could defend it for Duke or

1 DENR. That is what our job is, to take this information,
2 use it to protect health, and have it be defensible
3 information.

4 And we have had lots of discussion, once
5 again, as I said before, with health departments, DENR
6 and even stakeholders, like, from industries, about how
7 we say what we say. And we have considered it. But we
8 have always, always made sure that what we said was true
9 -- scientifically true, public health true -- and that we
10 are not contradicting ourselves in what we are saying.
11 Because if we are doing that with what we are saying,
12 then we are doing it to the residents.

13 You know, and if we are confusing them and
14 making a bad situation worse by not being clear with
15 them, then to me that is just not ethical as a scientist,
16 as somebody who is supposed to protect public health, as
17 to what I do for a living. So this is just -- I mean,
18 this is just -- I don't even know what to say. I just --
19 having to say this in an e-mail to my boss is just -- you
20 know, I don't even know what -- I mean, it is crazy.

21 I mean, we shouldn't have had to be at this
22 place where this e-mail was even written where I have to
23 say this. And I think that, more than anything, bothers
24 me, because it is just -- we have worked really well with
25 DENR all the years I have been here, you know. There are

1 times when we, you know, had a little bit of ranting and
2 raving between us, where we have debated issues. But at
3 the end of the day -- and I think this is the problem
4 when we get down to it, at this point in time.

5 We have always respected what the scientists
6 in DENR do and their jobs and how they approach their
7 work. We have tried not to sit there and try to be
8 experts in hydrogeology and tell them how to do their
9 job. And they, for their part, have always respected,
10 you know, the fact that they are not human health risk
11 assessors, and that they shouldn't tell us how to do our
12 job.

13 And this was true until Tom Reeder became --
14 we started dealing with him in 2013. And all of a
15 sudden, you know, our working relationship with them
16 changed to where these -- these basic premises, in our
17 direction from them, were challenged. We still don't
18 tell them how to do they hydrogeology; we don't challenge
19 what they are doing and how they are doing it. They are
20 the experts.

21 So I think from that standpoint, because all
22 of a sudden, they have changed the nature of our working
23 relationship in an unethical manner, from Reeder's
24 standpoint. It is -- I mean, this was hard. This was
25 difficult. They were putting us -- knowingly putting us

1 in a corner -- in a bad position. And our bosses, bless
2 their hearts, did everything they could. They worked so
3 hard to try to make this work.

4 Q. At this point in time had you met with the
5 Governor yet?

6 A. No, that would have been about a little over
7 two weeks later.

8 Q. When you met with the Governor and then Mr.
9 Ellis, too, did either of them suggest that HHS just send
10 out the results of the testing to the residents with no
11 explanation?

12 A. I think they -- they -- they had some comments
13 about the fact that we were telling people not to drink
14 their water. I think they felt that that was a strong
15 thing to do. But once again, it was because they hadn't
16 worked with us before. They didn't -- they didn't
17 understand how we do our work. They didn't understand
18 the history of us protecting private wells and drinking
19 water in North Carolina, that this is what we do, this is
20 how we do it, and why we do it this way, why we -- you
21 have to -- you can't tell people, from a moral
22 standpoint, "Your water is messed up," and go "Well, I
23 have got to go to lunch. I will talk to you later." You
24 can't do that, it is not right.

25 And so -- and it is also from a standpoint of

1 their health, it is the worst thing you could possibly
2 do. I mean, talk about freaking out somebody, alarming
3 them to an unnecessary degree. If we don't follow
4 through and tell people -- give them guidance,
5 recommendations, we are not regulators. And they don't
6 have to listen to us, but people do because we have been
7 doing this a long time. We have earned the credibility
8 we have because we have gone to the mats and protected
9 people and worked hard to do that for so many years. All
10 of the folks that have worked in my Branch on these
11 issues have done that. So we have learned, you can't
12 just throw them out there.

13 And so when we were able to explain it to Mr.
14 Ellis, he understood it. And he felt that, "Well, okay,
15 if we are going to have an alternate view at the request
16 of DENR about maybe, you know, what this information
17 means coming from us, it would be more appropriate to put
18 it in the DENR cover letter," which they did. But we
19 felt it is okay if they want to say it, but we can't do
20 that.

21 What ended up happening was, not only did they
22 say it, we ended up saying it, against our objections. I
23 mean, our Department was -- we were forced to do this.
24 We were put in a corner to do this.

25 Q. At the beginning of the meeting with the

1 Governor and Mr. Ellis, were they asking whether you
2 could send out the results without telling people not to
3 drink their water?

4 A. I think they were more of asking us if we
5 could explain it individually to everybody, In other
6 words, everybody gets one that says "This is what your
7 risk is, numerically." I think that was more of what
8 they were thinking. And I think they were concerned
9 about telling people not to drink their water.

10 I think part of it goes back to -- I think we
11 were created as a group because, from a bureaucratic
12 standpoint, you know, the first thought is always, "Do
13 not make things look bad, or bad -- don't give out the
14 bad information, you know. How should we handle it?"
15 We were sort of created to take that bad news and to help
16 everybody through it, both within government and outside
17 government.

18 We were sort of, you know, the -- we were
19 created to do the opposite of what the bureaucratic
20 mindset or dogma would be. It is like, "Well, don't make
21 it worse. Don't tell them, you know -- let's limit what
22 we are telling them." We were created to give them all
23 -- give them everything and do it scientifically, and do
24 it in a way that can understand -- communicate with
25 people. I mean, that is what we do.

1 So -- and our Department, I mean, we used to
2 be in the Environmental Department for many years. We
3 have sort of gone back and forth in Departments. And our
4 Department has always eventually understood what we are
5 doing and allowed us to do what we do. They have always
6 done that. This is the first time that these barriers
7 were ever thrown up.

8 (PLAINTIFF-INTERVENORS EXHIBIT 495

9 WAS MARKED FOR IDENTIFICATION.)

10 Q. And let me show you what is marked Exhibit
11 495. And those are e-mails, also, on Sunday, March 15,
12 from you to Sandy Mort and from Sandy Mort to you, as
13 well as the e-mail from you to Dr. Shehee on the same
14 day. Do you remember the exchange with Sandy Mort?

15 A. Yes.

16 Q. And you write her, "Sandy, although the below
17 statement represents my personal and professional view on
18 this problem, because you are my valued and trusted
19 partner in the work we do for protecting public health
20 for the folks in North Carolina, I wanted to send this
21 separate e-mail to let you know my position on this
22 issue. Thanks, Kenny." And was that the e-mail you sent
23 to her?

24 A. Yes.

25 Q. And then it is written back from her to you

1 the same day, "Ken, I too am not comfortable from a
2 toxicological, health protective and transparency
3 standpoint with the MCL statement added to the bottom of
4 the CAMA groundwater data HRE form, specifically as it
5 pertains to hexavalent chromium. I do not believe that
6 it provides the well-user with the most appropriate
7 information as it pertains to their potential exposure
8 and health. I do not want to have my name included on
9 the form as a reviewer or contact resource, since this
10 would imply I agreed with our was comfortable with this
11 statement." And is that what she wrote back to you?

12 A. Yes, sir.

13 Q. Do you know where Sandy Mort is now? Where
14 does she work now?

15 A. She works in the Division of Waste Management
16 in DEQ.

17 Q. And when did she leave HHS, do you know?

18 A. It was either the beginning of this year or
19 maybe a couple of months before that. Maybe November,
20 December of last year.

21 Q. And do you know why she changed departments?

22 A. I think they were just offering her more
23 money, I think. And she would have -- I think, you know,
24 she was going to have, I think, more freedom over there.
25 I think this sort of made her look at -- we were having

1 restrictions put on. And also we were having -- at this
2 point, I think we might have -- I think we may have had a
3 new State Health Director at this point, and it looked
4 like things were going to be hard to work with there.

5 Q. And the new State Health Director was who?

6 A. Randall Williams.

7 Q. So after, now, these notices went out and it
8 didn't have your name on them, or anyone else's for that
9 matter, what happened next with the hexavalent chromium
10 issue and the notices to the well owners?

11 A. I think there was -- around the 20th of March
12 or somewhere around there, we sent out another batch of
13 HREs. We re-sent the ones we were going to send. We may
14 have had a few more. And we sent those out. And those
15 were pulled back, also.

16 In other words, we had reached consensus
17 again. We were told via e-mail, "Go ahead and send these
18 out. We are all in agreement between the two
19 departments." You know, we were told to use this
20 language. So we went ahead and sent out what we had to
21 send out to the residents. But as soon as we sent it
22 out, it was pulled back again, because they wanted to
23 make additional changes to the HREs.

24 In other words, we reached consensus. Reeder
25 threw some more objections in after we reached consensus,

1 and they wanted more language in there.

2 Q. When you say "you" -- that is, HHS -- sent
3 them out, does that mean you sent them to DEQ to be
4 transmitted?

5 A. Yes.

6 Q. So they had not physically gone out to the
7 residents yet?

8 A. I don't believe they had.

9 Q. Do you remember what the language issue was
10 the second time?

11 A. It was between the versions -- it was language
12 that probably included what was on the previous exhibit
13 -- the HRE forms -- both at the bottom and in part 1. I
14 think there was probably some additional verbiage in
15 there somewhere. But that was -- that was just not
16 acceptable to me. That is when I was really starting to
17 have some problems with this.

18 Q. Okay. Then what happened?

19 A. I think our Department at this point stood up
20 and said, "You know, I don't think we can do this. I
21 think this is, you know, as far as we can go." And that
22 was probably some of the discussions that might have been
23 going on between March 20th and March 31st. Because
24 around April 1st or April 2nd, I was told to send out the
25 118 that we did. And that is when I had the meeting with

1 the Governor. So, in other words, we had reached
2 consensus again. And once again, we had reached
3 consensus, I went on vacation, and before I could get to
4 Chapel Hill, I had to turn around and come back to
5 Raleigh to go downtown.

6 Q. And after that meeting, you went on vacation?

7 A. Yes.

8 Q. And while you were gone the letters went out.
9 We have been through that. And so after those letters
10 went out, then what happened next?

11 A. While I was on vacation, I thought the letters
12 were going out. You know, I gave them -- they went over
13 to DENR. And while I was on vacation -- and nobody told
14 me about this until literally the day before I got back
15 -- they put the language in that we had objected to, that
16 we had reached consensus that it wouldn't be in there.
17 Apparently, they decided while I wasn't there to put the
18 language back in. And they re-sent the 118 Risk
19 Evaluations out while I was gone.

20 Q. And when you say "they" sent out, who are
21 you ---

22 A. (Interposing) Our Department.

23 Q. Sent them to DEQ?

24 A. Yes.

25 Q. And then did DEQ mail them or not?

1 A. I think they did.

2 Q. And then what happened next?

3 A. I got back and was told about it. And I was
4 not happy. I felt that that was not an honest thing to
5 do in terms of -- you know, our Department is entitled to
6 do what they want to do. They are the bosses. And I
7 guess they felt that, you know, "we have got to get this
8 going. We have got to get it out."

9 And part of it might have been that I was just
10 maybe hard to reach. I was on vacation. They may have
11 reached out to me. I don't know. But whatever it was, a
12 day or two before I came back was when I found out that
13 they did this and we sent them out. I got back, I wasn't
14 happy about it but, I mean, there wasn't much I could do
15 about it at that point. They felt that they had to
16 finally do this in order to get these out, because it had
17 been almost two months -- or two months since some of
18 these came in.

19 So I think that was driving our Department,
20 that they felt we still had the information to not --
21 tell people not to drink their water, even though it was
22 compromised by Reeder and his folks. They felt it still
23 possessed what we needed to make sure people weren't
24 drinking their water.

25 And to a certain degree, they were right.

1 There was some confusion. There was a lot of confusion,
2 but it was at that point that Dr. Davies -- I think she
3 felt that -- you know, she could see that there was
4 probably going to be this confusion between the mixed
5 messages by the residents, and that is when she made the
6 request to me to start calling people.

7 Q. I believe earlier you said you did make notes
8 of your meeting with the Governor, is that right?

9 A. Yes.

10 Q. Do you have those notes? Could I see that?

11 (Document handed to counsel.)

12 And we will make copies of that.

13 A. Start at the bottom.

14 Q. Okay.

15 A. So at the bottom of the page is what we
16 decided to do. We did the 118. They were going out. I
17 was leaving. I am on the road there.

18 Q. Can we make those an exhibit, please? I guess
19 this is Exhibit 496, is that correct?

20 COURT REPORTER: Yes.

21 (PLAINTIFF-INTERVENORS EXHIBIT 496

22 WAS MARKED FOR IDENTIFICATION.)

23 BY MR. HOLLEMAN:

24 Q. Dr. Rudo, Exhibit 496 are your notes of
25 various things you did at work, including the meeting

1 with the Governor, is that right?

2 A. Yes.

3 Q. And your handwriting, I must confess, is much
4 better than mine, but I can never tell if I am reading
5 people's handwriting correctly. So would you please read
6 into the record the entry at the bottom you just referred
7 to, and then the entry about your meeting with the
8 Governor?

9 A. Okay. "4/2/15 - Finished coal ash, 3 hours
10 OT. Finished coal ash drinking water evaluations.
11 Approximately 118. Took them over to DENR. Mina okayed
12 additional statement at the bottom of the Health Risk
13 Evaluation forms, but Sandy and I suggested stating that
14 the HRE is not complete until re-sampling that we
15 requested is performed."

16 Top of the next page, "Called by Megan Davies
17 and told to go over to the Governor's office and meet
18 with Governor's Press Secretary and Kendra Gerlach about
19 coal ash forms. Mr. Ellis, the press person, took a call
20 from the Governor about something else, but told him we
21 were there for the coal ash well issue. Mr. Ellis wanted
22 me to put some specific health risk information
23 individually for each person so we could play down the
24 health risk.

25 "I explained in detail how we did our risk

1 assessments and the approach based on cancer and
2 non-cancer risk, and as a result we could not predict
3 specific risks for non-cancer end points. He then wanted
4 us to add the statement about how this risk is the
5 maximum risk and not over MCLs, and I told him we could
6 not ethically do this on our HRE forms because it would
7 not be true and correct, and it would be misleading.

8 "We discussed our concerns with DENR and their
9 fighting with us about vanadium and chromium-6 and trying
10 to ethically compromise our risk assessment process. He
11 asked if we could come up with language to suggest to put
12 on DENR form about their and his view of the degree of
13 risk and the MCL issue, and we all came up with some
14 language for suggestion to DENR. I also warned him very
15 clearly about documentation of e-mails, meeting notes, et
16 cetera, about what DENR has tried to do to compromise the
17 HRE process in protecting the residents water around
18 these sites." So I was there about one and a half hours.

19 Q. Now, the language he requested relating to the
20 MCL ended up in the HRE form that was sent out, is that
21 right?

22 A. I would say it did, yes.

23 Q. All right. After -- so after you come back
24 and the forms go out, I gather you spent time talking to
25 residents?

1 A. Yes.

2 Q. And what else happened, apart from that?

3 A. I think, you know. pretty much we were
4 concerned with getting the wells re-sampled by Pace
5 Laboratory so we could get down to the detection limit
6 that was appropriate for hexavalent chromium. So we were
7 working with DENR and the residents to get those -- and
8 Duke to get those wells re-sampled. And everybody was
9 cooperating really well in that.

10 We had a couple of public meetings with the
11 larger communities around the coal ash ponds, and we were
12 able to communicate, you know, and talked to a lot of
13 people there, also. And that was pretty much -- I think
14 in terms of what we were working on, by the end of the
15 summer, I think -- of last year, we felt that we had, you
16 know, done our job in terms of communicating with
17 everybody. By then, DENR was working on their
18 hydrogeology work and their background sampling. And it
19 -- really everybody was working really well together, I
20 would say, during last summer.

21 Q. And after the summer, what happened?

22 A. Pretty much, you know -- I would say really
23 nothing. I think everything sort of remained the same
24 until probably October.

25 Q. And what happened in October?

1 A. We had a new Deputy Secretary come in.

2 Q. And that is Dr. Williams?

3 A. That is Randall Williams, yes. And Randall
4 had some ideas about what we were doing. And he had
5 talked to folks in our Department. And I talked to Dr.
6 Shehee. And this is consistent with what -- you know, a
7 lot of times when physicians come in either as our Branch
8 Chief, Section Chief, State Health Director, we go over
9 and talk to them about what we do, explain -- because a
10 lot of times, how a physician looks at risk would be
11 dramatically different then how a toxicologist does.

12 And so we explain the risk assessment process.
13 And, you know, it is usually a very fluid kind of thing
14 where they have to get to know us to work with us.
15 Usually, something happens that is a big issue where they
16 get to interact with us in a detailed manner, and they
17 come away understanding what we do and allowing us to do
18 what we do.

19 In this case, I talked to Dr. Shehee about
20 whether we should talk to Randall about explaining how we
21 do what we do. That might help him understand so that,
22 you know, we can work real well with everybody. So, he
23 invited me over to speak with him. I went over there --
24 I forget when it was. I think it was in October
25 sometime.

1 We probably spoke for about an hour, hour and
2 a half. It was a good conversation. I mean, we -- we --
3 he told me about how he looks at things and his
4 philosophy and his goals and things like that. I
5 explained to him how we do what we do, and what we base
6 it on. He had a lot of questions.

7 And, you know, I tried to make sure we were,
8 you know, emphasizing that we use science and the
9 principles of epidemiology and principles of toxicology.
10 We vet the information we work on. We try to work via
11 consensus with people. It is a very transparent open
12 process.

13 And I told him, I said, you know, "When our
14 Department protects health -- and we actively do that,
15 and promote that -- then we look good as a Department.
16 We have credibility and we fulfill our -- you know, our
17 job, which is to protect folks." And I said, "You know,
18 so there are times when, for some reason or other, we
19 will have people in a Department don't do that, and they
20 do the opposite." And I said, "Usually that results in
21 difficulties where we have -- you know, we get looked at
22 as not doing our job. And it hurts our credibility." So
23 that is pretty much the meeting that we had.

24 Q. At the meeting, did you discuss the hexavalent
25 chromium and vanadium in the well-users wells?

1 A. I have to say, I don't really remember if we
2 did or not. We actually may not have, specifically, but
3 he definitely -- he did have questions about why did we
4 tell people not to drink their water. He had some
5 concerns about that. And I sort of explained to him what
6 I have explained here about why we do that.

7 Q. What happened next?

8 A. I think you have to fast forward to probably
9 early, mid-January. Mina got a request from Randall to
10 -- Dr. Shehee got a request from Randall to -- probably
11 around the 16th of January or something like that, to
12 write a letter that she would sign stating that we were
13 going to retract the Health Risk Evaluations that we did
14 last year to the residents, and tell them -- the ones
15 that were -- you know, had levels of hexavalent chromium
16 below 10 parts per billion, we would tell them that their
17 water was safe to drink.

18 Q. And did he ever discuss this with you?

19 A. No.

20 Q. Did she explain to you why this was happening
21 or why the change?

22 A. She did not. She was -- she was stunned by
23 it. This was -- in essence, it came out of nowhere. We
24 were not expecting this. We didn't see it coming.
25 Nobody had ever asked us to do that before. This was

1 unprecedented. I mean, this was -- telling people that
2 we protected that -- we were going to tell them now that
3 what we told you was not safe is okay, when it is not, is
4 -- I mean, for obvious reasons, it is just not something
5 we had ever been asked to do before.

6 I mean, there are lots of situations where we
7 fixed a drinking water source or the contamination had
8 passed on by, and it was no longer a risk. And at those
9 times, we told people their water was safe. But it was,
10 because things has changed.

11 But this was a situation where we had no new
12 data to say anything had improved. It was not like we
13 had filtration systems or we had run water lines to these
14 folks. Nothing had changed. And he was asking Mina to
15 write a letter for Mina to sign to tell the residents
16 that their water that we said wasn't safe was now safe.

17 Q. So what did you and Dr. Shehee then do?

18 A. Well, Mina -- you know, she was like, "Do you
19 want to write the letter?" I went "No," I said, "I can't
20 do that." And I went, you know, "What are you going to
21 do?" And she was, like, "Well what do you think I should
22 do?" And I was, like, "I don't know, you know. I can't
23 tell you what to do; you are my boss. But, obviously,
24 you know how I feel about it." So I think she went home
25 and talked to her husband, thought about it, and she came

1 back, and she was -- she was, like, "I can't do this,
2 either." So I think that was what she came back and told
3 the Department.

4 Q. And then what happened?

5 A. I think a process began -- and my knowledge of
6 this is limited to what either Dr. Davies would tell me
7 in conversations with both of them, or Mina -- Dr.
8 Shehee. But he had, in essence, decided to do this in
9 mid-January. He had -- "We will do it." And he wanted
10 us to write the letter and sign it. He wanted it to come
11 from us.

12 We wouldn't do it. I mean, this was something
13 that we felt it was something that the State Health
14 Director -- because by now he was the State Health
15 Director. And if the State Health Director wanted to do
16 it, then it was appropriate for him to write a letter
17 that we felt that would be, you know, not right for us to
18 sign for lots of reasons. Anyway, he had made up his
19 mind to do this.

20 From what I gathered from Mina -- between the
21 middle of January and around February 23rd and 24th is
22 when I went on leave for some time -- was that especially
23 her and Dr. Davies were trying to recommend to Dr. --
24 they were trying to recommend to not do this. Now, if
25 there was a way that they wanted to change how we dealt

1 with hexavalent chromium in the future, down the road,
2 with wells that we would have going forward, you know,
3 well, we could -- you know, we can discuss that. But to
4 retract what we had already done -- retract protection
5 that we gave to folks, they felt that that was not a good
6 idea for just so many reasons. And they relayed it, you
7 know, to Randall and tried to talk him out of it.

8 I can't speak for Danny Staley or Chris Hoke.
9 I do not know what their views were. I mean, obviously,
10 the year before their views were, "Let's tell people not
11 to drink the water if it is bad." So -- and I don't know
12 if they changed their views or not. But I know from the
13 standpoint of our group and Dr. Davies and Dr. Shehee,
14 who had worked so very closely and intimately with
15 everybody on this, that they felt very strongly that this
16 was not a good idea.

17 Number one, the residents would probably look
18 at us as, you know, "What the heck is going on down
19 there? What are you basing what you are doing on? You
20 based this on science and now all of a sudden you are
21 just saying, well, we were wrong." So that, as far as I
22 knew, they -- you know, they kept trying to talk him out
23 of it.

24 And eventually -- this was right before I
25 left, because he had already made up his mind to do this

1 -- he -- Randall -- he either asked Mina to write the
2 letter for his signature, or he had written a draft
3 letter and wanted Mina to review it for, like, just --
4 you know, for content, not for whether she agreed with
5 it.

6 So she -- clearly, she didn't agree with it.
7 There was -- there was not consensus, because he never --
8 I mean, he never spoke to me about this, never spoke to
9 any of his departmental technical people. And once he
10 made it clear that he was going to do this, Reeder
11 started giving him information from a Public Water
12 standpoint, and trying to get him to promote the idea
13 that, "Well, you know, we consider it safe for public
14 water. So that is a good explanation of why you should
15 consider this to be okay to do. Because if we consider
16 it safe in Public Water and, you know, there is no real
17 difference, then it should be safe for these residents."

18 And that, from what I know, came from Reeder.
19 And Reeder gave him data which we have never seen. I
20 don't know whether he reviewed it or not, but he sort of
21 pushed that as a -- one of many explanations for doing
22 this, and justifying this. And then, of course, that
23 explanation is -- that is a terrible explanation. It is
24 just faulty all the way through.

25 So, you know, I -- and once they made the

1 decision to do this -- I know, because we were working
2 with Lee County, because we found a bunch of wells
3 contaminated with hexavalent chromium down there -- that
4 Reeder and Randall went down there to try to explain to
5 them that they were probably going to be telling
6 everybody -- after we told these people that their water
7 wasn't safe, and we had done that like the month before,
8 and talked to a bunch of the residents -- they were now
9 going down to the County Commissioners and say -- well,
10 you know, they were implying that they might change their
11 mind on it.

12 And the County Commissioners were sort of
13 "What is going on? Who do we believe? What makes sense
14 here? First you said it is not good. Now you are saying
15 it is okay. What do we believe?" Which is why you don't
16 do this.

17 So I was operating from a position of, "I
18 don't understand why they would do this." And I wanted
19 to talk to them, but I wasn't able to talk to them. I
20 don't know whether it was -- you know, why I wasn't able
21 to, but I really didn't have the opportunity to do that.

22 And when I went away on leave, they issued the
23 letter. And I heard from Mina while I was on leave some
24 of the reasons why some of them were -- the
25 justifications were in different newspaper articles. And

1 none of them really made any sense to me in terms of
2 scientifically or public health-wise.

3 I read the depositions that had been done in
4 this case that -- the three done before this one. I went
5 into Dr. Shehee and Davies, Randall Williams. I made a
6 lot of comments in Randall's deposition because he was
7 explaining his thinking. So I -- you know, I was able to
8 understand better why he did it. You know, I disagree
9 with the reasons that he gave. He is the boss. And
10 because he is the boss he is entitled to do, you know,
11 that which he decides to do.

12 But it wasn't a consensus agreement. There
13 was no consensus. There was no vetting of information,
14 because he never talked to his technical people in his
15 own Department.

16 I think, you know, the job of the State Health
17 Director is to protect public health. And he states that
18 in his deposition. He also states, fairly, that part of
19 the job of State Health Director is not to unduly alarm
20 people. But in this case, what we do in our work with
21 drinking water, as I explained before, is to remove the
22 alarm.

23 It is actually alarming if you don't tell
24 people that there is something wrong with their water.
25 It is actually more alarming if you tell people that

1 something is wrong with their water and then, you know,
2 you go, "I got to go. I have nothing else to say but
3 your water is a risk. See you later."

4 We remove the alarm. And all of the State
5 Health Directors before us have understood that. We
6 remove the alarm by risk communication with people, by
7 talking to people, by explaining what I have talked about
8 today. You know, if you had a situation where, you know,
9 your job is my job, TO protect public health -- the job
10 of the State Health Director is to protect public health.
11 That is your job.

12 In this case, what happened is that our
13 Department last year worked extremely hard from the top
14 down, everybody involved, to come to consensus, to vet
15 this information to a degree that I have never -- only
16 seen once before. And that was another public issue in
17 Neuse Crossing with Reeder. And we can talk about that
18 later.

19 But we had consensus three or four times last
20 year, until finally a grudging consensus was reached. A
21 decision was reached where both Departments, after
22 screaming, yelling, ranting and raving for four months,
23 finally we got it out -- this information to folks, and
24 communicated with them and went to -- and once we started
25 communicating and helping, everybody worked at it. Duke

1 worked at it, DENR worked at it, we worked at it. We all
2 did our jobs at that point the way we do, you know, what
3 you are supposed to. Everybody did their jobs once we
4 had that agreement. Everybody worked to do it. So we
5 had consensus.

6 But, you know, here we had a situation where I
7 feel -- I honestly feel that we, as a Department, and as
8 -- and as a peon toxicologist at the bottom of the ladder
9 rung, we protect -- our job is to protect public health.
10 AND we did that. But what happened recently is that --
11 you know, the State Health Director's job is to protect
12 public health. And in this specific instance, the
13 opposite occurred. He knowingly told people that their
14 water was safe when we knew it wasn't.

15 And that was alarming to these people, I have
16 heard from a lot of them since this happened. They were
17 alarmed by that, which is also his job not to alarm them.
18 But by doing that and retracting it, which is
19 unprecedented, it was alarming. So his job was to
20 protect health, but he didn't do it. His job was not to
21 alarm people, but he alarmed people. He alarmed us, you
22 know.

23 But at the same time, no matter how I feel
24 about it professionally, it is his right to do it as our
25 boss. And we understood that. But we did everything we

1 could to try to let him know that this was not -- this
2 was not protecting health.

3 Q. I believe you said while you were -- maybe
4 before you left on leave, you had tried to talk with Dr.
5 Williams. And how did you make that effort?

6 A. I just asked my supervisor, I said, you know,
7 "Can you go up the line if maybe before I leave I can go
8 talk to him and maybe -- you know, maybe I can talk him
9 out of it." You know, I mean, I don't know what I was
10 thinking. I just thought that, you know, maybe, if he
11 has a conversation with one of his technical folks, maybe
12 he will, you know, reconsider because ---

13 Q. Did you ever get a response?

14 A. No, not really.

15 Q. Any kind?

16 A. No.

17 Q. Now, I believe you said initially what he told
18 Dr. Shehee was to tell people who had 10 parts per
19 billion or less that it was safe to drink their water --
20 that was the letter he was going to send out?

21 A. I have some notes here. I am not sure. Let
22 me just refer to my notes.

23 (Witness peruses document.)

24 I have three pages of notes on -- the first
25 set of notes is from 1/21/16. The second set of notes is

1 1/25/16. The third set of notes is 2/8/16, about when we
2 first heard about this, and ---

3 Q. Can we make those an exhibit, please?

4 (PLAINTIFF-INTERVENORS EXHIBIT 497
5 WAS MARKED FOR IDENTIFICATION.)

6 And Dr. Rudo, just to shorten the process, if
7 you would just read those and the dates, that would be
8 helpful.

9 A. "1/21/16 - Met with Mina. She told me Dr.
10 Williams, State Health Director, wants us to retract the
11 HREs we did, over 400, for the residents adjacent to the
12 coal ash ponds. I believe this is highly unethical and
13 possibly illegal, and I need some guidance on the
14 legality of this. I told Mina that I cannot and will not
15 do this retraction as it would result in putting
16 residents at an increased cancer risk, in addition to all
17 the ethical and possibly legal problems with this. In 27
18 years working with -- for state government, we have never
19 been asked to retract the more than 150 thousand HREs we
20 have done. It is not right to be asked to do this, and I
21 will not do this."

22 "1/25/16 - Mina is in discussion with our
23 Department about the order to retract the coal ash HREs.
24 She told the Department I will not do this and she will
25 not do this."

1 "2/8/16 - Still discussing Dr. Williams'
2 retracting HREs. Basis for this seems to be that
3 chromium VI is also in public water and bottled water.
4 We have no bottled water data. We still recommended to
5 Mina to not retract. Over 90 percent of the residents
6 adjacent to coal ash ponds with HREs from last year have
7 chromium VI levels over 0.1" -- it should be "ppb." I
8 have "ppm." It should be "ppb" in here -- "and over 70
9 percent are above 0.5 ppb. These people have levels
10 above CR-VI levels in public water in their areas,
11 Salisbury and Belmont at least. What about people with
12 just cobalt" -- a question I asked myself.

13 "Again, not listening, and thus these well
14 water [sic] poses a greater cancer risk than if using
15 public water. Thus, if this is the basis for Williams'
16 retraction, then he is putting residents at an increased
17 cancer risk by retracting the 'don't drink'
18 recommendation. I have advised Mina to recommend to
19 Williams not to do this. It seems that Williams either
20 is not listening or my concerns are not being passed to
21 Williams. I asked for permission to speak to Williams,
22 and this was denied." Well, not really. It was just
23 sort of not -- you know, I didn't hear anything.

24 "They won't let me talk with him, and told me
25 if I do without permission it will go badly for me, could

1 have negative consequences. I also asked for permission
2 to send an e-mail to Mina to send up the chain of
3 command, and thus was again ordered not to do this via
4 e-mail concerning my concerns that they are putting
5 residents at risk with this retraction. Nobody is
6 heeding our health advice on this in our Department. I
7 will keep trying."

8 Then I made a note at the bottom, "If they
9 retract the do not drink recommendation, it is not
10 protective with vulnerable populations. Pregnant women,
11 infants and children under age of 12 are considered
12 vulnerable populations due to increased susceptibility to
13 mutagenic agents during critical developmental life
14 stages." And I think those are my meeting notes with
15 Mina. I had a meeting, apparently, on 2/5. "This is why
16 the retraction is a bad idea. I recommend not doing
17 this," dated 2/8/16.

18 Q. So when did you go on leave and when did you
19 come back?

20 A. I think I went on leave around the 24th of
21 February.

22 Q. And your return?

23 A. Probably the beginning of June.

24 Q. Now, did your going on leave have anything to
25 do with this controversy?

1 MR. BARKLEY: Objection.

2 THE WITNESS: No. I am sorry.

3 MR. HOLLEMAN: That is all I have on that.

4 MR. BARKLEY: Okay.

5 BY MR. HOLLEMAN:

6 Q. Now, are you aware -- well, let me ask you if
7 this is true. If you have read Dr. Williams' deposition,
8 in the course of his deposition he told us that he was
9 re-retracting -- or he was retracting the "Do Drink"
10 letter for people who had 10 parts per billion or more of
11 total chromium. Do you know why, or have you -- first of
12 all, has that happened?

13 A. Well, from what I understand, a letter went
14 out, yes.

15 Q. A letter went out to people?

16 A. Yes.

17 Q. And do you know when it went out?

18 A. Probably shortly after I left for leave.
19 Probably the end of February, around there.

20 Q. And you mean the letter telling people it was
21 okay to drink their water?

22 A. Yes.

23 Q. Okay. Now, during Dr. Williams' deposition,
24 he said he was going to retract that letter -- the "Do
25 Drink" letter. In other words, he was now going to tell

1 people who had 10 parts or more -- 10 parts per billion
2 or more of total chromium, not to drink their water. Do
3 you know if that has happened?

4 A. No. I am not sure if that has happened or
5 not.

6 Q. All right. Were you part of that discussion,
7 or did you know that was going to happen?

8 A. No.

9 Q. Do you know why he made that decision?

10 A. I think they -- they are considering utilizing
11 the total chromium 2L Standard for hexavalent chromium.
12 And, really, there is no basis for doing that, but that
13 is what they are considering. It would go against what
14 the 2L Rules say.

15 Q. Have they -- has anyone at the Department or
16 at DEQ asked for your views on whether they should use --
17 whether North Carolina should use the 10 parts per
18 billion standard for hexavalent chromium?

19 MS. LeVEAUX: Objection.

20 THE WITNESS: Well, it hasn't -- to my
21 knowledge, thus far, since I have been back, it has not
22 been put forward as an IMAC request. So, you know, it
23 has not been done. Nothing is going on with that right
24 now. If it does go forward as an IMAC request, we will
25 comment on it as part of the process.

1 BY MR. HOLLEMAN:

2 Q. But since you have returned, have you had any
3 communications about changing the hexavalent chromium
4 Health Screening Level?

5 A. No. We are actually in this really
6 uncomfortable position. We are in limbo because we have
7 no guidance from our Department right now on how they
8 want us to handle the well situations for hexavalent
9 chromium. I have been told to not tell people to not
10 drink their water if it is over .07, which is still, as
11 of today, the number that we are using. That hasn't
12 changed because we haven't seen an IMAC request. An IMAC
13 request should reflect the 2L Rules. And if it does,
14 then using 10 would not be done according to the law, you
15 know. I guess exceptions can be made.

16 But we don't know what to tell people right
17 now. And I have never been in this position before. We
18 have -- we are not allowed to tell people not to drink
19 their water. We are not supposed to tell people it is
20 okay to drink their water. All we are supposed to do
21 right now is tell people, "Well, there is risk."

22 It is the alarming situation that we wanted to
23 avoid, and we have tried to avoid for 30 years. We have
24 now been put in that situation. We are now -- we are now
25 alarming people.

1 Q. Who has told you not to tell residents not to
2 drink their water?

3 A. I have been told by Dr. Shehee that -- she has
4 got guidance from the Department -- not to -- not to tell
5 people with hexavalent chromium and vanadium to not drink
6 their water if it exceeds the numbers we have been using,
7 which are the existing numbers. So we are -- we are
8 alarming people now. That is just -- it is nuts. It is
9 crazy. Now, we have asked for guidance in from our
10 Department and we still don't have it.

11 Q. The "Do Drink" letter that went out earlier in
12 2016, it promised an updated Health Advisory Form from
13 HHS. Do you remember that?

14 A. I don't -- I am not sure if it did or not.

15 Q. Okay. Do you know whether one went out, or do
16 you know -- do you know anything about that?

17 A. I know that we -- that the Department
18 apparently decided not to send out a new HRE form, and
19 that Mina and Dr. Davies recommended against doing that.
20 I don't think they did that. I just think they sent out
21 the letter.

22 Q. Have you had any discussion or meetings with
23 Dr. Williams since you have returned from leave?

24 A. No.

25 Q. Has he asked to meet with you?

1 A. No.

2 Q. Do you have some more notes that you brought
3 today?

4 A. Well, I mean, these (indicating) are all
5 documents and e-mails. And, you know, I have my comments
6 from Dr. Williams' deposition -- just some -- you know, a
7 few Steno Daily notes from my daily notes that I take. I
8 think we have covered most of those things.

9 Q. Do you mind if I look at it?

10 MR. LONG: Frank, while you do that, can
11 we go off the record?

12 MR. HOLLEMAN: Sure.

13 (THE PROCEEDINGS WERE RECESSED AT 12:59 P.M.

14 TO RECONVENE AT 2:15 P.M. THIS SAME DAY.)

F U R T H E R P R O C E E D I N G SD I R E C T E X A M I N A T I O N 2:11 P.M.

(RESUMED)

BY MR. HOLLEMAN:

Q. So before lunch we talked a lot about hexavalent chromium, so let me come back to that again. Did you ever talk with either of the two Secretaries at HHS who served in 2015 and 2016 about the issue of the coal ash wells or hexavalent chromium?

A. No, sir.

Q. Now, I did talk mostly about hexavalent chromium. Let me ask you about vanadium. Were you involved at all in developing -- well, let me back up a minute. As I understand it there is a -- there is an IMAC for vanadium of 0.3 parts per billion; is that correct?

A. Yes.

Q. And were you involved in developing that?

A. No.

Q. Now, what was your involvement with the vanadium issue for these wells near coal ash sites?

A. Okay. I am trying to figure out how to explain this. When we first encountered -- I guess in 2014, when we had those original well samples that had hexavalent chromium and vanadium in there, we realized we

1 didn't really have standards. We felt we needed to have
2 standards. I think we knew we had an IMAC of .3, but
3 when -- as part of our agreement with DENR is we have the
4 Division of Waste Management and Health Risk Assessment
5 folks do the calculation, and they do it according to 2L
6 Rules. I think one of the requirements is to use a
7 current EPA IRIS value for a chemical. And that is what
8 they base it on. So they did a calculation for that and
9 they came back with a value of 18 parts per billion.

10 Q. And who is "they"?

11 A. That would have been Hanna Assefa and Dave
12 Lilly.

13 Q. At DEQ?

14 A. At DEQ.

15 Q. DEQ/Waste Management?

16 A. Yes, Division of Waste Management. We -- you
17 know, we looked at -- you know, double checked the EPA
18 reference dose. So that was what they based it on. And
19 I think it was in several -- I think there was only a few
20 well samples that we had in, so we were using that. And
21 then, when we were invited in in January or December --
22 whenever we got the letter from Jay Zimmerman asking for
23 our assistance with the larger issue under the CAMA Rule,
24 we went back and took a deeper, harder look at the
25 vanadium science.

1 Connie Brower from DEQ brought up the fact
2 that there was an existing IMAC. And they really -- as
3 part of our debate that we were having with the other
4 Department, and discussions and arguments and all that,
5 she felt that we should be using existing IMACs if there
6 was one; we shouldn't be recalculating numbers. Because
7 we didn't have one for hexavalent, but we did have one
8 for vanadium.

9 So I went back and did a pretty thorough
10 reading of the literature -- peer reviewed published
11 literature. There were two reference doses. One came
12 from -- basically one came from IRIS, another one came
13 from another EPA document dated 2009. It was a PPRV
14 document.

15 And when I went back and read some of the
16 studies, some of the studies were really old, going back
17 into the 50's, 1970. And when I broke down the studies,
18 they seemed to have some flaws in them, some weaknesses.
19 I was looking for more current studies. There really
20 wasn't a whole lot.

21 But there was a study, I think -- a 1996 study
22 by Bosco Ovidall (phonetic). And it was probably the
23 best paper I thought that we could use scientifically. I
24 think the statistics were better in there and the
25 approach was better. And that was the one that resulted

1 in the reference dose that it turned out that Connie used
2 to calculate the IMAC. So we -- when we moved forward,
3 we, you know, started using the .3 because we felt it was
4 a more appropriate study.

5 Q. Has there been any discussion since about
6 changing the vanadium level?

7 A. Well, not with us, but I think, you know, we
8 have heard rumblings from DENR and the top of our
9 Department about using 20 parts per billion, which they
10 would be, I think, taking 18 and rounding it up, which is
11 -- we have some thoughts on that, too. That is not ---

12 Q. What are your thoughts on 20 for vanadium?

13 A. Well, I mean, it is 18 ---

14 Q. Eighteen, right.

15 A. --- would have been the calculated number.

16 But you don't really -- we don't really round like that,
17 you know. If it is 18.4 or 18.6, you might want to round
18 up or down. But generally, we don't round 18 to 20. The
19 toxicity issues surrounding vanadium -- you know, we
20 actually decided to use a hazard quotient approach, where
21 if the hazard quotient exceeds 1, then above there, there
22 is non-cancer risk.

23 And I think we calculated a number for a
24 hazard quotient of 1 -- and this is where my notes would
25 probably help. They are on the other side of the table.

1 That is all right. That is all right. I think I got it.
2 But I brought them in for this kind of purpose.

3 But I think we calculated a number around 2.4
4 would have a hazard quotient of 1. But in terms of
5 comparing concern levels of toxicity between hexavalent
6 chromium and vanadium, it is not even close. I mean, our
7 concern is mostly centered around hexavalent chromium,
8 because it is a mutagenic carcinogen, and a potent
9 carcinogen, in and of itself. And it is what you would
10 consider to be -- likely to be a human carcinogen by the
11 oral route.

12 So our concern level was much greater than
13 that. And in almost every instance, you know, they are
14 sort of found together in a lot of the wells. There are
15 some exceptions, though.

16 (Pause.)

17 Q. You testified earlier about the events in
18 early April, and later in April in 2015. Could you -- if
19 you could -- starting with your notes on April 3rd, if
20 you could read the entries in that relate to this -- to
21 the issue of the wells near coal ash sites with -- and
22 provide the court reporter the dates as you read it.

23 A. From 4/3 to 4/11/15 ---

24 Q. Well, first of all, what you are reading --
25 are those your notes that you made at the time of what

1 happened on those particular days?

2 A. Yes.

3 Q. And they are in your handwriting?

4 A. Yes.

5 Q. Okay, go ahead.

6 A. "Worked on continued coal ash issues through
7 this period because even after we finished the drinking
8 water evaluations and sent them to DENR, Eric Smith and
9 Debra Watts, Ms. Watts had problems with our work, and
10 continues to interfere and obstruct our work. Very
11 unprofessional conduct. Ms. Watts, Connie Brower have
12 held up our getting these drinking water evaluations to
13 the residents for almost 45 days since we started
14 receiving them from DENR around the beginning of March
15 2015."

16 Let's see.

17 (Witness peruses document.)

18 "4/13 and 4/15/15 - spoke with Mina about the
19 coal ash evaluations finally. They have agreed to send
20 them out 44 days after we received the results." Let's
21 see. And this was another -- 4/16/15, we had another
22 site where we had hexavalent chromium that wasn't related
23 to what we were doing.

24 (Witness peruses document.)

25 Okay. This would have been from 4/16: "Mina

1 sent me the updated HRE form with the change ordered by
2 the Governor's Office. The statement is not factual,
3 accurate or true for most of the HREs, because it states
4 that all of the results do not exceed Safe Water Drinking
5 Act criteria. In fact, results of well water results for
6 lead, iron and manganese do exceed this criteria, and the
7 vanadium and chromium VI results do not have a Safe Water
8 Drinking Act criteria.

9 "The HREs with this incorrect statement were
10 transcribed by Kennedy from my original HREs given to
11 DENR on 4/2/15, and sent to DENR yesterday, 4/15/15,
12 while I was returning from vacation. I sent an e-mail to
13 Mina pointing this problem out and recommending changing
14 'would' to 'may,' thus fixing this inaccuracy. I also
15 recommended letting Megan Davies know about this so they
16 could fix this if they choose. It should be fixed before
17 I send out any more HREs under my pen. We will see.

18 "In addition, in the DENR cover letter, they
19 refuse to remove 'statistical' when discussing how we
20 calculate standards. We have been requesting this change
21 for over three weeks as it is not a true or accurate
22 description. They know this is the case, and we have
23 pointed this out clearly and concisely to DENR and the
24 Governor's Press Secretary on 4/2/15 meeting in the
25 Governor's Office I was told to attend. Neither party

1 listened to and corrected this incorrect statement."

2 Q. So could we make -- if you could pull those
3 pages out and we can just make those an exhibit, please.

4 (Witness complies.)

5 (PLAINTIFF-INTERVENORS EXHIBIT 498

6 WAS MARKED FOR IDENTIFICATION.)

7 And so what has been marked as Exhibit 498 are
8 your notes that you just read into the record, is that
9 correct?

10 A. Yes.

11 Q. And if you could read the entries for 3/13 and
12 3/15, please.

13 A. "3/13/15 - Received official verbal and
14 written permission to begin HREs for coal ash pond well
15 water sample results from Mina Shehee and Megan Davies.
16 Evaluated 18 coal ash pond well water sample results and
17 sent to Eric Smith at DENR. We have received 49 coded
18 sample results with 33 needing re-sampling for chromium
19 VI at lower detection limits, Pace or Element One, and
20 for other inorganic -- inorganics.

21 "Prepared 19 HREs, (18 coded samples, one C4
22 has 2 well sampled) to Eric Smith via fax. Will hold
23 until at least Monday afternoon. Came back into office
24 after getting home to send the HRE form to Mina to make
25 changes decided on by DENR to the DHHS form. In office

1 until 9:00 p.m."

2 That was what you had the e-mail earlier
3 about. As it turned out, the fax did not work. That is
4 why I was going to take them over personally. And then
5 we were -- you know, then we were told not to do it. And
6 I had to come back to the office and make changes, so I
7 was there until 9:00 p.m.

8 "3/15/15 - In office for 15 hours. Reviewed
9 updated HRE form and sent Mina an e-mail removing my name
10 from the form because of DENR's insistence of adding an
11 MCL statement that implies 100 ppb of total chromium,
12 which includes chromium VI, is considered safe. This is
13 a scientifically untrue human health statement. Thus,
14 from a moral and ethical standpoint, I have removed my
15 name from the HRE form, and I cannot ever tell people an
16 MCL for total chromium with 100 ppb is considered safe.
17 It is not safe."

18 Q. thank you. Could you remove those pages so
19 they can be made an exhibit, please?

20 (Witness complies.)

21 (PLAINTIFF-INTERVENORS EXHIBIT 499
22 WAS MARKED FOR IDENTIFICATION.)

23 MS. LeVEAUX: Can we go off the record for a
24 minute?

25 MR. HOLLEMAN: Sure.

1 MR. HOLLEMAN: OFF THE RECORD. 2:27 P.M.

2 (DISCUSSION OFF THE RECORD.)

3 MR. HOLLEMAN: ON THE RECORD. 2:29 P.M.

4 BY MR. HOLLEMAN:

5 Q. And let's just get this on the record. What
6 has been marked 499 are the notes you made at the time of
7 the events, as they occurred, that you have just read
8 into the record; is that right?

9 A. Yes.

10 Q. Thank you.

11 (Pause.)

12 Why don't we do this, make the remainder of
13 these an exhibit. And I will ask you about a couple of
14 pages of them.

15 (PLAINTIFF-INTERVENORS EXHIBIT 500

16 WAS MARKED FOR IDENTIFICATION.)

17 And, Dr. Rudo, what has been marked Exhibit
18 500, are these the remaining pages of your notes of daily
19 activities that you brought today?

20 A. Yes.

21 Q. And if you could, if you could please start
22 with this 4/16/15 entry and read into the record, with
23 the date, anything that pertains to these issues, please.

24 A. "4/16/15 - Met with Mina about coal ash
25 evaluation. Will get remaining evaluations when new form

1 finalized. Make copies and give to DENR by tomorrow
2 P.M."

3 Same day, "Anthony Harden, 4 phone calls, AL
4 118, 704/825-5844. He called Debra Watts and she said
5 they would not resample his mother's well. He has to go
6 through the County Health Department or pay himself. It
7 was AL 118 and AL 9. Met with PNPR coal ash well
8 testing. Communication, especially with Health
9 Department and Counties. Alex, DHHS PR Office, wants
10 number for coal ash well testing and justification of
11 chromium VI re-sampling. Put together data for her, and
12 Mina reviewed the data."

13 "Hanna Assefa - we have new information from
14 ATSDR to review for vanadium (a carcinogen). She will
15 remove the recommended value from our table until we
16 reevaluate the literature. We do have an existing IMAC
17 for vanadium of 0.3 ppb that we have been told by
18 management to use for now."

19 "Eric Smith, 807-6407, told him to please send
20 phone numbers of any coal ash well sample residents whom
21 Duke Energy will not retest for chromium VI. This list
22 consists of 43 homes thus far. Eric said he will send me
23 the phone numbers after DENR makes a final decision, or
24 if they will resample or not."

25 "Told to send HREs out (new ones) with

1 incorrect statement - Megan Davies. I asked to have it
2 taken out and was told no."

3 "4/25-26/15 - Megan Davies called Governor's
4 Office. Wanted to know about molybdenum" -- oh, sorry, I
5 am reading this wrong. "Megan Davies called. The
6 Governor's Office wanted to know about molybdenum,
7 strontium and sodium health issues. Asked her to remove
8 wording she was ordered to put in HRE form that confuses
9 people, and incorrect factually. She said she will try
10 and not to send any more HREs until then."

11 "Reviewed the literature for strontium,
12 molybdenum for 4 hours."

13 "4/27/15 - Mina -- told Mina public well
14 results are not being sent out by DENR to residents - Tom
15 Reeder's orders - we sent them to DENR starting on 4/15
16 and they have not been sent out by DENR. Now Reeder says
17 County Health Directors will need to send these out."

18 "6/24/15 - 6/26/15 - Meeting with Mina - 2
19 standards for private wells." Let's see where I am at
20 here. "I registered my concerns and objections to having
21 one health protective set of drinking water standards and
22 one set of non-health based standards for North Carolina
23 citizens. We should be ethically only using the more
24 health protective based standards. Will follow-up next
25 week with e-mail after I make a plea with Dr. Davies not

1 to do this."

2 Q. Thank you.

3 A. And that last thing was, we use -- we have two
4 laws. One law says to use MCLs for private wells -- for
5 new private wells, and the other law is the CAMA Law that
6 says to use the Health Protective Standards. So that is
7 what that was.

8 Q. Among the materials that you brought are these
9 three pages. And they had clipped to them these e-mails.
10 Are the e-mails related to that document, or are they ---

11 A. Let's see what the dates are.

12 (Witness peruses document.)

13 Yes. This was -- so, yes.

14 Q. Keep those together if you would, please, sir,
15 and can we make that stack an exhibit.

16 (PLAINTIFF-INTERVENORS EXHIBIT 501
17 WAS MARKED FOR IDENTIFICATION.)

18 I guess that is 500?

19 COURT REPORTER: And 1.

20 MR. HOLLEMAN: And 1? 501.

21 BY MR. HOLLEMAN:

22 Q. And could you tell us, please, what Exhibit
23 501 is?

24 A. At some point in time, probably towards the
25 end of April -- so much was going on. There was so much

1 interaction between the departments, and so many of the
2 issues that we have been talking about today, that I
3 think Dr. Davies wanted a -- I think she had -- she was
4 requested by, I guess, people above her in the Department
5 for a time line of when this all started to that point in
6 time, so that she could, I guess, go over it with the
7 folks above her in our Department.

8 Q. And so what is -- are the first three pages a
9 time line you prepared?

10 A. I -- we contributed to it. I think we were --
11 I think Mina probably asked Sandy and I to look at what
12 -- she probably took a first stab at it, based on her
13 notes, and then we added information based on our notes.
14 We tried to make it as -- you know, it is not detailed
15 because it is a timeline, it was this day in general.

16 Q. So this is a timeline that was put together by
17 Dr. Shehee, Sandy Mort and you together?

18 A. It was either the three of us or it could have
19 been -- it says "prepared by Megan Davies." We may have
20 supplied her with all of this information. She may have
21 done it. I just remember there was a time line that was
22 put together to help explain, because there was just so
23 much going on and it was such a mess, that, you know, I
24 think this was an easier way for the folks above us to
25 see what was going on.

1 Q. And what are the attached materials, or how do
2 they relate to the time line?

3 A. I think that these were probably just e-mails
4 that we gave. They were e-mails from all -- from both
5 Dr. Davies, Mina and myself -- probably Sandy, you know,
6 through some of the -- you know, the movement of e-mails.
7 There is some from DENR that were in our -- you know, as
8 we were answering each other. So I think -- but it
9 covers a lot of what was going on between this time and
10 the end of April.

11 So, you know, it is more for -- you know, I
12 think, for our Department to look at. I think it is
13 probably, you know, just as -- probably will help you all
14 make sense out of what occurred on what dates, because I
15 am doing things from memories and, you know, partially
16 some stuff here. So I think that is probably the gist of
17 that.

18 Q. Could I see it, please, sir?

19 A. Sure.

20 (Document handed to counsel.)

21 Q. Thank you. When we see in the documents a
22 reference to OEEB, that is your working group; is that
23 correct?

24 A. Yes, yes.

25 Q. Attached here is an e-mail from Jay Zimmerman

1 in February of 2015, where he clarifies that he, quote,
2 "understands that DPH will propose an IMAC for hexavalent
3 chromium of .07 parts per billion." Do you -- was there
4 ever an effort to propose an actual IMAC rather than a --
5 or in addition to a Health Screening Level?

6 A. I think this is -- this is -- this goes back
7 to what we were talking about this morning, you know. We
8 would do something, DENR would agree to it and say
9 "okay," and then Tom Reeder would go "No." And then we
10 would be back to square one. And I think that was an
11 example. We had calculated our .07. I think we took
12 that as -- I have to look at the e-mail, but ---

13 Q. Sure.

14 A. Let me look at the e-mail ---

15 Q. Sure.

16 A. --- rather than speculate.

17 Q. I am showing you an e-mail dated February 4,
18 2015, from Mr. Jay Zimmerman. And you are one of the
19 people copied on it. Wait. Let me correct that. No, I
20 don't think you are copied on this e-mail, but if you
21 could look at it and see if you remember it?

22 (Witness peruses document.)

23 A. Okay. This is -- I mean, this was two days
24 before the first of the two big meetings. This was the
25 February meeting. But this is sort of what we were

1 talking about. And this is -- I think this is what vexed
2 our Department, you know, and everybody in it, that we
3 would work with DENR on something and have discussions.
4 And then, for example -- then we would get an e-mail from
5 Jay essentially saying, "Make it clear that I am
6 recommending adoption of that value at this point." In
7 other words, agreeing to the IMAC that we were
8 recommending.

9 You know, we would still want our staff to
10 look over available information, but he was accepting it.
11 Then two days later we had a large meeting with
12 everybody, and everybody -- and they threw that out, and
13 they were -- they wanted to go back to using total
14 chromium. And they didn't want us to calculate -- so
15 this is what we were dealing with.

16 And it was just over and over again. Just --
17 on every issue, it just -- on the documents we were
18 using, the HRE forms, the communication, Risk
19 Communication approach, the calculation of standards.
20 You know, we would do it, and then we would seem to have
21 agreement with them. And then Tom Reeder would interfere
22 and we would be back to where we were starting from.

23 So it was just -- I think that is -- goes back
24 to what I said this morning about -- I think at some
25 point my -- you know, my Department just got worn out and

1 worn down by this constant, you know, "We agree," then
2 pulling back the agreement, you know. And we were just
3 wait -- and we were sitting on sample results for, you
4 know, unacceptable lengths of time that we needed to get
5 done. And that is a lot of what was going on here.

6 Q. And what I failed to point out is this is part
7 of an e-mail chain. And there is an earlier e-mail dated
8 January 28, 2015 from Dr. Shehee to Mr. Zimmerman, in
9 which you are copied, which speaks of an IMAC for
10 hexavalent chromium. Do you remember that e-mail?

11 A. Yes.

12 Q. Thank you. You also brought a copy of Dr.
13 Williams' deposition that you have made notes on, is that
14 correct?

15 A. Yes.

16 Q. And could you look at page 97 of that document
17 and tell us what your notes mean?

18 (Witness peruses document.)

19 A. I have to go back to 96 to put 97 together.

20 Q. Sure.

21 A. I think you were asking a question to Randall,
22 "Were you aware that -- did Dr. Shehee object to sending
23 out the 'do drink' letter before it was sent out?" And
24 Randall answered, "Not after February 23rd. But before
25 that, she would have been like the rest of us who were

1 waiting for the data."

2 We were not waiting for any data. We -- we
3 didn't need to see any data from Tom Reeder. We -- you
4 know, the principle of our objection was that it was --
5 it was a bad idea, you know. It was just -- we had
6 already told these folks they were at risk. We had the
7 science to show that they were at risk. This had nothing
8 to do with any additional information that would have
9 come from DENR, because -- and this is one of the things
10 that if he had spoken to us, we could have explained it.

11 Our issue is not the background sample
12 results. Our issue is not did Duke do it or not. We --
13 it is not what is in public water. You know, our issue
14 is we -- we don't have a dog in what is going on between
15 DENR and you, or DENR and Duke, or you and Duke. We are
16 not concerned with that.

17 Our concern is protecting health of the
18 residents no matter where it comes from, whether it is
19 background, whether it is from a public water source,
20 whether it is from -- you know, naturally occurring,
21 whether it is from a human source. It doesn't matter.
22 You know, we are just concerned with protecting those
23 folks.

24 And that is something that we did -- you know,
25 I talked to Mina about making that distinction in January

1 and February, you know, with Randall, and relaying it up
2 the line, so it was. You know, we made it clear that,
3 you know, we weren't waiting for anything. Now, if
4 Randall wanted to wait, that is fine. I mean, that is
5 his -- he is the boss. And if wanted to make his
6 decision based on Reeder telling him, "Well, you ought to
7 be able to make -- you ought to make your decision based
8 on the Public Water data or the background data," you
9 know, then if wants to do that, he can do it.

10 But we weren't going to do that. That is not
11 what our concern was. So I think that is what is the
12 difference here, you know. And also the fact that the
13 context is that there was no consensus in our Department,
14 you know, at least from the standpoint of the technical
15 people at my lower level and Dr. Shehee and Dr. Davies.
16 I can't speak for Danny Staley, I can't speak for Chris
17 Hoke, I can't speak for the head of our Department. But
18 consensus should have been centered around Dr. Davies and
19 Dr. Shehee because they were the most technically
20 involved and intimately involved with the issue.

21 So that is the one context. The other context
22 is he -- I think he is saying, if I am reading this
23 correctly, and I had to go over this several times --
24 that they were -- if there wasn't an objection to
25 anything during that meeting, it would have been -- and I

1 have talked to Dr. Shehee about this -- it would have
2 been about the letter itself. I mean, the decision was
3 already made by Randall to send it out. And there is
4 just -- I mean, my document -- my records state that
5 clearly. And I don't think any -- I don't think Dr.
6 Shehee disagrees with that.

7 It was his decision. And that is okay. He is
8 State Health Director. You know, we didn't think it was
9 a good decision. It didn't protect health. We wanted
10 him to understand that, and hopefully follow the path for
11 protecting health, which he did not do.

12 However, this context is, you know, probably
13 from what I am hearing was did they disagree with the
14 letter? And Mina would be -- it is more of a context of,
15 you know, they were going to send it out. I think they
16 had reached a final version of the letter. I think
17 nobody was disagreeing with the wording of that letter.
18 The decision had already been made on his own.

19 So -- and I think -- you have to understand
20 state government bosses and things like that. We don't
21 want to be insubordinate toward our bosses. And a lot of
22 times -- and I have learned this over the years -- is
23 that when you are in a meeting and a decision has been
24 made, and you have already -- you already disagree with
25 it, and you have made your disagreements clear during the

1 period of time when you were allowed to do that to your
2 superiors -- you know, when the decision has been made,
3 if you argue any more, you are being insubordinate.

4 And that -- that is my reading from this.
5 They weren't going to dispute in this February 23rd or
6 24th meeting the decision that had already been made,
7 because it had already been made. They weren't going to
8 change it. And he wasn't asking them if they agreed with
9 the decision; he was just asking them, according to Mina,
10 of whether they agreed with the letter.

11 And they agreed with the letter, because they
12 had been working on it. Because the decision had been
13 made, they worked on the letter to make it work the way
14 that -- you know, so it makes sense. So I think that is
15 -- you know, I think his context is different because he
16 is the boss. And he might have looked at it one way,
17 fairly, you know.

18 And the other way is that, you know, the
19 people that are under him and subordinate to him knew the
20 decision had already been made, so they weren't going to
21 argue with him. I think that is my take from this.

22 Q. While you have got that in front of you, could
23 you just turn to page 117 and explain your comments on
24 page 117, please.

25 A. 117?

1 Q. 117, please.

2 A. The question was, "And you think the fact that
3 someone else hasn't done it is a reason for you not to do
4 it?" Mr. Robbins: "Objection." The Witness:
5 "Absolutely. We always look at what our peers do." No,
6 we don't. That is not true. Not always. It is an
7 absolute statement.

8 Q. Right.

9 A. There are times when it is appropriate to
10 start ringing up some of our toxicology colleagues in
11 other states and at EPA and at ATSDR and run things by
12 them. We do it all the time for lots of different
13 things. But it is not a universal "we always do it."

14 You know, the context here is that, you know,
15 a lot of times our department will say, "Well, what is
16 everybody else doing?" A very fair thing for our
17 Department to ask. And we will go out and find out.
18 But most states do not have toxicologists that are
19 actively involved in risk assessment, setting their own
20 standards, you know. There are some states that do, but
21 most states will just default to what EPA is doing. And
22 we don't do that.

23 You know, we have had enough interaction with
24 EPA over the years that sometimes we disagree with them,
25 sometimes they disagree with us. And we talk, we work it

1 out. They will come down to see us, we will come up to
2 see them. We will have one of our fast track meetings.

3 But, you know, there is always a discussion
4 about science with other scientists. But seeing what
5 everybody else is doing for standards and things like
6 that is -- sometimes it is -- you know, it is a good
7 thing to do. Sometimes there is no point in doing it.

8 In this case, you know, just like we really
9 hadn't done very much with hexavalent chromium VI, we
10 knew not a lot of other states had done that -- hadn't
11 looked at the literature, hadn't tried to calculate
12 things. And, you know, that is what this reflected. But
13 to hold that as, you know, "Well, all the other states --
14 or most of the other states were using, you know, other
15 things, EPA" -- it is just -- you know, it is not
16 something I would agree with.

17 Q. And if you could look at page 102 and explain
18 those comments, please.

19 (Witness peruses document.)

20 A. All right. 102 has got to start at the bottom
21 of 101 where you are asking about "water in the wells of
22 these well owners is as safe to drink as water in most
23 cities and towns across North Carolina?" And you say, "I
24 am asking North Carolina first, because that is what it
25 says." And the response was, "Again, based on our level

1 .07 that the -- if you look at the baseline level that I
2 am familiar with and that DEQ provided, that that level
3 in many of the -- in most cities and towns is similar.
4 Now, there is a cohort over 10 the we have now adjusted
5 to, that we have evolved to change that. But for the
6 other ones, I would argue that that is true."

7 You know, he said he really didn't look at the
8 data, just looked at a couple of cities. So he really
9 can't say that in most cities and towns it is similar.
10 It is just not true, because if you don't look at it, you
11 can't -- you don't really know. Also, the data is -- as
12 far as I am concerned, what Reeder provided to Randall
13 was worthless. It was worthless data.

14 Q. And why is that?

15 A. Well, when we are looking at data that talks
16 about sample results for public water, other water
17 systems, an individual -- you know, you are -- we base it
18 on -- we need to see that data. We need to see, you
19 know, the raw data, the lab data. We need to know that
20 if somebody is putting a bunch of numbers on a page, we
21 need to look at the raw data to make sure it is right.
22 And with everything that had gone on with Reeder
23 previously, you know, we didn't trust him. You know, I
24 don't -- I don't trust him.

25 I have seen it. And I think a lot of people

1 in my Department, by April of 2015, were frustrated and
2 angry with him because of all the times that he had -- he
3 had double crossed those guys. We would agree, then he
4 would go back on it. And at first, my Department was,
5 like, "Well, we need to work with him. Let's continue to
6 work," in February and March. In April, they were, like,
7 "Well, we can't trust this guy," you know. And that is
8 how it was.

9 So obviously, if he is going to give us
10 numbers on a page, we would need a little more than the
11 numbers on the page to know that that data is correct,
12 number one. But, you know, still, if you are going to
13 look at that and use that data, you still need to review
14 it and, you know, know what it says. And Randall said
15 previously that he really didn't look at it, for the most
16 part.

17 Q. And then if you could look at page 129?

18 (Witness peruses document.)

19 A. Okay. Well, he is answering at the bottom of
20 page 128 a question you started on page 127, where you
21 said you were new -- I guess this is still you. I don't
22 know whether it was Mr. Robbins or not. "You were new to
23 the issue of hexavalent chromium, you were new to
24 administering a public drinking water related agency, did
25 you consider whether you should pause in sending this

1 letter out when Dr. Davies objected to the very first
2 sentence?" He said no because "Danny and Chris were
3 involved with this every step of the way, as was Megan
4 and Mina. I took under advisement, as did Chris and
5 Danny, their advice.

6 "As I pointed out before, I make a distinction
7 between the policy and the letter. And so if the concern
8 is that the letter was written by many different people
9 or had input by many different people, and so different
10 people's input got diminished or changed, I understand
11 that. That is the process, when you have got a letter
12 coming out two different departments and two different
13 levels."

14 "But to me" -- this is the bottom of 128, that
15 leads to what you were asking -- "But to me, the most
16 important thing is the policy -- not the communication as
17 much as the policy. The communication is important, but
18 to me it is the science behind the policy that is
19 important. And for that I leaned very heavily on Danny
20 and Chris."

21 So my -- my point that I make here is that
22 when he says it is the science behind the policy that is
23 important, he ignored the science completely, because he
24 never spoke to us. And Danny and Chris -- Danny Stanley
25 and Chris Hoke, if they need to find out about the

1 science, they are going to go to Dr. Davies and Dr.
2 Shehee. And then they are going to come and have Sandy
3 Mort and I, or just me, or Kennedy and myself give them
4 the science, and then it just goes back up the line
5 again. And so Danny and Chris would have leaned on their
6 technical people. And Mina and Megan -- you know, and we
7 have worked with Chris Hoke for over 20 years, and that
8 is how Chris works.

9 So, in essence, he ignored the science because
10 he never got the science because he never asked for the
11 science. So when he says, you know, he leaned heavily --
12 he may have leaned very heavily on Danny and Chris, but
13 not for the science, because Danny and Chris had written
14 -- you know, they had okayed the science that we were
15 using the year before. They were the ones who were
16 involved in making the decision to go forward with the
17 things that we were using, to say "do not drink" to the
18 residents. They are the ones who, you know, essentially
19 told Megan and Mina, probably from direction from above
20 them, to go ahead and send out the HREs with the "do not
21 drink."

22 So they -- they had vetted the science through
23 us. We met with them. We explained -- we had a meeting
24 where we explained the science. And that was the meeting
25 where they expressed to us the fact that they were very

1 frustrated with Reeder and what he had done, that they
2 felt that he was hard to trust going forward. So the
3 science was ignored in this decision, or the science was
4 -- it was -- some of the science was ignored, and other
5 science was science that Dr. Williams -- that Randall
6 picked to make his case, like the Linos study.

7 Q. Could I see the transcript back?

8 (Document handed to counsel.)

9 So if we can make that an exhibit as well.

10 (PLAINTIFF-INTERVENORS EXHIBIT 502

11 WAS MARKED FOR IDENTIFICATION.)

12 So is Exhibit 502 the transcript of Dr.
13 Williams' deposition ---

14 A. (Interposing) This is my only copy, so I
15 would like to get that back.

16 Q. Yes. Let me start over again. Is Exhibit 502
17 your copy of the transcript of Dr. Williams' deposition
18 with your notes on it?

19 A. Yes.

20 Q. And that is the document that you were just
21 testifying from?

22 A. Yes.

23 Q. Do you remember, in August of 2015, a request
24 from the Secretary of HHS to do a cancer study? Were you
25 involved in that?

1 A. No, I wouldn't be.

2 Q. If we can mark that as an Exhibit, please.

3 (PLAINTIFF-INTERVENORS EXHIBIT 503
4 WAS MARKED FOR IDENTIFICATION.)

5 And what I am showing you now is an e-mail
6 dated February 4th, 2015, from Sandy Mort to you and
7 other people about arsenic in fish. Do you remember that
8 e-mail?

9 A. Yes.

10 Q. What is this about?

11 A. We were -- we have to go back to 2014, when
12 they had the spill in the Dan River. And originally, we
13 put an advisory on the river with a recommendation to not
14 use it at all initially while we were trying to collect
15 data on the coal ash, the levels of the metals that were
16 in the river -- in the North Carolina part of the Dan
17 River.

18 And as part of that recommendation, it was
19 also a recommendation to not consume any fish from the
20 river, because we had no data. And we were really
21 working from THE standpoint of -- we were concerned
22 because of the amount of coal ash. We weren't -- we were
23 getting, I guess, conflicting information about, you
24 know, where it was going, how fast it was moving or not
25 moving, where it was accumulating. And so we were making

1 decisions to make sure we were keeping people from
2 exposure initially.

3 And then, as time went on, and we lifted the
4 recommendation on general use of the Dan River in North
5 Carolina, we still had recommendations on consuming fish,
6 because we had started to collect fish tissue data from
7 the river for various species of fish. And we started to
8 find some measurable levels of arsenic, which we really
9 generally don't see in fish from previous work that we
10 have done.

11 So we were working with the Virginia
12 toxicologists to see what kind of levels they were going
13 to recommend for arsenic levels in fish that we would use
14 to maybe not recommend people consuming fish. We were
15 trying to make decisions based on the scientific
16 literature on whether we should have recommendations for
17 -- separate recommendations for women of 15 to 44,
18 pregnancy age, or young children, and separate that from
19 everybody else for consumption of fish. So we were -- we
20 were doing our due diligence, collecting scientific data,
21 reviewing the science, trying to determine what kind of
22 levels would be safe for people to consume fish that
23 might have some arsenic in it.

24 MR. HOLLEMAN: And the number of that exhibit
25 is ---

1 COURT REPORTER: 503.

2 THE WITNESS: 503.

3 BY MR. HOLLEMAN:

4 Q. 503. What was the outcome of that?

5 A. I believe we -- we set a level in fish for
6 North Carolina. I don't remember if it was the same as
7 what Virginia was using or not. And -- but we are still
8 continuing to look at fish tissue data in the river.

9 Q. And what is Lev 1 [sic]?

10 A. What is that?

11 Q. I am sorry, I didn't understand. You said a
12 "something" for fish?

13 A. An arsenic level in fish that would be, you
14 know, a level above which we would recommend no
15 consumption.

16 Q. These are handwritten notes you brought. And
17 if you could look at the entry opposite page 174 and 173,
18 and tell us what the page number refer to and what the
19 note says.

20 (Witness peruses document.)

21 A. Well, this is from the deposition.

22 Q. Oh, it is from Dr. Williams' deposition?

23 A. Yes.

24 Q. All right. And what do the notes say?

25 A. The notes say, "I was told Danny, Megan and

1 Mina all disagree that -- with the 'do drink,' that it
2 was not a consensus."

3 Q. And who told you Danny disagreed?

4 A. It was probably Mina.

5 Q. And Danny is Danny Staley?

6 A. Danny Staley. And I don't think that -- I
7 don't think that Mina knew what Chris' view was -- Chris
8 Hoke's view was.

9 Q. And you can keep that, as far as -- I don't
10 need to make that an exhibit. Could you tell us what
11 that piece of paper is?

12 (Witness peruses document.)

13 A. We were scrambling to -- when we realized that
14 -- I think this probably came out around the time that
15 there were some articles in the paper about the Lee
16 County information, where Randall and Reeder went down to
17 Lee County to meet with the County Commissioners. This
18 was after we had recommended that some people might want
19 to be careful with their water in that area because of
20 elevated levels of hexavalent chromium.

21 And they went down. And one of the -- there
22 were several articles in the newspaper. I think they had
23 one or two meetings down there, and the newspapers
24 covered it. And we were asked -- and I don't remember
25 who asked us -- because one of the explanations that was

1 given by Randall for retracting this, or his intent to do
2 that, was -- at least in Lee County, was that because
3 they would consider Public Water to be safe of hexavalent
4 chromium, that it should be safe for everybody else.
5 And, I mean, that was the thing we talked about this
6 morning.

7 And there is no standard for hexavalent
8 chromium. So, you know, they are not going to say it is
9 not safe if there -- based on -- you know, because there
10 is no standard. But that doesn't mean that just because
11 it is in there it is safe. And that was our view in our
12 group.

13 In other words, if it is in public water and
14 it poses an increased risk, it poses an increased risk.
15 That doesn't change just because there isn't a standard,
16 you can say that it is safe. All you can really say is,
17 "Well, we can't compare it to an existing MCL, because
18 there isn't one." That doesn't mean that it is safe. So
19 that was one of the sources of, I think -- we were
20 concerned.

21 So we were asked to look at -- in the Belmont
22 and Salisbury areas the percentage of wells next to the
23 coal ash sites that had levels -- and I discussed this
24 this morning -- above .1 and .5 parts per billion. And
25 we were also asked the question that if they removed the

1 "do not drink" part of the HRE, then Duke Energy would
2 withdraw their water from the residents. And we didn't
3 know, as it turned out, that Duke said that they would
4 continue to give the folks bottled water, which was a --
5 you know, met with -- we were very happy that they
6 continued to do that.

7 Q. Okay. Can we make that an exhibit, since he
8 has -- Dr. Rudo has spoken about it?

9 (PLAINTIFF-INTERVENORS EXHIBIT 504

10 WAS MARKED FOR IDENTIFICATION.)

11 And so the notes that you were just referring
12 to are Exhibit 504, is that correct?

13 A. Yes.

14 Q. I don't know if you know anything about this,
15 I am just going to show it to you and see if you have
16 ever seen it before. It has been previously marked
17 Exhibit 286, "Risk Explanation: Frequently Asked
18 Questions" -- if you have ever seen that document?

19 A. I saw it.

20 Q. And what is it?

21 A. This is DENR -- they were still called DENR, I
22 guess -- giving their view of risk.

23 Q. Did you agree with DENR's risk view as set
24 forth in that Exhibit?

25 A. I would say we had some -- there were some

1 areas that, you know, were correct and there were some
2 areas that were a little -- we disagreed with.

3 Q. And did you express those disagreements to
4 DENR?

5 A. We expressed them to our Department, and
6 whether they wanted to express it to DENR was up to the
7 Department, because this really meant nothing to us.

8 Q. Did you do it in writing or in -- orally?

9 A. Probably orally.

10 Q. And do you remember the substance of those
11 objections?

12 A. Just -- this is just -- you know, they are
13 entitled to their view. They are not -- you know, it is
14 not their area, but it is okay, if you want to take a
15 stab at it.

16 Q. Do you remember the substance of any of your
17 objections to the document?

18 A. Not right off, no. We were amused by parts of
19 this, but it was -- you know, I think it reflected, to a
20 great degree, the view of Public Water, which is very
21 skewed.

22 Q. If you look at, I think, about 2 pages from
23 the end, there is a chart of various cities in the United
24 States and their levels. Do you know where that data
25 came from or where that chart came from?

1 A. Let's see if they referenced it.

2 (Witness peruses document.)

3 I am not sure in here where they referenced it
4 from, but they have two reference -- three. You know,
5 they probably pulled it off of on-line somewhere.

6 Q. Do you know why they picked those particular
7 cities, other than the ones in North Carolina?

8 A. No. Maybe just because they were looking at
9 different cities with different size -- different amounts
10 of people.

11 Q. Thank you. You mentioned earlier an issue
12 involving -- and I am not sure I am saying this right --
13 Neuse Crossing?

14 A. Neuse Crossing.

15 Q. N-E-U-S-E?

16 A. Like the Neuse River.

17 Q. Like the Neuse River. And what was that
18 issue?

19 A. Let me get a drink of water first. This was
20 my first interaction with Tom Reeder. I think he was
21 Division Director, maybe, then, I am not sure if he was,
22 like, a Deputy Secretary or not. But we had a -- it was
23 about 2013, we were contacted, I think, by some residents
24 of this community called Neuse Crossing. It had, like,
25 200, 300 people in there.

1 And they were on a public water system -- well
2 water system that was run by a company -- I can't recall
3 the companies name right now. And we received data, upon
4 request, that showed over a 16 year period -- this was,
5 like I said, a public water supply for a community. And
6 we received data that showed over a 16 year period that
7 the levels of Toxaphene, a pesticide -- a carcinogen, for
8 a great number of -- for a great extent of that period of
9 time exceeded the MCL of, I think, 3 parts per billion.

10 And we brought it to the attention of the
11 Public Water Supply Section. And they -- they went nuts.
12 They just -- we told them that we felt we needed to do
13 something. And they -- they just -- they went to war
14 with us, for what reason we do not understand. First,
15 they went to my Department and accused me of going out on
16 a limb trying to make a big deal out of something that
17 was nothing that they had taken care of.

18 You know, and when we asked him if the levels
19 were still elevated, we found out that they were. But
20 they had really done nothing but send Notices of
21 Violations to this company. They had never really asked
22 them to fix the problem, put filters on there, to, you
23 know, get a clean source of water. In other words, these
24 people were drinking, for the most part -- even after you
25 would average each quarter, which is what they do -- for

1 the most part, they were drinking water with elevated
2 levels of this carcinogen for almost 16 years.

3 And it was just amazing. It was just -- so we
4 had never worked with their department. This was the
5 first time that Dr. Wos and her folks had worked with us.
6 And so when Public Water and Reeder went to them
7 complaining about me going crazy on this and just being
8 out of line, not knowing what I was doing, stirring up
9 trouble, they called our group over.

10 We had a meeting with Matt McKillip. And they
11 wanted to know what was going on and what the problems
12 were. Was there a problem here? Was there a risk? Tell
13 us about the chemical. And for about two or three days,
14 they played -- as they should have, they played devil's
15 advocate with us, having us show them statistically and
16 toxicologically from a public health standpoint that this
17 was a problem that our Department needed to intervene
18 with Public Water to make them induce this company to do
19 something to fix it, to protect these people.

20 There was a lot of people in this community.
21 We had to prepare a Health Risk Assessment document, we
22 had to meet with lawyers from our Department. We were
23 working with the Wake County Health Department and the
24 Health Director there. And every step of the way, once
25 our Department understood that we presented a case that

1 was scientifically in public health defensibly as to why
2 we needed to protect these people, and that they had not
3 been protected, that Tom Reeder was allowing these people
4 to be exposed -- Public Water, you know -- to elevated
5 levels of a chemical that could cause cancer, our
6 Department started discussions.

7 They said, "Okay. We understand." We had to
8 explain to them how we do what we do, like I explained
9 earlier this morning. And once we showed them the
10 science, showed them the documents, we were vetted by our
11 Department -- as it should be. They understood what we
12 were doing and that we needed to protect the health of
13 this community. That was the position of our Department,
14 from Dr. Wos on down.

15 And Public Water and Reeder refused to do it.
16 They argued with us. They brought in their lawyers.
17 Everybody, as they say, "lawyered-up." Okay. And it
18 became -- the Health Department brought in their lawyers.
19 So -- and the company brought in their lawyers. And then
20 the company brought in a consultant who was very poor at
21 his job and did a very inadequate job of defending the
22 science for his company.

23 And in essence, Public Water did not want to
24 do anything. They didn't think anything needed to be
25 done. They felt everything was fine. Their rules -- by

1 their rules and their interpretation of the rules,
2 everything was fine; that even though these people were
3 at elevated risk of cancer and they knew it, it didn't
4 really go outside of what they said their rules would
5 require them to request of the company.

6 Our Department, at the top level, disagreed
7 with that. And they issued an order to DENR and Public
8 Water to issue an order to this company to put in
9 filtration systems. And Reeder took this very poorly, at
10 least as far as it was concerned with me, personally. He
11 made it personal with me. Okay? I am not going to say
12 what he said, but it wasn't nice.

13 And then he tried to do other things. I later
14 found out through the Environmental Management
15 Commission, to say bad things about me. But that is
16 fine, I am used to that. But it was the first time we
17 encountered Reeder and his desire to protect Public Water
18 and what they do and how they do their job, even if it
19 puts people at risk.

20 Q. What was the ultimate outcome? Was a filter
21 put in place in the system, do you know?

22 A. It was. And I believe the company tried to
23 sue us. I think it was thrown out pretty quickly. I
24 mean, we weren't that concerned about it. I mean, we had
25 used science to make the case, and the regulations.

1 Q. Do you know if it dropped the levels of the
2 carcinogen?

3 A. It did, yes.

4 MR HOLLEMAN: If we could take about a five
5 minute break, I may be almost through.

6 MR. HOLLEMAN: OFF THE RECORD. 3:31 P.M.

7 (A BRIEF RECESS WAS TAKEN.)

8 MR. HOLLEMAN: ON THE RECORD. 3:35 P.M.

9 MR. HOLLEMAN: That is all I have. Thank you
10 Dr. Rudo.

11 MR. LONG: Anita, you want to go first?

12 MS. LeVEAUX: Yes, If you don't mind.

13 D I R E C T E X A M I N A T I O N 3:36 P.M.

14 BY MS. LeVEAUX:

15 Q. I would like to just say at the outset, thank
16 you for being here, Dr. Rudo. My name is Anita LeVeaux.
17 I am Special Deputy Attorney General for the Attorney
18 General's Office representing DENR, which is now known as
19 the Department of Environmental Quality.

20 A. Yes.

21 Q. And I am going to ask this deposition be held
22 open so I will have an opportunity to review some of your
23 notes and your information, and later bring other
24 questions that we may have. So I am going to be brief,
25 with just a few questions.

1 You indicated -- your constant reference in
2 response to questions was to a team, or ---

3 A. Huh?

4 Q. --- to a team that you work with ordinarily?

5 A. Okay. I understand.

6 Q. Who would that team consist of?

7 A. Well, I mean it depends on what level you want
8 to look at that. I mean, we have a group in our Branch
9 that do work. And we work closely with Dr. Davies. And
10 she works closely with those above her.

11 So I look at it as -- depending on what kind
12 of issue, you know, a lot of things, you know, we work on
13 and we are just left alone to work on our usual everyday
14 things. And then there are certain issues that seem to
15 take a little more importance for one reason or another.
16 And in general, we work very closely with everybody up to
17 a State Health Director.

18 Q. So you mentioned Dr. Davies. And let's just
19 focus -- let's bring the focus into hexavalent chromium
20 and vanadium, and the issue as it deals with drinking
21 water, okay?

22 A. Okay.

23 Q. Who would you interact in that instance with,
24 for the most part?

25 A. Well Dr. -- they are pretty insistent in our

1 Department of chain of command. It seems to be a very
2 important consideration. My first 10 or 15 years I was
3 encouraged, you know, to go straight to the top and talk
4 to everybody. But in the last, say, 12 years, it has
5 been more of the chain of command. So I would work
6 through Dr. Shehee, who is my Branch Chief. And then she
7 works with those above her.

8 Q. And does Sandy Mort work with you?

9 A. Not any -- she works over in ---

10 Q. I understand. I am sorry. Did Sandy Mort
11 work with you?

12 A. Yes.

13 Q. And what was that relationship, and what did
14 she do? What did you collaborate on?

15 A. Well she was -- she was a toxicologist, a very
16 good -- probably one of the best toxicologists I have
17 ever known. And she had a contract to do Health Risk
18 Evaluations and assessments for ATSDR. And as a result
19 of that work, she also worked with me on a lot of the
20 issues, sometimes because they were going to end up being
21 ATSDR issues, sometimes just because, you know, I needed
22 help. And she was just -- you know, you guys should be
23 glad to have her. She is really good.

24 Q. And what does that acronym stand for?

25 A. ATSDR?

1 Q. Correct.

2 A. Agency for Toxic Substances and Disease
3 Registry. And they are a branch of CDC.

4 Q. I see. Okay. And how long did you two work
5 together?

6 A. Maybe five or seven years, maybe.

7 Q. And are your offices in proximity to one
8 another?

9 A. Pretty close, three or four offices away.

10 Q. Three or four offices away? And so you are
11 both toxicologists, is that correct?

12 A. Yes.

13 Q. Am I sensing a certain regard and respect you
14 had for one another?

15 A. I have -- you know, I can't speak for her,
16 but, you know, I have just a lot of respect for her. I
17 trust her. She is, from a technical standpoint, superb.
18 And from a standpoint of Risk Communication, she has
19 become superb over the time here.

20 Q. So it sounds as if you both had respect for
21 one another. A question to you; did it surprise her when
22 you refused to put your name on that letter?

23 A. Probably not. I mean, it is just -- you know,
24 I can't -- I mean, she agreed, you know, to not do it,
25 either. So I would say, no.

1 Q. Had you all discussed it before you reduced it
2 to a writing?

3 A. I think we probably had. And I don't know
4 whether I put it down because maybe I wasn't able to get
5 in touch with her that day or not, for some reason, and
6 we had to respond quickly, or we just may have wanted to
7 record it for the record. I am not sure. We --
8 generally, we are not really big on recording things for
9 the record, you know, I think.

10 So it may have been because I just wasn't able
11 to get up with her. But I don't know. I don't remember
12 which one it was.

13 Q. You indicated that hexavalent chromium and
14 vanadium in drinking water was a new issue. When did
15 this issue first come to the forefront for you?

16 A. I think it was brought to our attention maybe
17 early summer of 2014, mid-summer.

18 Q. So it came on the wings of coal ash management
19 issues, is that correct?

20 A. Well, it did. But I think -- I think it came
21 before the CAMA Law was promulgated. And it came at the
22 request of DENR. They were -- your folks were the ones
23 who came across this. And, you know, it was like, "Can
24 you guys help us?" And we went "Sure, yes."

25 Q. So actually prior, then, to 2014, that was a

1 non-issue? That wasn't something that you all had
2 discussed to any great extent, is that correct?

3 A. Yes. And a lot of it was also because, you
4 know, the State Public Health Laboratory and a lot of the
5 private labs we work with, and work with DENR with,
6 didn't routinely look for those two components. There
7 have been lots of changes since we started doing that.

8 Q. And I think your testimony was that a lot of
9 states were of the same position, is that correct?

10 MR. HOLLEMAN: Object to the form.

11 THE WITNESS: Yes. I mean, that is my
12 impression, because a lot of them were -- just sort of
13 defaulted, it sounded like.

14 BY MS. LeVEAUX:

15 Q. You indicated also in your testimony -- and
16 correct me if this is not a fair statement -- that you
17 often did work with DENR; that you often partnered with
18 DENR as it related to various issue as they might affect
19 public health safety?

20 A. Routinely, yes.

21 Q. And is it fair to say that that relationship
22 with DENR is pretty much a collaborative relationship?

23 A. Yes.

24 Q. So in collaboration, as you know, there may
25 not always be agreements; is that fair?

1 A. That is fair. And that has, you know, has
2 been true with things we have worked on over the years.
3 There have been times when we have disagreed with each
4 other. I think the difference is is that, you know, we
5 have a lane that we have, which is the risk assessment
6 lane. And DENR -- you know, the lane is different
7 depending on who we are working with, but it is relating
8 to regulatory issues and protecting the environment and
9 things like that. And we generally stay in our lane.

10 This is an example of you guys coming into our
11 lane. And not only coming into our lane but, you know,
12 pushing us over to the side of the road. And we are
13 trying to stay in one lane or something. And it was
14 unusual for that reason. It was just -- it was -- the
15 degree of what was going on was way out of proportion of
16 anything we had ever dealt with, except maybe the Neuse
17 Crossing, in probably 17, 18 years. We hadn't
18 encountered -- it had been amazingly collegial until
19 these two things.

20 Q. Mr. Holleman referenced to Exhibit 279, which
21 has already been introduced into evidence. Can you --
22 you can look at mine. If you guys can bring that up -- I
23 mean, I can even share my copy or you guys can -- you
24 have it? Good. Thank you.

25 And in looking at Exhibit 279, at issue -- it

1 is the letter dated June 4th, 2015, is that correct?

2 A. Yes.

3 Q. And you are familiar with this document, are
4 you not?

5 A. Well, I am -- you know, I would have seen -- I
6 didn't see this exact document, I don't think. But, you
7 know, I am familiar with the general format of the cover
8 documents we were using.

9 Q. And in this exhibit, this is to the well
10 owner. And the first sentence reads, "As part of the
11 Groundwater assessment conducted in accordance with NC
12 Session Law 2014-122" -- do you recognize that as CAMA?

13 A. That is my assumption, yes.

14 Q. "The North Carolina Department of Environment
15 and Natural Resources (DENR) requested that, at a
16 minimum, all water supply wells within a thousand feet of
17 each coal ash waste facility's boundary be sampled." You
18 understand that that is not something that DEQ just made
19 up; it was part of guidelines that they had to follow; is
20 that your understanding?

21 A. Right. Correct.

22 Q. And you don't disagree with that?

23 A. No. But I think they later -- because of what
24 we were finding, I think they went back and asked
25 permission to expand it to 1,500 feet.

1 Q. Okay. And then on May 11th -- I am going on
2 with what this letter says. "On May 11th" -- second
3 paragraph, next sentence -- "On May 11th, 2015, Pace
4 Analytical Services, Inc. collected groundwater samples
5 from one well on the referenced property." Do you have
6 any issues with Pace Analytical Services, personally?

7 A. No.

8 Q. So you don't know that they enjoy a reputation
9 of -- one way versus another; is that correct?

10 A. I mean, they are good. I mean, they are --
11 they are a solid lab. I mean, they -- you know, we have
12 encountered things that we have had to talk to them about
13 in the past, here and there. But by and large, they are
14 very good at what they do. And in this case, we were, I
15 think, glad to have them working with us because they
16 were really the only ones that could get down, for them
17 most part, for hexavalent chromium, as low as they were
18 able to.

19 Q. That sort of gets to my next question, thank
20 you. The next sentence, "The water samples were
21 collected and analyzed for constituents that may be
22 associated with coal ash." That is a true statement, is
23 it not?

24 A. I would imagine it would be, yes.

25 Q. "A complete copy of the laboratory" -- next

1 paragraph -- "A complete copy of the laboratory sample
2 results are attached for your review." So, again, it is
3 reference to the attachment which is, in fact, a DHHS
4 document; is that correct?

5 A. No. The laboratory samples would be a Pace
6 Analytical document. So that would be a document that
7 was reviewed by both DENR and us.

8 Q. Correct. But if you will go to page 3, and
9 you see the Well Water Information and Use
10 Recommendations?

11 A. Right.

12 Q. And so that -- those lab results were attached
13 to that, is that correct?

14 A. Well, we would have sent over just this sheet
15 (indicating) to you guys. As a matter of fact, I think
16 you already had the sample results.

17 Q. I am just looking at the heading. If you
18 will, can you tell me who is on the heading of that Well
19 Water Information and Use Recommendations?

20 A. Yes, that is us. But what you asked was --
21 you said a complete copy of the lab results attached for
22 your review, and you were asking whose -- who they -- I
23 guess, whose -- where they came from. That came from
24 Pace. So that would have been something that would have
25 come to both DENR and to us. It wasn't our data. It

1 wasn't your data. We both have our own labs, and that
2 was the lab hired by DENR through working with Duke.

3 Q. Okay. And I guess what I am trying to get to,
4 Dr. Rudo, is in this Well Water Information and Use
5 Recommendations -- this DHHS document -- do you know what
6 was attached to that document?

7 A. Well, we would have -- we would have filled
8 out this form based on the laboratory sample results.

9 Q. Uh-huh.

10 A. I don't know what you are saying by "what is
11 attached to it."

12 Q. And I guess I am trying to understand, in
13 filling out this form, what you reference to in order to
14 make the determination as to which box should be checked?

15 A. We use the Pace Analytical results.

16 Q. So you did rely -- okay, so let me rephrase
17 that question another way, then.

18 A. Sure.

19 Q. You relied upon the Pace Analytical results in
20 formulating your response to the checklist that is set
21 out in your document, which is on page 3?

22 A. Yes.

23 Q. Thank you. And then going to the next
24 sentence, "The water samples were collected and analyzed
25 for constituents that may be associated with coal ash" --

1 you don't disagree with that statement, do you?

2 A. No.

3 Q. And then going to the next paragraph, "A
4 complete copy of the laboratory sample results are
5 attached for your review." And you indicated that both
6 DHHS and DEQ were aware of these results and had some
7 familiarity with them, is that true?

8 A. Right. You would have hired Pace to do the
9 analysis. I am not sure -- I guess Duke would have paid
10 Pace to do -- for doing it. I guess, I am not sure.
11 Then you would have sent it to us -- the lab results --
12 after you got them from Pace for our review. We would
13 then do the Health Risk Evaluation from the Well Water
14 Information and Use Recommendations and send it back to
15 you for distribution to the residents.

16 Q. And then there is reference -- in the next
17 sentence -- the next sentence reads, "The table below
18 provides the comparison of the lab results with the
19 groundwater standards." And, of course, you are well
20 aware of the fact that DEQ must follow the groundwater
21 standards?

22 MR. HOLLEMAN: Objection.

23 BY MS. LeVEAUX:

24 Q. Or are you?

25 A. Well, I mean, I can't -- I am not speaking for

1 them on how they are interpreting it, but we, by
2 consensus agreement, were using specifically a
3 recommended Health Protective Value for hexavalent
4 chromium, specifically, which did not have a 2L Standard,
5 but -- and that is what we were doing as per agreement.
6 As to what they wanted to put in here (indicating), it is
7 up to them what they want to put in. I have -- I don't
8 have any problem with that.

9 Q. Okay. Because DENR, in fact, went to the
10 chromium standard for groundwater in the 2L?

11 A. The total chromium.

12 Q. Total chromium? And total chromium would
13 include hexavalent chromium, would it not?

14 A. Yes.

15 Q. And the next sentence, "North Carolina's
16 groundwater standards are calculated to protect your
17 groundwater as a source of drinking water." Do you
18 believe that that is an accurate and true statement?

19 A. The intent of that is accurate, yes.

20 Q. Okay.

21 A. That is not always true, but it is ---

22 Q. Okay. And then, "The standards prohibit
23 contamination that would create a threat to human life."
24 That is not only DEQ's position, that is also DHHS'
25 position; is that a fair statement?

1 A. Once again, it is something that we would --
2 it is generally considered to be true. There are
3 exceptions to the standards where they do present a
4 threat to human health, but those are situations -- and
5 there is not many, when you consider how many chemicals
6 we have 2L Standards for. And I would say, you know, I
7 can think of maybe only three or four that we have
8 standards for that are not protective of human health.
9 All the others pretty much are. So in general, that is
10 true.

11 Q. And then it goes on to explain -- it sets out
12 those results for chromium -- total chromium. And then
13 in the next paragraph, "In addition to the constituents
14 for which the State has a groundwater standards, some
15 constituents we tested for have an Interim Maximum
16 Allowable Concentration." And then it sets out what that
17 is.

18 "This means that studies have estimated the
19 potential impact to human health, but that a groundwater
20 standard has not been established." Is that also your
21 understanding?

22 A. Yes.

23 Q. "For discussion of any" -- the next sentence
24 reads, "For discussion of any of these constituents that
25 are in your well, see your Health Risk Evaluation

1 provided by the NC Department of Health and Human
2 Services, DHHS." That is you, correct?

3 A. Correct.

4 Q. And they noted, "As is noted in the 2L Rules"
5 -- the next sentence -- "it should also be noted that
6 many of the constituents that were tested may be
7 naturally occurring and/or unrelated to coal ash ponds."
8 And that is true for both hexavalent chromium and
9 vanadium, is that not correct?

10 A. To my knowledge, yes.

11 Q. And the next sentence reads, "Work is
12 currently underway to determine their sources and
13 extent." And that is a true statement as far as you
14 know?

15 A. Yes.

16 Q. "If DENR determines that Groundwater Standards
17 in your well have been exceeded and that a coal ash pond
18 is the source, State Law requires that the utility
19 provide you with an alternative water supply." Is that
20 also your understanding?

21 A. I -- I would imagine that they -- I would -- I
22 would think they are.

23 Q. "DHHS, Division of Public Health" -- say that
24 for me please, "Epidemiology" ---

25 A. Yes.

1 Q. --- "Section, Occupation and Environmental
2 Epidemiology Branch, OEEDB, has evaluated the well sample
3 results." And that is true, correct?

4 A. Correct.

5 Q. "DHHS has provided the attached Health Risk
6 Evaluation for the sample results from each well sampled
7 at the referenced property." And then is just goes on to
8 say, "If your attached Health Risk Evaluation includes
9 the recommendation that your water not be used for
10 drinking or cooking, please note that the recommendation
11 was made using the statistical risk threshold of 1
12 additional case of cancer in a population of 1 million
13 people who were exposed at that level over a lifetime."

14 And without going on to the rest of this, it
15 seems to me that DHHS and DENR are in agreement in this
16 letter ---

17 MR. HOLLEMAN: Object.

18 BY MS. LeVEAUX:

19 Q. --- is that -- is that a fair statement?

20 MR. HOLLEMAN: Same objection.

21 THE WITNESS: Well, we did ask them to take
22 the word "statistical" out of that sentence. And that
23 would have made that statement accurate. "Statistical,"
24 sort of is not quite right. And then the last sentence
25 was something that we disagreed with.

1 BY MS. LeVEAUX:

2 Q. And when you say "the last sentence," could
3 you ---

4 A. (Interposing) Of that paragraph: "It is also
5 important to recognize your well water has been
6 determined to meet all the criteria of the Federal Safe
7 Drinking Water Act for Public Drinking Water." You know,
8 in some cases, that was not a true statement.

9 Q. Okay. In what instances would that not be a
10 true statement?

11 A. In cases where it exceeded either, say, lead,
12 iron or manganese, which there were a bunch of wells that
13 did. So -- and that was a standard line. And we
14 counseled you to -- we recommended that you not put that
15 in there because it is not necessarily true in all cases.
16 And it -- for whatever reason, you didn't want to remove
17 "statistical" or remove that last line, or change the
18 line.

19 You could have put "may" or "could." Then the
20 last line would have probably been accurate for
21 everybody. So it is close. Close.

22 MS. LeVEAUX: Okay. Thank you. Those are
23 my questions for right now. And I reserve the right to
24 continue my line of questioning once I have had a chance
25 to review those documents. Thank you.

1 D I R E C T E X A M I N A T I O N 3:57 P.M.

2 BY MR. LONG:

3 Q. Dr. Rudo, my name is Nash Long. We met this
4 morning. I am representing Duke Energy, and I have a few
5 questions for you this afternoon.

6 A. Yes.

7 Q. And thank you again for being with us today.
8 I take it from what you have testified to this morning
9 that the primary area or the primary reason for your
10 disagreement over the withdrawal of the "do not drink"
11 letters was the .07 part per billion screening level for
12 hexavalent chromium, is that right?

13 A. I think that the -- I think the primary reason
14 for my disagreement with it is that, number one, we had
15 already gone through an extensive months long vetting
16 process to reach consensus, as we talked about this
17 morning, between the two departments on how to protect
18 these folks in these areas. And decisions had been made
19 at the top of both Departments as of last year to tell
20 these folks that had levels that were agreed upon by both
21 departments for hexavalent chromium, to not drink their
22 water. They exceeded it, based on the approaches that
23 were legally vetted by both departments from the CAMA
24 Law.

25 And so, in essence, you had a situation where

1 the top of both Departments, and probably the Governor's
2 Office, were all in agreement as to what we did last
3 year, in terms of recommending that these folks with
4 elevated levels of these chemicals not drink their water.
5 I think my disagreement is with the fact that we changed
6 people that were running our Departments -- both
7 Departments, and we changed the State Health Director and
8 a Deputy Secretary in the other Department. And as a
9 result of that change, a philosophical change was made in
10 what we tell everybody that was not science based, for
11 the most part, that was not consistent with principles
12 that we utilize for protecting public health, and
13 inconsistent with what the two departments, and probably
14 the Governor's Office, had decided the previous year.

15 So I think that is where -- it comes more
16 from, I think, that general unprecedented thing that --
17 that these two Departments did this year, where they
18 overturned something done by the same two Departments
19 last year after approaches were reached that were just --
20 they were the result of some of the most aggressive,
21 detailed, punishing vetting and consensus that I -- that
22 we had ever reached.

23 So I think that is the thing I think, more
24 than -- if I would say, you know, what bothers me about
25 this, is I have never seen that happen before where

1 essentially a non-scientific decision that was maybe
2 philosophical, maybe political, I don't know -- was
3 reached and overturned a scientific decision and a public
4 health decision reached by the same two Departments a
5 year earlier. That, to me, was -- I think that is
6 what ---

7 Q. And that earlier decision was based, in large
8 part, on the health based screening level of .07 part per
9 billion hexavalent chromium?

10 A. I think it was based on a lot more than that.
11 I mean, that was -- that was the health protective limit
12 for that one chemical that we used, but it was more the
13 general approach that was utilized by both Departments.
14 I mean, it is just -- you know, nothing has changed.
15 They haven't changed the .07. It is still in place.
16 Nobody had adopted another number yet in any kind of
17 official or regulatory fashion. It still is what it is.

18 So if they made a decision to do something
19 unprecedented -- I have never seen this, never seen a
20 retraction where there was still the same risk. Never --
21 just never. I have talked to toxicologists in other
22 states, haven't seen this. Talked to folks in other
23 county health departments and asked them, and they have
24 never seen this.

25 This is just -- this is -- this is new ground.

1 This is just something that -- it doesn't make any sense
2 to me. I can't understand why they would do this.

3 Q. Let me ask you this. How long did it take to
4 develop the .07 part per billion hexavalent chromium
5 screening level?

6 A. Would you -- are you talking -- do you mean
7 how long did it take to actually physically calculate it,
8 or have it vetted by both Departments to the point where
9 we were going to use it?

10 Q. Well, let's start with how long did it take to
11 calculate it?

12 A. I would have to ask Hanna and David how long
13 it took them to do it. It was a pretty straightforward
14 calculation.

15 Q. Over at DENR?

16 A. Yes.

17 Q. Okay. Did you spend any time calculating it?

18 A. I reviewed the calculations. I reviewed the
19 basis for the calculations. I reviewed the science, the
20 NPT 2008 bioassay -- 2 year bioassay that was done where
21 -- the basis for the cancer slope factor. I reviewed
22 that information.

23 Q. And what other literature did you review in
24 that process?

25 A. I probably -- I probably reviewed over a

1 hundred peer review published paper looking at cancer and
2 non-cancer end points, looking at mechanistic end points,
3 looking at -- to a significant degree of mutogenicity of
4 hexavalent chromium, which was a major concern.

5 I reviewed documents from EPA, from
6 California. I am not sure if we looked at anything from
7 ATSDR or not. I would have to go back and look. But the
8 primary thing was I was looking at the individual
9 studies, the scientific literature.

10 Q. Could you look at --

11 MR. LONG: And Myra, I might need your
12 help here as well -- Exhibit 274, which you showed him
13 earlier.

14 THE WITNESS: Okay.

15 BY MR. LONG:

16 Q. So we are showing you what has been marked as
17 Exhibit 274. And you testified earlier that this was the
18 actual calculation of the .07 part per billion number for
19 hexavalent chromium.

20 A. Okay.

21 Q. And my question for you is about the
22 carcinogenic potency factor.

23 A. Uh-huh.

24 Q. What does that mean?

25 A. That is -- that is the number that is derived

1 from tumor data -- from, say, from the 2 year animal
2 bioassay. In this case it would have been, I think, from
3 the NTP 2008 rat and mice study.

4 Q. And there is a note here that it came from
5 EPA/IRIS. Do you see that, in the source column?

6 A. Okay.

7 Q. And that is the draft of the hexavalent
8 chromium standard EPA put out in 2010, is that right?

9 A. I think that is -- that is -- no, no, no. I
10 would look at that as a little -- I am not exactly sure
11 what they were trying to reference there. It is not
12 clear, because there was, from my -- we went to, I think,
13 EPA IRIS. The EPA -- IRIS itself, I think, had its own
14 on-line cancer slope factor.

15 There was a -- I think it was Region 9 had an
16 EPA regional screening level value for a cancer slope
17 factor. California had a regional -- had their own
18 cancer slope factor. And they were pretty much all the
19 same. They were all, I think -- I think it was .5
20 milligram -- kilograms per day. But they were all -- it
21 was -- you know, it wasn't like relied on some kind of
22 draft document or anything. The draft document was
23 something -- it was just another thing that we read.

24 But they all seemed to have the same cancer
25 slope factor. California calculated theirs, I believe,

1 based on a calculation that New Jersey did. And I
2 reviewed the calculation for California and the tumor
3 data that they got it from. The EPA RSL value from
4 Region 9, I believe it was, was a published value, and it
5 was being utilized.

6 From what I understand, there wasn't -- the
7 EPA/IRIS itself, on-line, had published a cancer slope
8 value. I don't believe it was represented as a draft
9 IRIS value. There was a draft document that EPA had from
10 2010 that also had that cancer slope factor. So they
11 were all sources that had the same cancer slope factor
12 value.

13 Q. Do you know -- you said that California was
14 relying on New Jersey?

15 A. It -- I got the impression from it that they
16 were, but they -- I mean, they did their own calculation.
17 It was a detailed -- we can pull it out. I have the
18 document here. It was a detailed, well thought out, well
19 delineated value, well calculated. I think they -- I
20 think they referenced -- it was either they referenced it
21 or it might have been referenced by Region 9, but it was
22 sort of -- nobody was relying on a draft document, if
23 that is what -- that is what I think you are trying to
24 get at. It wasn't -- we don't ---

25 Q. No. My question -- and I will just ask the

1 question, is do we know what they were relying on in
2 California?

3 A. They would have been relying on the tumor
4 data. Whether they got that calculation -- I believe
5 they did the calculation for themselves, but they might
6 have referenced New Jersey if it was the same. I didn't
7 see anything from New Jersey that I reviewed, but I
8 looked at the EPA Region 9. I looked at the California
9 document. I, you know -- and so on.

10 Q. Did you talk to anybody at EPA about the
11 cancer slope factor to use?

12 A. No. We have talked to them about when -- when
13 in the world they are going to publish the final document
14 on this, because they have been held up -- sort of like
15 when they were doing arsenic back around 2000, they had a
16 draft document. They promulgated a standard. And they
17 just got a lot of resistance from stakeholders, and it
18 held up the process for years.

19 And that is what I have been told is going on
20 here with hexavalent, that there is just resistance to,
21 you know, what they are doing and what they want to do.
22 And when they overcome that resistance and finalize the
23 document, they will probably come out at that point in
24 time with a recommended MCL, also, that will be
25 available, I guess, for public comment.

1 Q. And in point of fact, the Science Advisory
2 Board sent this draft back to EPA, is that correct?

3 A. I have not seen -- I have seen comments. You
4 know, when you send out a draft document you get
5 comments. I haven't seen the Science Advisory Board
6 comments specifically.

7 Q. Can you look at Exhibit 492, which was
8 referenced earlier today?

9 A. Do we need that -- can I hand her that back?

10 Q. Yes, you can give that back.

11 (Witness peruses documents.)

12 Do you have Exhibit 492 in front of you?

13 A. Yes.

14 Q. This is the e-mail Sandy Mort sent to Mina
15 Shehee dated February 16th, 2015, and copied to you on.
16 And you testified about this earlier today.

17 A. Uh-huh.

18 Q. And does this reflect the basis for which the
19 Department of Health and Human Services vetted the .07
20 parts per billion hexavalent chromium number?

21 A. Once again, it is a -- it is just one of the
22 sources. There is an e-mail in here somewhere from
23 DEQ -- DENR, where they laid out the fact that they
24 looked at several different sources for the cancer slope
25 factor for their calculation. And I didn't see any

1 mention of a draft -- any kind of draft document. I
2 think they might have looked at IRIS. I think they
3 looked at the EPA Region 9 RSL value, and they looked at
4 California. And I think -- so they did the calculation.
5 The cancer slope value they used, I think they attributed
6 to those sources.

7 Q. Let me show you what was previously marked as
8 an exhibit ---

9 A. Let me see if I can find the e-mail. If i can
10 find the e-mail, it probably would make it ---

11 (Witness peruses documents.)

12 Here it is. Okay, here it is. I have exactly
13 what -- the question you were asking. Would you go ahead
14 and pass this to him?

15 (Document handed to counsel.)

16 Q. Okay. Can we mark this as our next numbered
17 exhibit. What number are we up to?

18 COURT REPORTER: 505

19 MR. LONG: 505? Thank you.

20 (DEFENDANT EXHIBIT 505 WAS
21 MARKED FOR IDENTIFICATION.)

22 THE WITNESS: Do you still need 492?

23 BY MR. LONG:

24 Q. Yes, you can hold onto that. Okay. And just
25 for the record, this exhibit, which is 505, is one of the

1 e-mails you brought with you to this deposition today?

2 A. Yes.

3 Q. Okay. And it states that there are how many
4 sources for the cancer slope factor that were used to
5 produce the hexavalent chromium number here?

6 A. There were three sources.

7 Q. There were three sources? Do you know whether
8 those three sources relied on the same NTP study?

9 A. I would image they probably would have to.

10 Q. Okay. Do you know whether that study has
11 received any criticism subsequent to its publication?

12 A. I think it was -- I am not sure when it was
13 published in the peer reviewed scientific literature, but
14 I have gone back and read, I think it is Stout -- I would
15 have to go back and -- I don't remember the name exactly.
16 But I went back and read the published study and reviewed
17 that, also, so ---

18 Q. And what is a Mode Of Action, in the
19 toxicological context?

20 A. An MOA is considered how you would think a
21 chemical exerts an adverse effect, whether it is a
22 non-cancer effect, a cancer effect. But it is the way
23 that it can cause it: what it does to cause that to
24 happen.

25 Q. And what does a Linear Mode of Action mean in

1 this context?

2 A. Well, I think that -- I think that might be
3 looked at more as if you are going to do a -- use a
4 cancer slope factor and do a cancer calculation, you
5 know, are you going to use the -- what kind of model and
6 calculation are you going to use? If you use the "No
7 Threshold" approach that EPA uses, it would be a linear
8 calculation down to zero. Zero.

9 So that would be the approach -- that might be
10 probably what they -- I haven't heard it -- I haven't
11 heard the term Linear MOA, because those -- that doesn't
12 sort of make any sense to me how you said that.

13 Q. All right. Those studies which you -- or
14 documents referenced in Exhibit 505, did they posit a
15 threshold effect with respect to hexavalent chromium, or
16 did they take it down all the way to zero?

17 A. I think they looked at it as "No Threshold."

18 Q. No Threshold effect? So what does that mean?

19 A. Well, it means, sort of -- if you are looking
20 at a -- the MOA that we are talking about would be a
21 mutagenic -- you are looking at chromium VI as a
22 mutagenic carcinogen, which means that you are treating
23 -- in the scientific literature -- and there are just an
24 overwhelming number of studies that show that hexavalent
25 chromium is a mutagenic compound chemical.

1 And the ways that it is mutagenic -- when you
2 -- when you want to look at whether a chemical may have a
3 mutagenic Mode Of Action, you are looking for how is it
4 mutagenic? How many types of mutagenicity? What kinds?
5 Are you looking for numerical or are you looking for
6 damage, are you looking for -- you know, all kinds of
7 different types are you looking for. Stem cell
8 mutagenicity, germ cell mutagenicity?

9 And if you see the different kinds of
10 mutagenicity you see for hexavalent chromium, you look at
11 it then as the way it causes cancer is by a mutagenic
12 Mode Of Action, which means that it is doing something to
13 DNA which initiates -- or even maybe promotes the cancer
14 process. It starts the process.

15 And because mutagenicity is something that
16 occurs at a molecular level, you are looking at it as any
17 level of exposure, theoretically, because you are dealing
18 with molecules. Say if you had one part per billion of
19 hexavalent chromium in here (indicating), you would be
20 talking about billions and trillions of molecules of
21 hexavalent chromium, any of which could be -- could cause
22 a mutation that is maybe not repaired by the human body
23 that could start the cancer process. So that is why you
24 say it is a "No Threshold," because in theory, there is
25 no safe level of exposure.

1 Now, a further example of this is if you look
2 at EPA's MCLs, and let's say their drinking water 2012
3 guidelines 14 and 15. They will have -- for mutagenic
4 carcinogens that have MCLs, they will have an MCL for
5 that chemical. But for pretty much, I think, every
6 mutagenic chemical that they have an MCL, the MCLG, or
7 the Maximum Contaminant Level Goal, which is actually a
8 health number, will be zero, because zero is what EPA
9 believes for a mutagenic carcinogen to be the only truly
10 safe level for exposure to humans.

11 In other words, MCLs -- and this is part of
12 the problem we have with this situation. MCLs are not
13 health protective health-based standards. Okay? They
14 are a standard that is adjusted for technological
15 feasability. So what EPA did when they were calculating
16 MCLs, knowing that, they put in a category of MCLG, which
17 is actually a health number.

18 And for chemicals, once again, with a
19 mutagenic Mode Of Action, those MCLGs are zero. So when
20 they promulgate an MCL for hexavalent chromium, whenever
21 they do it, they will probably have an MCLG -- a Maximum
22 Contaminant Level Goal -- an actual health number of
23 zero.

24 Q. Let me ask you about EPA. This has previously
25 been marked as Exhibit 289. I have extra copies for you

1 all, as well. I will pass this over to you.

2 (Document handed to witness.)

3 There you go. All right. This is a document
4 dated December 2010, EPA's Office of Water, entitled
5 "Chromium-VI and Drinking Water." And again, it has
6 previously been marked as Exhibit 289. Are you familiar
7 with this document?

8 A. I have never -- I don't think I have seen
9 this, no.

10 Q. Let me ask you about the paragraph, "Why
11 doesn't EPA regulate chromium-VI?" Do you see that
12 heading on that paragraph?

13 A. Okay.

14 Q. The first sentence under that says, "EPA does
15 regulate chromium-VI, or hexavalent chromium, as part of
16 the total chromium drinking water standard since 1992."
17 Do you see that?

18 A. Yes.

19 Q. Then let's go down to the next paragraph under
20 -- the next bolded paragraph heading, "What is the
21 current standard for total chromium in drinking water?"
22 The sentence reads, "The current standard is set at 100
23 parts per billion. EPA's regulation assumes that the
24 sample is 100 percent chromium-VI." Do you see that?

25 A. Yes.

1 Q. Were you aware that that was EPA's assumption
2 in setting the hundred part per billion standard?

3 A. I think that is the Office of Water's
4 assumption, that -- you know, people don't necessarily
5 agree with that. It is an Office of Water document,
6 so ---

7 Q. At the time that you were working on the .07
8 part per billion chromium drinking water screening level
9 in North Carolina, were you aware that the view of EPA's
10 Office of Water was that the current 100 part per billion
11 standard regulated one hundred percent chromium-VI?

12 A. No, not necessarily, but I was aware of the
13 fact that EPA looked at it two ways. They looked at it
14 both ways. But I -- go ahead.

15 Q. So we were talking earlier about the National
16 Toxicology Program drinking water studies in mice and
17 rats ---

18 A. Yes.

19 Q. --- in the 2007, 2008 timeframe?

20 A. Yes.

21 Q. And it was your understanding that those
22 studies were the bases of the sources cited in Exhibit
23 505, the e-mail?

24 A. Okay.

25 Q. The California study, the New Jersey study?

1 A. Yes.

2 Q. Okay. Do you know what the lowest dose was
3 that was used in those studies -- the NTP studies for the
4 mice and the rats?

5 A. I haven't memorized it. I would have to go
6 back and look. It is a pretty voluminous study, they
7 would have used different doses. I haven't -- you know,
8 I read it, but it is just not something I would have
9 memorized.

10 Q. All right. That is fair enough. Let me ask
11 you this. So I will represent to you that the lowest
12 dose that they used in that study was 500 micrograms per
13 liter, or 500 parts per billion.

14 A. I would have to read it. I would have to go
15 back and look at it.

16 Q. That is substantially larger than the 100
17 micrograms per liter or 100 parts per billion number that
18 is the MCL, correct?

19 A. Say that again, now?

20 Q. That is substantially -- their lowest dose of
21 500 micrograms per liter was five times what the MCL is
22 for chromium.

23 A. Okay.

24 Q. All right. And then they extrapolated back
25 and did not look at any lower levels; were you aware of

1 that?

2 A. I would have to go back and look at it again.

3 Q. Since these studies were done in 2007 and 2008
4 on the mice and the rats using the lowest dose of 500
5 micrograms per liter for hexavalent chromium, have there
6 been other studies conducted that support a non-linear
7 Mode Of Action for chromium-VI?

8 A. Well, I am sure there has, but, you know,
9 there is a -- they are not what I would call studies that
10 would be accepted by regulatory agencies or EPA. There
11 is -- you know, industry frequently puts forward -- and
12 they are worth reading because they are well thought-out
13 studies. They are not original studies; they are just
14 taking information from the literature in general that
15 exists, and then giving a justification of doing a
16 threshold calculation for cancer and giving an opinion,
17 and then proposing that a threshold level be utilized.

18 So you know, we are aware of those. They do
19 that for many chemicals that have no threshold standards
20 set.

21 Q. I am going to mark our next exhibit, number
22 507 [sic].

23 COURT REPORTER: Six.

24 MR. LONG: Is it? Yes, 506. My mistake.

25 (DEFENDANT EXHIBIT 506 WAS

MARKED FOR IDENTIFICATION.)

BY MR. LONG:

Q. All right, Dr. Rudo. I am handing you what is part of the expert report of Dr. Lisa Bradley, submitted in this case. And I have some questions for you about the references, which start on page D-21. And these are numbered by paragraph, starting on page D-21. Do you see that?

A. Yes. Go ahead.

Q. I want to call your attention to item number 17 on page D-22, the Thompson, et al. study from 2011. Are you familiar with that?

A. No, I am not.

Q. You didn't consider that in setting the health based screening level for hexavalent chromium here?

A. No. I haven't reviewed the Thompson study.

Q. What about item 18?

A. Do you have a copy of it?

Q. No. What about item 18, also by Thompson, et al., from 2011, as well; are you familiar with that publication?

A. See, I don't think these are -- probably not, because they are not -- I don't think they are original studies. I think they are taking data from other studies.

1 Q. Well, let me just ask you, did you ---

2 A. Wait -- wait a second.

3 Q. Well, did you review the studies?

4 A. No. But what it sounds like from the title is
5 that they are taking data from other studies and then
6 just sort of applying, you know, what they feel the Mode
7 Of Action should be based on data from other studies.
8 That to me -- I would have to see the studies, but that,
9 to me, from the title and from what they are looking at,
10 doesn't seem to be original science.

11 So they are basically taking other original
12 science and applying what they feel -- you know, their
13 interpretation of the MOA framework that EPA has to come
14 up with a -- whatever they are coming up with. So that
15 is not something I would review here.

16 Q. Okay. Look at 19. Did you review that one?
17 It is a Thompson, et al., 2012. Have you seen that one?

18 A. No.

19 Q. What about number 20, on the next page?

20 A. No.

21 Q. Thompson, et al., 2012?

22 A. I may have read that one, because it was
23 dealing with genotoxicity, but I am not sure if this was
24 an original study or not. You know, I would also have to
25 see, you know -- there is a lot of studies specifically

1 from Thompson and his group in here. And, you know, I
2 would need to see -- sometimes it is important to
3 understand an approach that people have as to who is
4 sponsoring their work and who they represent. And that
5 -- you know, that is something that, you know, when you
6 are looking at science and you are looking at what they
7 are doing, you consider a lot of times the source. And
8 if they are an industry source -- and this looks like it
9 could be an industry sponsored group -- I would have to
10 look at their studies.

11 Q. What about number 14 on the prior page?

12 A. And I will -- in fact, can I keep a copy of
13 this?

14 Q. Certainly.

15 A. Because I would like to ---

16 Q. If you would look at number 14 ---

17 A. Sure.

18 Q. --- it is the same question. All I am trying
19 to understand is if you have looked at the studies
20 before. I am not trying to get you to characterize them.

21 A. Possibly O'Brien.

22 Q. You may have looked at O'Brien?

23 A. We may have -- we have looked at all the
24 mutagenicity studies we have -- and I may have looked at
25 some of the Thompson studies. We have tried to look at

1 all the mutagenicity studies going back from 2016. We
2 have reviewed quite a number of studies from -- we were
3 interested because -- California, I think, came out in
4 2011. And the EPA document was a draft from 2010. So
5 one of the things that we were interested in doing when
6 we started doing our literature search was to take it up
7 through -- well, originally, 2015, and now 2016, to see
8 what other studies have come out during that period of
9 time, so that we could update our understanding of the
10 literature.

11 And primarily we limited it to original
12 studies. And a lot of the mutagenicity studies we would
13 -- you know, some of the Thompson mutagenicity studies
14 may indeed be original studies that we have either looked
15 at or need to look at.

16 Q. What about the -- on page D-23, Item 25, the
17 Thompson study from 2015? Have you looked at that one?

18 A. Probably not, because it -- it doesn't seem to
19 be a -- strictly a mutagenicity study. It seems to be a
20 mechanistic study.

21 Q. What about number 26, Thompson from 2015?

22 A. We may have looked at that one.

23 Q. You may have looked at that one?

24 A. Yeah.

25 Q. And what about item number 27, Thompson from

1 2015, did you look at that one?

2 A. We may have, because it was a -- if it was a
3 micronucleus paper, we would be interested in that.

4 Q. What about item 7, Kopec and others, from
5 2012? Did you look at that one?

6 A. I would have to look. It is possible.

7 Q. And what about number 8, Kopec and others,
8 also from 2012, did you look at that?

9 A. Probably not. Not that one, no.

10 Q. Did you look at any studies that indicated
11 that there is a threshold effect for hexavalent chromium
12 in terms of cancer risk?

13 A. I have looked at studies that discussed that.
14 But for the most part, because a lot of those studies
15 that seem to look at threshold effects tend to be
16 dismissive of a chemical's mutagenicity because it --
17 unless it is -- if a chemical -- if you are looking at
18 mutagenicity and you are trying to determine whether you
19 are seeing a threshold effect for the mutagenicity or
20 non-threshold effect, it is almost like you have to show
21 that if you are considering an MOA, that for the -- oh,
22 how shall I put this?

23 For the threshold effect, you would have to
24 show that it is not only in one case, maybe, something
25 that you can show, but that it would be applicable upon

1 repetition in the human population. That is mostly the
2 problem that we see when we evaluate mutagenic chemicals
3 of which a threshold approach is put forward. Either
4 they are dismissing the mutagenicity of the chemical to
5 allow them to show a threshold effect based on other
6 studies, which is mostly the case, or they might be able
7 to show an instance where in this particular study --
8 maybe with a certain human cell line or something like
9 that, they have shown a threshold that they may see, but
10 that haven't -- they haven't repeated it throughout the
11 population to take into account intra-individual
12 variability of the human population.

13 So those are the -- you know, when you are
14 dealing with a chemical that is a non-mutagenic impact,
15 then in all probability, a threshold approach may be
16 appropriate, especially if the cancer is, say, by a
17 proliferative mechanism. Then you would probably use a
18 threshold. Because there is truly a specific level of
19 that chemical that is causing a change in cells to such a
20 degree that that could induce cancer, you know, from a
21 non-mutagenic, non-genotoxic approach.

22 But it is very -- it has been very hard -- I
23 mean, that is the current way -- you know, there is no
24 need to go into that. I will leave my answer where it
25 is.

1 Q. Are you aware of what the standard for
2 hexavalent chromium is in Canada?

3 A. I am not really that concerned with what the
4 level of hexavalent chromium is in Canada. I am really
5 not. I am more concerned with the level of hexavalent
6 chromium in North Carolina drinking water, the impact it
7 may have on people, the approach that we used in North
8 Carolina to calculate it.

9 There have been times I have looked at Health
10 Canada data and found it wanting. There have been times
11 I have looked at Health Canada information and found it
12 good. So ---

13 Q. Did you look at it in this case?

14 A. I am not concerned with it in this case.

15 Q. Well, I am not asking if it bothers you, I
16 just wanted to know ---

17 A. (Interposing) I didn't -- I didn't look at it
18 because it was not a concern of mine. It wasn't an issue
19 to compare what every -- in other words, we didn't need
20 to look at what the other 49 states were doing with
21 hexavalent chromium. We were more interested in what did
22 the scientific literature tell us, what was the result of
23 that scientific literature.

24 And in the instances where it had been
25 evaluated in depth, which was really just California that

1 we saw, you know, what did we think of their evaluation?
2 What did we think of the studies that they used? What
3 did we think -- were the key studies that they pulled out
4 the appropriate key studies? Was their interpretation of
5 those key studies consistent with how we would interpret
6 it? Those are the things that we look for.

7 Q. Did you look at the fact that California has a
8 groundwater standard of 10 parts per billion for
9 hexavalent chromium?

10 A. Yes. I was well aware of that.

11 Q. Okay. And did that factor at all into your
12 analysis in this case?

13 A. No, because that is a regulatory standard,
14 that is not a health standard.

15 Q. Is that the lowest standard in the country
16 that you are aware of?

17 A. That, I am not sure of.

18 Q. Let me show you what has been marked as
19 Exhibit 292. Dr. Rudo, you talked this morning about
20 some sort of understanding or agreements between the
21 department you worked in and the North Carolina
22 Department of Environmental and Natural Resources about
23 how to do Health Based or Health Risk Evaluations. Do
24 you recall that testimony?

25 A. Yes.

1 Q. Okay. This exhibit, previously marked as 292,
2 have you seen it before?

3 A. Yes.

4 Q. And what does it represent, to your
5 understanding?

6 A. This was an agreement between our Division of
7 Public Health and the DENR Division of Waste Management
8 on the approach to calculating standards for Health Risk
9 Evaluations in North Carolina.

10 Q. Is it still in effect, to your understanding?

11 A. It is. And I think certain things will
12 superceded it, like the CAMA Rule sort of superceded some
13 of the details that were involved in this. But on the
14 other hand, while it superceded it, it was also
15 consistent with it in -- to some degree.

16 Q. And there was reference to the CAMA Standards.
17 I have got a copy of that, as well, if you want to look
18 at that. We can mark this as Exhibit 507.

19 (DEFENDANT EXHIBIT 507 WAS
20 MARKED FOR IDENTIFICATION.)

21 All right, Dr. Rudo, I will not ask you any
22 legal questions.

23 A. Thank you.

24 Q. Nor will I ask you to summarize this document
25 and get back to me on it. My question is about

1 subsection (d), which is -- these pages are not numbered
2 -- seventh from the end.

3 A. Which page?

4 Q. If you count seven pages in from the back.

5 A. Go ahead.

6 Q. So are these the approaches that you were
7 using in developing the health based screening levels,
8 set forth in subsections (d) and (e)?

9 (Witness peruses document.)

10 A. I think that this was the approach that was
11 used by both Departments.

12 Q. I am sorry?

13 A. By both Departments, yes.

14 Q. By both Departments? Okay. The item number
15 (d) (1) refers to the "Systemic threshold concentration
16 calculated as follows." Do you see that?

17 A. Yes.

18 Q. All right. And then there is -- part of that
19 calculation is a 2 liters per day average water
20 consumption?

21 A. Yes.

22 Q. Do you have an idea of how many people
23 actually do consume 2 liters per day?

24 A. No. And the truth of the matter is that the 2
25 liters a day -- we are in the process of updating that,

1 because this was, I think, based on I think it was a 1997
2 EPA Exposure Factor Handbook. And they have since come
3 out, I think, a couple of years ago, with an updated
4 Exposure Factor Handbook, which -- it updates a lot of
5 the basic exposure parameters that we -- that we have
6 routinely utilized.

7 So I think the 2 liters a day has been updated
8 based on surveys that EPA and other parties have done on
9 consumption of water by both adults, children, men,
10 women, that kind of thing. So this was the default that
11 was used pretty much up until the point where the updated
12 Exposure Factor Handbook was used. But we haven't had
13 the opportunity to get this re-incorporated into the law
14 yet.

15 Q. I am sorry, do you know in which direction
16 that is being changed?

17 A. I would have to go back and look, because we
18 are not using it. I haven't focused on it. When we are
19 asked to make that change, part of how we make the change
20 will be in defense of why we are asking for it. And at
21 that time, I will do the review and have the appropriate
22 peer reviewed literature to go along with that.

23 Q. Can you pass me Exhibit 505, your e-mail? I
24 want to ask you a couple more questions about that.

25 A. Is that the one from Sandy?

1 Q. Yes. It is the one from Sandy to Megan
2 Davies, Chris Hoke. Mina Shehee is copied as well as
3 you. Just give me a second.

4 (Pause.)

5 All right. That e-mail indicates that the
6 source of the cancer slope factor included, among other
7 things, the 2010 draft EPA assessment. Is that right?

8 A. Okay. Yes.

9 Q. And in looking at the references in the CAMA
10 Regulation -- I am sorry, the 2L Regulation, subsection
11 (e), it lists the references in order of preference that
12 are to be used in establishing the concentrations of
13 substances under these rules. Do you see that?

14 A. Yes.

15 Q. And the first is the Integrated Risk
16 Information System, USEPA?

17 A. Yes.

18 Q. All right. And it lists (2), (3) and (4);
19 Health Advisories for the USEPA Office of Drinking Water,
20 (3) Other health risk assessment data published by the
21 USEPA, and (4) Other relevant published health risk
22 assessment data and scientifically valid peer reviewed
23 published toxicological data. Let me start with that
24 last category. Has the draft that was relied upon
25 completed its peer review yet?

1 A. Which one? Which one are you -- what are
2 you ---

3 Q. The EPA draft of 2010?

4 A. No, I don't think -- well, let me -- I think
5 they are finished, but I think it is just -- there is
6 other reasons why it hasn't been finalized. From what I
7 understand, it has been pretty much completed for quite a
8 while, but they are not allowed -- there are factors at
9 work, I think, that are keeping it from being formally
10 okayed.

11 Q. These references, in order of preference,
12 (e) (1), (2), (3) and (4) do not speak to the use of draft
13 documents for EPA, do they?

14 A. No, they don't.

15 MR. LONG: I think we are up to Exhibit
16 508.

17 (DEFENDANT EXHIBIT 508 WAS
18 MARKED FOR IDENTIFICATION.)

19 Do you recognize Exhibit 508, Dr. Rudo?

20 A. Yes.

21 Q. All right. And this is an excerpt of the EPA
22 draft toxicological study that was one of the documents
23 relied upon for the hexavalent chromium calculation that
24 we have been talking about today, is that right?

25 A. Yes.

1 Q. And it has got a header on it that says,
2 "Draft - Do Not Cite or Quote." Is that right?

3 A. Yes.

4 Q. And, in fact, it has that on the same page
5 where -- on page 229 it lists the oral slope factor,
6 right?

7 (Witness peruses document.)

8 A. Yes.

9 Q. And that is -- in the last line of paragraph
10 5.3.4, that talks about the cancer slope factor of 0.5,
11 correct?

12 A. Yes.

13 Q. All right. And it says, "it is based on the
14 incidence of neoplasms in the small intestines of male
15 mice." Is that referring back to the NTP studies we were
16 talking about earlier in this examination?

17 A. I believe it does, yes. And there is also --
18 while you mentioned that, there is a recent publication
19 that I have somewhere in here where they have also
20 updated the review of the 2008 study and concurred with
21 it. I am sorry. I didn't mean to throw you off your
22 train of thought.

23 Q. Let me show you Exhibit 509.

24 (DEFENDANT EXHIBIT 509 WAS
25 MARKED FOR IDENTIFICATION.)

1 All right. I am showing you what has been
2 marked as Exhibit 509. And this is an e-mail, on the
3 first page of which -- you are welcome to look at
4 anything you want to ---

5 A. No, I remember this very well.

6 Q. Okay. So this is from October of 2014, an
7 e-mail from Bruce Parris to Mina Shehee and yourself,
8 copying Jay Zimmerman and Andrew Pittner, right?

9 A. Yes.

10 Q. And in it, in the second or the third
11 sentence, he says, "Since the 2L total chromium standard
12 health risks are calculated based on the toxicity of
13 hexavalent chromium, the NCDENR may not need to have a
14 specific hexavalent chromium health advisory statement."
15 Do you see that?

16 A. Where is that now? I am sorry.

17 Q. It is in the first paragraph at the top of the
18 first page of Exhibit 509, the third sentence.

19 A. Are you talking about this page -- the first
20 page?

21 Q. Yes.

22 A. Go ahead and say it again.

23 Q. "Since the 2L total chromium standard health
24 risks are calculated based on the toxicity of hexavalent
25 chromium" ---

1 A. Uh-huh.

2 Q. --- do you see that?

3 A. Yes.

4 Q. Okay. My question is were you aware that the
5 2L Standard calculated by NC DEQ relied upon the toxicity
6 of hexavalent chromium?

7 A. Yes.

8 Q. Was that something that you considered in
9 doing your work in this case?

10 A. Yes.

11 Q. Okay. And it goes on to say, "Jay Zimmerman
12 will discuss this issue with you further to determine if
13 we need to pursue this further"?

14 A. Yes.

15 Q. All right. What were those conversations?

16 A. Well, this was -- this was, you know, when we
17 were trying to get some guidance from everybody on
18 whether we should go forward with calculating a health
19 protective value for hexavalent chromium, because of the
20 fact that Bruce -- I guess it was Bruce that brought to
21 my attention the wells that were contaminated with
22 hexavalent chromium around the Buck Station.

23 And he also -- if you read further in this
24 e-mail, Bruce was saying that he -- you know, he felt
25 that we might need to calculate a broader health advisory

1 statement protective for hexavalent chromium, that that
2 might be more appropriate for these. And additional
3 samples would be collected in the immediate future.

4 So, you know, this was something -- I think
5 Bruce felt, to a certain degree ,that we probably needed
6 to do this, come up with something for hexavalent
7 chromium. I think both DENR and our Department
8 understood very well that 10 is an outdated standard. It
9 is not based on cancer. It is -- it needs to be updated,
10 and that if we were going to do something for an MCL, we
11 would probably have to have something recalculated,
12 because 100 was outdated. That was based on dermal
13 effects, I believe.

14 So both 10 and 100 were outdated standards
15 done a long time ago. And -- so it was sort of left up
16 -- you know, Bruce and I both, as you can see from the
17 e-mail, put out the fact that, you know, "Well, we might
18 need to do this." And then it was left to those above
19 our station to determine whether or not they wanted us to
20 go ahead and, as of October, 2014, calculate something.

21 But two months later, you know, there is other
22 e-mails we have looked at from Jay Zimmerman, who is
23 agreeing with us about the .07. So it is -- you know,
24 this is something that, you know, was moving along over
25 time.

1 And I wanted to say one thing, because you are
2 asking a lot -- you know, you are bringing up documents,
3 and then you are sort of asking a question and then sort
4 of leaving it open. So, you know, sometimes I am not
5 getting a chance to sort of answer it in a way I think,
6 you know, I may want to answer it.

7 But when you were looking at the law and the
8 rule, and I think -- I understand you want to make the
9 point about the draft document and how it is used and
10 whether it is used. But if you look at the rule -- the
11 CAMA Rule, and you look at the section that you pointed
12 out on the use of information, you will see that (3) and
13 (4) in those sections talk about other health risk
14 assessment data published by USEPA -- and that was the
15 regional screening levels that have been published that
16 were used that had the same cancer slope factor. And
17 number (4) talks about other relevant published health
18 risk assessment data, scientifically valid peer-reviewed
19 published tox data. And that is what we used from
20 California and the general literature.

21 So we, in essence, you know, abided by, you
22 know, the approach to doing this. So it is -- in other
23 words, the draft document is not the sole source. We
24 didn't rely on it. It is not something we relied on in
25 the absence of everything else. It was something that we

1 read, it had science in there.

2 Q. i have another document to show you, Exhibit
3 510.

4 (DEFENDANT EXHIBIT 510 WAS
5 MARKED FOR IDENTIFICATION.)

6 All right. This is Exhibit 510, an e-mail
7 from Mr. Andrew Pittner to Bruce Parris that refers to a
8 telephone call that Mr. Pittner says he had with you. Do
9 you recall that telephone call around this timeframe,
10 November of 2014?

11 A. I don't recall the call specifically, but I
12 recall what was going on with this, yes.

13 Q. Okay. Take a look at the document. And it is
14 a short e-mail, mostly contained on that first page. And
15 I will have some questions for you when you are ready.

16 (Witness peruses document.)

17 A. Go ahead.

18 Q. Okay. First question is about vanadium. It
19 indicates that around this timeframe you had apparently
20 settled on 18 parts per billion as the line to be drawn
21 for vanadium HRES, is that right?

22 A. That -- I have explained earlier, that was the
23 initial calculation that was done according to what was
24 done by DENR.

25 Q. And you subsequently settled on a different

1 number after that?

2 A. Well, it is -- we -- I think I explained it
3 earlier in the day. I don't know if I want to go through
4 the lengthy explanation. But initially, when these were
5 brought to our attention, we were -- according to the
6 agreement we had, we had Dave Lilly and Hanna Assefa do
7 the calculation based on the criteria that they use. I
8 think this was pre-CAMA.

9 And that was the number that came back in,
10 because that was based on, I believe, the latest IRIS
11 references. So they were basing it on the latest IRIS
12 reference dose, even though there was an existing IMAC.
13 And later on, when we were asked to do this on a wider
14 scale for -- by DENR, and we realized that there was an
15 existing IMAC, and Connie Brower brought that to our
16 attention, we went back into the literature. And based
17 on our review of the literature, we utilized what was
18 considered a probably more appropriate reference dose
19 from a more recent EPA document, because the IRIS data
20 was dated.

21 Q. You talked earlier today about the decision to
22 withdraw the "do not drink" letters that involved Dr.
23 Williams. Do you have any personal knowledge of what
24 data Mr. [sic] Williams may have consulted in that
25 process?

1 A. Just pretty much what he discussed he relied
2 on in his deposition and from what we were -- he
3 discussed in the newspapers that he was relying on.

4 Q. You have talked about the -- a meeting between
5 Dr. Williams and Dr. Shehee on or about February 23rd or
6 24th of this year, along the same topic?

7 A. Correct.

8 Q. Do you recall that testimony?

9 A. That was -- yes, go ahead.

10 Q. Do you have -- did you participate in that
11 meeting?

12 A. No.

13 Q. Do you have any personal knowledge what was
14 said in that meeting?

15 A. I have -- the information I have in that
16 meeting was based on what Dr. Williams stated -- what
17 Randall stated in his deposition, and my discussions, you
18 know, with Dr. Shehee, who was at that meeting.

19 Q. Did you -- you said that Mr. Reeder had some
20 data that he was referring to or relying to [sic] in
21 these discussions about the withdrawal of those letters.
22 Did you review that data?

23 A. We never saw that data.

24 Q. Okay. So you don't have any personal
25 knowledge of what data he may have been relying on?

1 A. Just the information that came out -- excuse
2 me. I am starting to get a little raw here -- just the
3 information that came out through the deposition.

4 Q. And I understand that you didn't have any
5 conversations with Dr. Williams about the withdrawal
6 letter, is that right?

7 A. That is correct.

8 Q. You talked about the fact that some additional
9 language was included in the 118 Health Risk Evaluation
10 forms that went out while you were on vacation. Do you
11 recall that testimony?

12 A. Yes.

13 Q. Do you have any personal knowledge of who made
14 the decision to include that language?

15 A. I was told where the request for that came
16 from, and that they were pushing very -- that DENR and
17 Reeder were pushing aggressively for that language, and
18 our Department essentially just said, "All right."

19 Q. All right. But do you have any personal
20 knowledge of what occurred in those communications?

21 A. No, just what Dr. Shehee told me.

22 Q. Am I correct that you have a list of the
23 actual studies or science that you relied on in the
24 development of the health based screening levels?

25 A. I don't have a list. I have the papers.

1 Q. You have the papers. So we can -- do you have
2 those in front of you, or ---

3 A. I brought some with me that would be
4 appropriate for probably what we would discuss today. I
5 have others back in my office. I did have a -- my office
6 flooded three times between Christmas and the end of --
7 the middle of February, and I lost probably half of my
8 chromium, vanadium and coal ash file in the flood. So a
9 lot of those papers probably would be in there. So I
10 would probably have to go back and I could go back and
11 get those again for you.

12 MR. LONG: All right. I note that it is
13 5:00 o'clock. And I have been instructed that you have a
14 hard stop, as well as Anita, so we can go off the record,
15 wrap this up for today. We want to hold it open as well
16 and find some time to come back and finish.

17 (THE DEPOSITION WAS ADJOURNED AT 5:01 P.M.
18 TO RECONVENE AT AN UNSPECIFIED LATER TIME AND
19 DATE.)

S I G N A T U R E

I HAVE READ THE FOREGOING PAGES 9 THROUGH 218 WHICH CONTAIN A CORRECT TRANSCRIPT OF THE ANSWERS MADE TO THE QUESTIONS HEREIN RECORDED. MY SIGNATURE IS SUBJECT TO CORRECTIONS ON ATTACHED ERRATA SHEET, IF ANY.

(SIGNATURE OF KENNETH M. RUDO, Ph.D.)

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COUNTY OF _____

I CERTIFY THAT THE FOLLOWING PERSON PERSONALLY APPEARED BEFORE ME THIS DAY, AND I HAVE PERSONAL KNOWLEDGE OF THE IDENTITY OF THE PRINCIPAL OR HAVE SEEN SATISFACTORY EVIDENCE OF THE PRINCIPAL'S IDENTITY, OR A CREDIBLE WITNESS KNOWN TO ME HAS SWORN TO THE IDENTITY OF THE PRINCIPAL, ACKNOWLEDGING TO ME THAT HE OR SHE VOLUNTARILY SIGNED THE FOREGOING DOCUMENT FOR THE PURPOSE STATED HEREIN AND IN THE CAPACITY INDICATED:

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NOTARY NUMBER 19960030065
MY COMMISSION EXPIRES FEBRUARY 15, 2021

STATE OF NORTH CAROLINA

COUNTY OF NASH

C E R T I F I C A T E

I, MICHAEL B. CARTER, NOTARY PUBLIC-REPORTER, DO
HEREBY CERTIFY THAT KENNETH M. RUDO, Ph.D. WAS DULY SWORN
BY ME PRIOR TO THE TAKING OF THE FOREGOING DEPOSITION,
THAT THE IDENTITY OF THE WITNESS WAS VERIFIED, THAT SAID
DEPOSITION WAS TAKEN BY ME AND TRANSCRIBED UNDER MY
DIRECTION, AND THAT THE FOREGOING PAGES 9 THROUGH 218
CONSTITUTE A TRUE AND CORRECT TRANSCRIPT OF THE TESTIMONY
OF THE WITNESS.

I DO FURTHER CERTIFY THAT I AM NOT COUNSEL FOR
OR IN THE EMPLOYMENT OF ANY OF THE PARTIES TO THIS ACTION,
NOR AM I INTERESTED IN THE RESULTS OF THIS ACTION.

I DO FURTHER CERTIFY THAT THE STIPULATIONS
CONTAINED HEREIN WERE ENTERED INTO BY COUNSEL IN MY
PRESENCE.

IN WITNESS WHEREOF, I HAVE HEREUNTO SET MY HAND
THIS 16TH DAY OF JULY, 2016.

MICHAEL B. CARTER
NOTARY PUBLIC FOR THE
STATE OF NORTH CAROLINA
NOTARY NUMBER 19960030065
MY COMMISSION EXPIRES
FEBRUARY 15, 2021