
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.) DEPOSITION OF MINA
) WALLIN SHEHEE, Ph.D.

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.)

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.)

WEDNESDAY, APRIL 27, 2016

ROOM 301
NORTH CAROLINA DEPARTMENT OF JUSTICE
114 WEST EDENTON STREET
RALEIGH, NORTH CAROLINA
9:17 A.M.

VOLUME 1

PAGES 1 THROUGH 172

A P P E A R A N C E S

ON BEHALF OF THE PLAINTIFF:

ROY A. COOPER, III
ATTORNEY GENERAL FOR THE STATE OF NORTH CAROLINA
BY: ANITA LeVEAUX, SPECIAL DEPUTY ATTORNEY GENERAL
ENVIRONMENTAL DIVISION
GERALD ROBBINS, SPECIAL DEPUTY ATTORNEY
GENERAL
PUBLIC SAFETY SECTION
JOHN P. BARKLEY, ASSISTANT ATTORNEY GENERAL
HEALTH AND PUBLIC ASSISTANCE SECTION
NORTH CAROLINA DEPARTMENT OF JUSTICE
POST OFFICE BOX 629
RALEIGH, NORTH CAROLINA 27602-0629
919/716-6500

ANDREW J. NORTON, ASSISTANT GENERAL COUNSEL
NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL
QUALITY
217 WEST JONES STREET
RALEIGH, NORTH CAROLINA 27603
919/707-8613

ON BEHALF OF THE PLAINTIFF-INTERVENORS:

MYRA BLAKE, STAFF ATTORNEY
NICHOLAS S. TORREY, STAFF ATTORNEY
LESLIE GRIFFITH, ASSOCIATE ATTORNEY
SOUTHERN ENVIRONMENTAL LAW CENTER
601 WEST ROSEMARY STREET, SUITE 220
CHAPEL HILL, NORTH CAROLINA 27516-2356
919/967-1450

ON BEHALF OF THE DEFENDANT DUKE ENERGY:

NASH E. LONG, ESQUIRE
HUNTON & WILLIAMS, LLP
BANK OF AMERICA PLAZA
101 TRYON STREET, SUITE 3500
CHARLOTTE, NORTH CAROLINA 28280
704/378-4707

A P P E A R A N C E S
(CONTINUED)

MICHELLE S. SPAK
ASSOCIATE GENERAL COUNSEL
DUKE ENERGY
DEC45A
550 SOUTH TRYON STREET
CHARLOTTE, NORTH CAROLINA 28202
980/373-3698

COURT REPORTER:

MICHAEL B. CARTER
PRECISION REPORTING & TRANSCRIBING, INC.
POST OFFICE BOX 1659
SPRING HOPE, NORTH CAROLINA 27882
252/478-6968
FAX: 252/478-6984
CELL: 919/215-3501

T A B L E O F C O N T E N T SWITNESSDIRECTMINA WILLAN SHEHEE

BY MS. BLAKE	7-147
BY MR. LONG	147-169

EXHIBITS

<u>NUMBER</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
---------------	--------------------	-------------

PLAINTIFF-INTERVENORS

274	EQUATION WORKSHEET FOR HEXAVALENT CHROMIUM GROUND WATER STANDARD (NO RSC FACTOR INCLUDED IN CARCINOGEN CALCULATION (2 PAGES)	25
275	EQUATION WORKSHEET FOR CHROMIUM 6 GROUND WATER STANDARD (2 PAGES)	27
276	LETTER DATED MARCH 11, 2016 FROM RANDALL RANDALL WILLIAMS AND TOM REEDER DEAR WELL OWNER - WITHDRAWAL OF "DO NOT DRINK" USAGE RECOMMENDATION (2 PAGES)	86
277	SYNTERRA CORRECTIVE ACTION PLAN (PART 2) FOR MAYO STEAM ELECTRIC PLANT DATED FEBRUARY 2016 PAGE 5-15 (1 PAGE)	97
278	SALISBURY-ROWAN 2013 DRINKING WATER QUALITY REPORT (2 PAGES)	104
279	LETTER DATED JUNE 4, 2015, FROM DEBRA WATTS TO B59 MARCOS ALBARRAN & NORA R. GUITERREZ RE: RESULTS OF WATER SUPPLY WELL SAMPLING AND HEALTH RISK EVALUATION PLUS ATTACHMENTS (37 PAGES)	106

DEFENDANT

280	E-MAIL DATED 8/20/15 FROM MINA SHEHEE TO MEGAN DAVIES RE: ADDITIONAL THOUGHTS (1 PAGE - HANDWRITTEN 303)	164
-----	--	-----

EXHIBITS (CONT'D)DEFENDANT

<u>NUMBER</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
281	E-MAIL CHAIN DATED 8/21/15 FROM CHANDRIKA RAO TO RICK LANGLEY AND MINA SHEHEE RE: HEALTH STUDY (2 PAGES -314, 315)	166
282	HEXAVALENT CHROMIUM INFORMATION SHEET (2 PAGES - 436, 437)	168

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.

P R O C E E D I N G S

(WHEREUPON,

MINA WALLIN SHEHEE, 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 9:17 A.M.

BY MS. BLAKE:

Q. Good morning. My name is Myra Blake. I am an
attorney for the conservation groups in this matter.
Thank you so much for being here this morning to speak
with us.

A. My apologies.

Q. No problem, it happens. Could you state your
full name for the record?

A. Mina Wallin Shehee.

MS. BLAKE: And I just want to note before
we begin talking that counsel have agreed to bring
forward the stipulations from the previous depositions in
this matter. That is just a legal precedent.

BY MS. BLAKE:

Q. And how many times have you -- have you been
deposed before, ever, Dr. Shehee?

A. No.

Q. Never?

(Witness nods negatively.)

1 Q. Did your counsel explain the deposition
2 protocol to you?

3 A. Yes.

4 Q. So you know that you are under oath right now?

5 A. Yes.

6 Q. And even though we are in an informal setting
7 here, your answers carry the same weight and have the
8 same effect as if they were stated in a courtroom before
9 a judge?

10 A. Yes.

11 Q. And for the sake of the court reporter, please
12 try to answer each question verbally and avoid using
13 gestures; does that make sense?

14 A. Yes.

15 Q. And if you don't understand a question at all
16 please say so, and I will try to rephrase so that it
17 makes more sense. Do you understand that your attorney
18 may object to questions?

19 A. Yes.

20 Q. And he may instruct you not to answer, but if
21 he does not, then you can answer the question.

22 A. Okay.

23 Q. Does that make sense?

24 A. Yes.

25 Q. And if you need a break at any time, just let

1 me know. And if I am in the middle of a line of
2 questioning, we might get to the end of that and then we
3 will take a break as soon as we can; does that sound
4 good?

5 A. Yes.

6 Q. Is there anything at all that would prevent
7 you from giving full and accurate testimony today?

8 A. No.

9 Q. Before we begin, do you have any questions for
10 me?

11 A. No.

12 Q. Did you do anything to prepare for this
13 deposition?

14 A. Yes.

15 Q. Tell me about that.

16 A. I went over my e-mails.

17 Q. About how much time did you spend preparing?

18 A. About six hours -- a lot of e-mails.

19 Q. I understand. Did your review of documents
20 bring anything to your memory that is worth noting?

21 A. No.

22 Q. Did your review of the e-mails cause you to
23 change any recollections in any way?

24 A. No.

25 Q. Are you prepared today to answer questions

1 related to health standards and your role at DHHS?

2 A. Yes.

3 Q. Are you currently an employee of the
4 Department of Health and Human Services?

5 A. Yes.

6 Q. What is your position?

7 A. Environmental Program Manager I.

8 Q. Is there an Environmental Program Manager II?

9 A. Yes.

10 Q. Who is that?

11 A. That is -- that is in DENR. I am the only
12 Environmental Program Manager, as far as I can recollect.

13 Q. I see. Do you know the name of the Manager in
14 DENR?

15 A. Don't know.

16 Q. And what are your qualifications or training
17 for your position as Environmental Program Manager?

18 A. I received a Doctorate in Environmental
19 Science and Engineering at the University of North
20 Carolina in 2002; did a post-doc in the University of
21 North Carolina in the department of Environmental
22 Sciences and Engineering, and then I came to work for
23 DHHS in 2003 as a temporary, and then worked my way
24 through various positions to the position I am at right
25 now.

1 Q. What were some of the other positions that you
2 held?

3 A. Public Health Epidemiologist, Environmental
4 Program Supervisor IV.

5 Q. And do you have any other training or any
6 other degrees or anything like that?

7 A. I have a Master's in Medical Science from
8 Emory University in Clinical Microbiology. I have a
9 Bachelor of Arts from St. Cloud State University in St.
10 Cloud, Minnesota.

11 Q. And what are your duties as Environmental
12 Program Manager I?

13 A. Make sure that people have resources, have
14 adequate personnel and guidance.

15 Q. And what sort of matters do you provide
16 guidance in?

17 A. Resources, personnel issues, and any type of
18 technical issue that needs to be resolved between
19 individuals within the branch.

20 Q. Who is your supervisor?

21 A. Dr. Megan Davies.

22 Q. And who do you oversee at DHHS? Who do you
23 supervise?

24 A. You want me to name everybody?

25 Q. Could you give me a rough number of people?

1 A. Twenty.

2 Q. And in general, what kind of positions do
3 those twenty people hold?

4 A. We have a medical consultant, a nurse
5 consultant, an environmental toxicologist, a public
6 health educator, a public health epidemiologist,
7 environmental program consultants, administrative
8 assistants.

9 Q. And were you employed anywhere before joining
10 DHHS?

11 A. I worked at the University of North Carolina,
12 Chapel Hill, in the Virology and Environmental
13 Microbiology laboratory in the Department of Sciences and
14 Engineering, as a research assistant, and was a research
15 associate.

16 Q. And have you published any papers?

17 A. Yes, I have published papers.

18 Q. What is your most recent paper?

19 A. I believe my most recent one is the one on the
20 use of well water and the importance of well water in
21 testing.

22 Q. Can you briefly describe your conclusions in
23 that paper?

24 A. We recommend that people test for well water
25 constituents, because a lot of people in North Carolina

1 do not test for them, and that for the safety and the
2 health and welfare of their families, it is best to test
3 periodically. We are finding that we test new wells in
4 North Carolina, but there is no requirement for existing
5 well owners to test.

6 Q. What prompted you to write that paper?

7 A. I -- I don't recall.

8 Q. And were there any co-authors on that paper?

9 A. Nirmala Barrows (phonetic)-- and that is the
10 extent of my memory right now. I just don't recall every
11 body on the paper. It may have been Ken Rider
12 (phonetic), I don't know. I don't remember. I don't
13 remember.

14 Q. And who is Nirmala Barrows?

15 A. Nirmala Barrows? She was a Public Health
16 Epidemiologist with a background in Environmental Health.
17 She has recently found a job with U.S. EPA. She no
18 longer works with us.

19 Q. And what was the reason for leaving?

20 A. She got a job at U.S. EPA.

21 Q. Okay, just so I am clear on that. Are you
22 familiar with the Health Base Screening Levels developed
23 by DHHS?

24 A. Yes.

25 Q. What are Health Base Screening Levels?

1 A. Health Base Screening Levels are
2 non-regulatory levels that provide protection for people
3 from exposure to contaminants.

4 Q. And how do they provide protection? You said
5 they provide protection, do they ---

6 A. (Interposing) They are established at levels
7 that would not anticipate any adverse health effects.

8 Q. And why does DHHS develop screening levels?

9 MR. ROBBINS: Objection, if she knows.

10 THE WITNESS: I don't know.

11 BY MS. BLAKE:

12 Q. And have you been involved in the development
13 of any screening levels at DHHS?

14 A. Yes.

15 Q. Can you tell me about that?

16 A. My role was to make sure that we followed the
17 existing guidelines and procedures.

18 Q. And can you tell me what contaminants you were
19 developing health screening levels for?

20 A. In what context?

21 Q. Most recently? You said -- to back up a
22 little bit, you said you were involved in developing some
23 Health Base Screening levels and making sure that they
24 followed the guidelines?

25 A. Just -- just for the coal ash.

1 Q. And which contaminants were those?

2 A. Hexavalent chromium and vanadium.

3 Q. Were you involved in any screening level
4 development before that?

5 A. I don't recall.

6 Q. And do you know why DHHS was developing
7 screening levels for coal ash contaminants?

8 MR. ROBBINS: Objection.

9 THE WITNESS: No.

10 BY MS. BLAKE:

11 Q. How do Health Base Screening Levels, in
12 general, compare to North Carolina groundwater standards?

13 A. Health Screening Levels are calculated using
14 the 2L Rules, which includes the groundwater standards,
15 the Interim Maximum Allowable Concentrations. And so it
16 is a part of the rule itself. And that is the process.

17 Q. Does DHHS develop Health Screening Levels
18 regularly?

19 A. Not regularly.

20 Q. What prompts the development of a Screening
21 Level, or in what circumstances would DHHS initiate
22 development of a Screening Level?

23 A. If there is not an MCL, we follow the 2L. And
24 if there is not a 2L then we follow IMAC. We don't
25 follow IMAC for carcinogen, we follow the calculation in

1 the 2L rule.

2 Q. What is your understanding of how North
3 Carolina Groundwater Standards are developed?

4 A. What do you mean by "understanding"? Can you
5 clarify that for me?

6 Q. Sure. Could you describe in your own words
7 how -- the guidelines for setting groundwater standards
8 in North Carolina?

9 MS. LeVEAUX: Objection.

10 BY MS. BLAKE:

11 Q. And you can go ahead and answer unless counsel
12 instructs you not to.

13 A. I don't know how to answer the question.

14 Q. Would it help to have a copy of the North
15 Carolina 2L Rules to review?

16 A. No. I just don't understand the question.

17 Q. Sure. Do you understand the standards for
18 setting 2L Rules, or ---

19 A. (Interposing) There is a paragraph in there
20 that states in there that the Division Director, you can
21 petition for -- a variety of different people can
22 petition to have certain standards set or certain
23 proposal -- I am going to correct that -- proposed.

24 Q. And when the Agency is developing a 2L
25 standard, what is the -- what are the steps that they go

1 through to decide what the level should be?

2 MS. LeVEAUX: Objection.

3 THE WITNESS: I don't know.

4 BY MS. BLAKE:

5 Q. And when DHHS is developing a Health Screening
6 Level, what are the steps that they go through to
7 decide ---

8 A. (Interposing) We follow the 2L Rule. If it is
9 not an MCL, then the 2L standard. If there is not an
10 Interim -- I am going to call it IMAC for short -- then
11 we use the calculation that is stipulated in the Rule.

12 Q. And can you state for the record what that
13 calculation is?

14 A. Not off the top of my head, no.

15 Q. Let me pass you a copy. We won't introduce
16 this as an exhibit because it is just a copy of the 2L
17 Rules for you to review.

18 (Witness peruses document.)

19 And please let me know once you have had a
20 chance to take a look and refamiliarize yourself with the
21 six options that the 2L Rules -- 2L Standards are
22 established under.

23 A. Yes.

24 Q. And do the 2L Rules state that "Groundwater
25 quality standards are established as the least of" -- and

1 then lists six different criteria?

2 A. I see it under item (d) -- there is no
3 reference number here -- (d), 1 through 6, paragraph (f).

4 Q. Great. And are these the criteria that DHHS
5 uses to set the Health Base Screening Levels?

6 A. Number 1, number 2, 5, 6.

7 Q. What is number 1 -- the Systemic threshold
8 concentration?

9 A. That is a question for my toxicologist. My
10 toxicologists run the numbers.

11 Q. And can you explain in layperson terms what
12 number 2 means, "Concentration which corresponds to
13 incremental lifetime cancer risk of 1×10^{-6} "?

14 A. The concentration at which there may be one
15 case of cancer in a million.

16 Q. Why is the standard set at one in a million?

17 A. I don't know.

18 Q. Is that the typical standard that is used to
19 determine whether a cancer risk exists?

20 MR. ROBBINS: Objection.

21 THE WITNESS: Yes.

22 BY MS. BLAKE:

23 Q. Is the one in a million risk threshold used
24 anywhere besides in North Carolina?

25 A. Yes.

1 Q. Can you give any examples?

2 A. U.S. EPA.

3 Q. Any other examples?

4 A. I don't recall.

5 Q. That is fine. So the standards -- the
6 Groundwater Rules say that the groundwater quality
7 standards should be established as the least of these six
8 criteria. Does that mean the most protective?

9 MS. LeVEAUX: Objection.

10 MR. ROBBINS: Objection.

11 MR. LONG: Join.

12 BY MS. BLAKE:

13 Q. There were a lot of objections, but ---

14 A. Okay. Can you repeat the question, please?

15 Q. Certainly. So the Groundwater Rules state
16 that the groundwater quality standards must be
17 established as the least of the six criteria. What does
18 "the least of" mean?

19 MR. ROBBINS: Objection.

20 MS. LeVEAUX: Objection.

21 MR. LONG: Join.

22 THE WITNESS: I don't know what that means.

23 BY MS. BLAKE:

24 Q. Is it part of your responsibility to be able
25 to help interpret rules ---

1 A. (Interposing) Yes.

2 MS. LeVEAUX: Objection.

3 BY MS. BLAKE:

4 Q. --- such as these? And so if one of your
5 supervisees asked you for guidance as to what that phrase
6 meant, what would you tell them?

7 MS. LeVEAUX: Objection.

8 MR. ROBBINS: Objection.

9 MR. LONG: Join.

10 (Witness peruses document.)

11 THE WITNESS: The "least of" would be
12 considered the most health protective.

13 BY MS. BLAKE:

14 Q. And so one of the criteria we talked about was
15 the one in a million risk. Another one that is listed
16 there, number 5, is the Maximum Contaminant Level. Does
17 that refer to Federal Maximum Contaminant Levels?

18 A. Yes.

19 Q. And what would have to happen under the 2L
20 Rules if the one in a million cancer risk level was lower
21 than the Federal, I will call it, the MCL?

22 MS. LeVEAUX: Objection.

23 MR. ROBBINS: Objection.

24 MR. LONG: Join.

25 THE WITNESS: We would use the MCL.

1 BY MS. BLAKE:

2 Q. So if the cancer risk -- the one in a million
3 cancer risk was a lower number -- was the least of these
4 six, and the MCL was higher, which one would you use?

5 MR. ROBBINS: Objection.

6 MS. LeVEAUX: Objection.

7 THE WITNESS: THE MCL.

8 BY MS. BLAKE:

9 Q. And is that consistent with the 2L Rules?

10 MR. LONG: Objection.

11 MS. LeVEAUX: Objection.

12 THE WITNESS: No.

13 BY MS. BLAKE:

14 Q. Are you familiar with the health problems
15 associated with hexavalent chromium?

16 A. Yes.

17 Q. Can you tell me, just in general terms, what
18 some of those health problems are?

19 A. I am going -- I can't recall every one,
20 because I am a little nervous.

21 Q. I understand.

22 A. One of the things that -- that I had --- that
23 comes is sperm damage. That is the only thing I can
24 remember.

25 Q. Are there any cancer effects that hexavalent

1 chromium is associated with?

2 A. Yes. Stomach cancer and small intestine --
3 small intestine and stomach ulcers, and that is all I can
4 recall right now.

5 Q. And has -- you mentioned earlier that DHHS
6 developed a Health Base Screening Level for hexavalent
7 chromium?

8 A. Yes.

9 Q. What is that level?

10 A. 0.07 micrograms per liter or parts per
11 billion, which I will use "ppb" as a shortcut.

12 Q. Excellent. What is that 0.07 ppb level based
13 on?

14 A. It is based on a reference dose, and it is
15 based on the calculation in the 2L Rule.

16 Q. Is it based on the one in a million risk
17 level?

18 A. Yes.

19 Q. So we will come back to the calculation in
20 just a second.

21 A. Sure.

22 Q. If drinking water contains more than .07 ppb
23 of hexavalent chromium, the cancer risk would be greater
24 than one in a million, is that right?

25 A. That is correct.

1 Q. And if drinking water contained levels as high
2 as 20 parts per billion, the risk would be much higher,
3 is that right?

4 A. Yes.

5 Q. Do you know off the top of your head what the
6 cancer risk would be for well water that is contaminated
7 with 20 parts per billion of hexavalent chromium?

8 MR. ROBBINS: Objection.

9 MR. BARKLEY: Objection.

10 MS. LeVEAUX: Objection.

11 THE WITNESS: No.

12 BY MS. BLAKE:

13 Q. Is that something that DHHS has calculated?

14 MR. ROBBINS: Objection.

15 THE WITNESS: No.

16 BY MS. BLAKE:

17 Q. Does a cancer risk closer to 1 in 3,000 sound
18 right to you?

19 MS. LeVEAUX: Objection.

20 MR. ROBBINS: Objection.

21 MR. BARKLEY: Objection.

22 THE WITNESS: It is a -- it is a logarithmic
23 type of increase in risk. I think that the Law 10 of
24 numbers. When you go to .7, the risk is one in one
25 hundred thousand. At 7 it is one ten thousand. And at

1 70 it is one in a thousand, if said that correct. But is
2 a logarithmic or base 10 increase.

3 BY MS. BLAKE:

4 Q. I see, okay. When did North Carolina develop
5 hexavalent chromium screening levels?

6 A. 2015.

7 Q. And I would like to hand you a document to be
8 marked Exhibit 274. And this is going to be an Excel
9 spreadsheet showing calculations of the one in a million
10 risk threshold for hexavalent chromium.

11 (PLAINTIFF-INTERVENOR EXHIBIT 274 WAS
12 MARKED FOR IDENTIFICATION.)

13 I will give you a moment to review. Just let
14 me know when you have had a chance to familiarize
15 yourself.

16 (Witness peruses document.)

17 A. Yes.

18 Q. Do you recognize this Excel spreadsheet?

19 A. Yes.

20 Q. And could you briefly state for the record
21 what it is?

22 A. This is a spreadsheet that was developed by
23 one of our Risk Assessors to calculate different types of
24 carcinogen and non-carcinogen for a contaminant. It is
25 primarily used for site specific contaminants.

1 Q. And does this appear to be a fair and accurate
2 copy of that ---

3 A. (Interposing) Yes.

4 Q. --- that calculation?

5 A. Yes.

6 Q. Who was the Risk Assessor?

7 A. Sandra Mort.

8 Q. And what is her role?

9 A. She no longer works with us.

10 Q. What was her role?

11 A. She was officially in the Industrial Hygiene
12 Consultant position, which is often used for Health Risk
13 Assessors.

14 Q. And what were her qualifications for that?

15 A. She has a Master's degree. I don't know off
16 the top of my head what it was in. And she is a doctoral
17 student at North Carolina State University.

18 Q. And is this the -- if I understand correctly,
19 the standard calculation spreadsheet for determining one
20 in a million health risk?

21 A. It is used for site specific contaminants and
22 can be adapted to be used for a variety of different
23 scenarios.

24 Q. I see. And which contaminant do the
25 calculations relate to here?

1 (Witness peruses document.)

2 A. Source of the Cancer Slope Factor -- it says
3 midway -- IRIS draft hexavalent chromium document from
4 2010. That is what it is identified as right here
5 (indicating).

6 Q. So this is the calculation for hexavalent
7 chromium?

8 A. Yes.

9 Q. And you mentioned that this can be adapted for
10 site specific purposes. Do you know what site specific
11 modifications were made?

12 A. I don't know.

13 Q. Who would know?

14 A. Sandy Mort.

15 Q. Would anyone else know?

16 A. Not off the top of my head, I don't recall.

17 Q. And I would also like to give you another
18 document to be marked Exhibit 275.

19 (PLAINTIFF-INTERVENOR EXHIBIT 275 WAS
20 MARKED FOR IDENTIFICATION.)

21 (Witness peruses document.)

22 And have you had a chance to take a look at
23 this document?

24 A. Yes.

25 Q. Do you recognize this Excel spreadsheet?

1 A. No.

2 Q. Are you aware of any calculations of the one
3 in a million cancer risk for hexavalent chromium that
4 were done by the Division of Waste Management?

5 A. No.

6 Q. Do you know whether DHHS coordinated with the
7 Division of Waste Management in ---

8 A. (Interposing) Yes.

9 Q. --- creating -- I see. And what role did the
10 Division of Waste Management play in the creation or the
11 calculation of the one in a million standard?

12 MS. LeVEAUX: Objection.

13 MR. ROBBINS: Objection.

14 THE WITNESS: The Division of Waste
15 Management provided us with assistance on the
16 calculation. We do that with the Division of Waste
17 Management often to make sure that we are using good
18 levels -- Cancer Slope Factors and other such things of
19 the calculation, just to double check to make sure that
20 we are calculating it correctly, you know, within the 2L
21 Standard.

22 BY MS. BLAKE:

23 Q. And did the Division of Waste Management
24 confirm the calculations that DHHS performed?

25 MR. ROBBINS: Objection.

1 MS. LeVEAUX: Objection.

2 THE WITNESS: Yes.

3 BY MS. BLAKE:

4 Q. Who besides Sandra Mort was involved in the
5 calculation of the ---

6 A. (Interposing) Dr. Ken Rudo.

7 Q. And just to clarify, I am speaking about the
8 calculation of the hexavalent chromium standard, just for
9 the record. Was there anyone besides Dr. Ken Rudo?

10 A. I don't recall.

11 Q. Do you recall who, at the Division of Waste
12 Management, was also working on confirming this?

13 A. Yes.

14 Q. Who was that?

15 A. Hanna Assefa and Dave Lilley.

16 Q. And what qualifications does Hanna Assefa
17 have?

18 MS. LeVEAUX: Objection.

19 THE WITNESS: I don't know.

20 MS. LeVEAUX: If she knows.

21 BY MS. BLAKE:

22 Q. What qualifications ---

23 A. (Interposing) I don't know.

24 Q. What qualification does David Lilley have?

25 A. I don't know.

1 Q. Was anyone else at the Department of
2 Environmental Quality involved in the calculation of the
3 hexavalent chromium standard?

4 A. Not that I -- not that I recall.

5 Q. Were there any discussions with anyone besides
6 the two individuals at the Division of Waste Management
7 -- was there any discussion with anyone at DEQ about the
8 standard?

9 MS. LeVEAUX: Objection.

10 THE WITNESS: Yes.

11 MS. BLAKE:

12 Q. Tell me about those discussion.

13 A. If you could be more specific, it is a broad
14 question.

15 Q. Were there any discussions with anyone at DEQ
16 about what the appropriate Health Base Screening Level
17 for hexavalent chromium was?

18 MS. LeVEAUX: Objection.

19 MR. ROBBINS: Objection.

20 THE WITNESS: Yes.

21 BY MS. BLAKE:

22 Q. Were you part of those discussions?

23 A. Yes.

24 Q. Can you tell me the names of any individuals
25 at DEQ who were part of the discussions?

1 A. Jay Zimmerman, Connie Brower, Bob Midgette,
2 Tom Reeder. That is all I can recall.

3 Q. Let's go backwards. Do you recall what Tom
4 Reeder's position was on the appropriate hexavalent
5 chromium screening level?

6 A. I don't know what his position was.

7 Q. Do you recall what he said in the discussions
8 about ---

9 A. (Interposing) Yes.

10 Q. What did he say?

11 A. "Give them what they want."

12 Q. Who is "they"?

13 A. DHHS.

14 Q. And what did DHHS want?

15 A. They wanted to have the hexavalent chromium
16 level to be at .07 parts per billion -- ppb.

17 Q. And why did DHHS want that?

18 A. Because it is health protective.

19 Q. Do you recall what Jay Zimmerman's statements
20 were in those discussions?

21 A. No.

22 Q. What about Connie Brower?

23 A. Connie Brower wanted us to use the 2L level
24 for vanadium, the IMAC -- I can't recall off the top of
25 my head, but she wanted us to use the 0.3 parts per

1 billion for vanadium.

2 Q. Did she have any position on hexavalent
3 chromium?

4 A. Not that I recall.

5 Q. Did anyone at DEQ offer an alternate numerical
6 standard for hexavalent chromium?

7 A. I can't recall.

8 Q. Did anyone at DEQ express any doubts about
9 the ---

10 A. (Interposing) Yes.

11 MS. LeVEAUX: Objection.

12 BY MS. BLAKE:

13 Q. And this is about the .07 level.

14 A. Yes, ma'am.

15 MS. LeVEAUX: Objection.

16 BY MS. BLAKE:

17 Q. What were some of those doubts?

18 MS. LeVEAUX: Objection.

19 THE WITNESS: I don't recall.

20 BY MS. BLAKE:

21 Q. Do you know who at DEQ expressed doubts?

22 MS. LeVEAUX: Objection.

23 THE WITNESS: Bob Midgette, Tom Reeder.

24 Those are the only ones I can remember off the top of my
25 head.

1 BY MS. BLAKE:

2 Q. And do you know the general nature of those
3 statements that you are thinking of?

4 A. The only one that I can recall was, "If we
5 give bottled water to residents, how do we know that the
6 bottled water doesn't contain a larger number or a higher
7 concentration of hexavalent chromium as compared to the
8 water that they are consuming now?" That is the only --
9 all I can recall.

10 Q. And how was that resolved?

11 A. It was not resolved.

12 Q. Did either agency review test results of
13 bottled water companies?

14 A. No.

15 Q. Are you aware of any bottled water companies
16 that have tested water with more than 20 parts per
17 billion ---

18 A. (Interposing) No.

19 Q. --- of hexavalent chromium? Was anyone at DEQ
20 aware of any bottled water company that had tested ---

21 A. (Interposing) I don't know.

22 MS. LeVEAUX: Objection.

23 MR. ROBBINS: Objection.

24 BY MS. BLAKE:

25 Q. Turning back to Exhibit 274, the spreadsheet

1 that was developed by Sandra Mort, do you see the part of
2 the spreadsheet that says "q1* = carcinogenic potency
3 factor"?

4 A. Yes.

5 Q. What is a carcinogenic potency factor?

6 A. That would be a toxicologist question.

7 Q. Do you know what the source of the
8 carcinogenic potency factor was?

9 A. It says on the form that "The IRIS draft
10 hexavalent chromium document (2010) & EPA RSL value" is
11 the source of the Cancer Slope Factor. CSF means Cancer
12 Slope Factor.

13 Q. And what is the Integrated Risk Information
14 System -- the IRIS?

15 A. IRIS is a system that -- in a very superficial
16 way that I know of, is where my toxicologists get their
17 information about a contaminant. And they use that to
18 help them in establishing certain concentrations,
19 depending on the media that is being looked at.

20 Q. And so the IRIS is the standard place that you
21 would look?

22 A. Yes.

23 Q. Is that what EPA looks to to develop its ---

24 A. (Interposing) I don't know. I don't know.

25 Q. And could you take a look at Exhibit 275, the

1 spreadsheet that was developed by the Division of Waste
2 Management, and tell me in your own words what the source
3 of the carcinogenic potency factor was for those
4 calculations?

5 (Witness peruses document.)

6 A. It says on the sheet that the "Public Health
7 Goal for Hexavalent Chromium in Drinking Water,
8 California EPA, July 2011, found at" a link that is
9 referenced.

10 Q. And does it also, a little bit further down,
11 refer in addition to the Integrated Risk Information
12 System?

13 (Witness peruses document.)

14 A. I -- can you ask the question again?

15 Q. Yes, certainly. Do there appear to be any
16 other sources in the rows below the source that you just
17 read?

18 A. Yes, there is one right here (indicating).

19 Q. And what is that additional source?

20 A. It is *Journal of Applied Toxicology*.

21 Q. Okay. And there is also reference to the
22 Integrated Risk Information System?

23 A. Yes.

24 Q. And so does it appear that using slightly
25 different sources, the calculations came to the same

1 result of .07 ppb?

2 MR. ROBBINS: Objection.

3 MR. LONG: Objection.

4 MS. LeVEAUX: Objection.

5 THE WITNESS: According to the GWQS -- I
6 have to look at this carefully -- how many zeros they
7 put. It appears to be the same number on the sheets.

8 BY MS. BLAKE:

9 Q. And backing up a little bit, what
10 qualifications does a person need in order to be able to
11 calculate something like the one in a million risk
12 threshold for a contaminant? What degrees or training do
13 they need?

14 A. I don't think there is an established degree
15 or a training criteria.

16 Q. Can anyone come up with a cancer factor?

17 MS. LeVEAUX: Objection.

18 THE WITNESS: I can only speak for my group.
19 I can't speak for other groups.

20 BY MS. BLAKE:

21 Q. Okay. In your group, who has the training ---

22 A. (Interposing) Well, we hire someone as a Risk
23 Assessor in the Division of Public Health, either someone
24 with a Bachelor's -- it depends on the position. If it
25 is an Industrial Hygiene Consultant, the OSHR will have

1 certain requirements for that position. In DHHS, we have
2 shifted from using the Industrial Hygiene Consultant
3 position to the Environmental Program Consultant because
4 it has a better listing of qualification that meets the
5 needs that we need for a Risk Assessor in Public Health.

6 So we use the OSHR qualifications for people.
7 If they meet those qualifications, then they can get
8 through the system. And we will look at them to be a
9 Risk Assessor. So we follow OSHR minimum requirement
10 guidelines for hiring practices.

11 Q. And, I guess, are there any particular areas
12 of expertise that are in those qualifications in those
13 guidelines?

14 A. For my group only, if you are a Risk Assessor,
15 we would like you to have some Public Health Risk
16 Assessment experience. It is not required, but we would
17 like to have.

18 Q. And did the individuals who developed the
19 Health Base Screening Level for hexavalent chromium meet
20 those qualifications?

21 A. I can only speak for my group only. Sandra
22 Mort, yes, and Ken Rudo, yes.

23 Q. Is there anyone else in DHHS who has those
24 qualifications?

25 A. We have recent hires.

1 Q. Who are those individuals?

2 A. Beth Dittman, Jamie Pritchett -- he is a
3 temporary -- and Kennedy Holt, who is also a temporary.

4 Q. And what position does Dr. Randall Williams
5 hold at DHHS?

6 A. He is the Deputy Secretary for the Department
7 of Health and Human Services. He is also the State
8 Health Director.

9 Q. And does he have the qualifications to make a
10 Risk Assessment?

11 A. I don't know all of his qualifications.

12 Q. What qualifications do you know of?

13 A. He is a medical doctor.

14 Q. What kind of medical doctor?

15 A. He is an OB/GYN. That is all I know.

16 Q. Do you know of any Risk Assessors that have
17 been employed at DHHS during your time there that are no
18 longer at DHHS, aside from Sandra Mort?

19 A. I don't recall. That is the only one I can
20 recall right now. I want to correct that. Lou Ann
21 Williams.

22 Q. Do you recall what her position was?

23 A. She was an Environmental Toxicologist.

24 Q. And how long ago did she leave DHHS?

25 A. It has been awhile. I don't know the exact

1 year, but it has been a while.

2 Q. Do you know why she left?

3 A. She went to work in the Pharmacy at the
4 University of North Carolina, Chapel Hill.

5 Q. Are cancer potency factors ever based on
6 studies on animals?

7 A. Yes.

8 Q. Why is that?

9 A. I don't know why.

10 Q. Is it standard scientific practice to rely on
11 animal studies?

12 A. Yes.

13 Q. As a general matter, are experimental studies
14 preferable to non-experimental studies?

15 MR. LONG: Object to the form.

16 MS. LeVEAUX: Objection.

17 THE WITNESS: What is "non-experimental
18 studies"? I am not sure what you mean by that.

19 BY MS. BLAKE:

20 Q. Something like a correlational study?

21 MR. LONG: Same objection.

22 MS. LeVEAUX: Objection.

23 THE WITNESS: I don't recall, but there is
24 an order in which you do things. I don't recall that at
25 this time.

1 BY MS. BLAKE:

2 Q. Are you aware of any experimental studies
3 where groups of humans are randomized and some are
4 exposed ---

5 A. (Interposing) No.

6 Q. --- to carcinogens? Would that be sound
7 scientific practice?

8 A. I don't know how to answer that question
9 because I don't understand the question.

10 Q. Maybe a better question would be, would it be
11 ethical ---

12 A. (Interposing) To experiment on humans?

13 Q. Yes, with potential carcinogens?

14 A. No.

15 Q. Are there any experimental studies in rats and
16 mice for hexavalent chromium?

17 A. Yes.

18 Q. Did the individuals at DHHS who developed the
19 hexavalent chromium standard consider those studies in
20 setting the standard?

21 A. You will have to ask the toxicologist.

22 Q. Do you know whether the risk of cancer from
23 hexavalent chromium is based only on mice studies and not
24 on ---

25 A. (Interposing) I don't recall.

1 Q. --- human studies? Is it true that the
2 National Toxicology Program of the U.S. Department of
3 Health and Human Services has stated that hexavalent
4 chromium is known to be a human carcinogen based on
5 sufficient evidence of carcinogenicity from studies in
6 humans?

7 MS. LeVEAUX: Objection.

8 MR. ROBBINS: Objection.

9 THE WITNESS: Studies in humans? No.

10 BY MS. BLAKE:

11 Q. You aren't aware of that statement?

12 MR. ROBBINS: Objection.

13 MS LeVEAUX: Objection.

14 THE WITNESS: No, just rats and mice. I am
15 familiar with the animal studies but not with any human
16 studies.

17 BY MS. BLAKE:

18 Q. Okay.

19 A. And I want to clarify that statement. For
20 oral ingestion, not inhalation.

21 Q. So you aren't familiar with the correlational
22 studies in other countries showing increased cancer
23 levels when individuals are exposed to hexavalent
24 chromium in water?

25 MR. ROBBINS: Objection.

1 THE WITNESS: No.

2 BY MS. BLAKE:

3 Q. In setting the screening level for hexavalent
4 chromium, did DHHS consider the cumulative effects of
5 pollutants and hexavalent chromium?

6 A. That would be a question for my toxicologist.

7 Q. So the toxicologist would be the one charged
8 with making that determination of whether to consider ---

9 A. (Interposing) Yes.

10 Q. --- cumulative effects?

11 A. He is my expert.

12 Q. Are you familiar with the general concept that
13 pollutants -- when individuals are exposed to multiple
14 pollutants, those can have a synergistic effect that can
15 increase the risk beyond ---

16 A. (Interposing) Yes.

17 Q. --- just the effects of the pollutants?

18 A. Yes.

19 Q. Do you know how large this effect can be?

20 A. No.

21 Q. Are you aware of studies showing that it can
22 increase the risk by a factor of 4?

23 VOICE: Objection.

24 THE WITNESS: No.

25 BY MS. BLAKE:

1 Q. In setting the hexavalent chromium screening
2 level did your toxicologist consider sensitive
3 sub-populations?

4 A. Yes.

5 Q. Do you know which categories the ---

6 A. (Interposing) Children.

7 Q. Did they consider pregnant mothers?

8 A. That would be a question for my toxicologist
9 to answer.

10 Q. Do you know of any other specially vulnerable
11 populations that they would ---

12 A. For what contaminant?

13 Q. --- consider? For hexavalent chromium?

14 A. Not off the top of my head, no.

15 Q. So we have been at this for about an hour,
16 would you like to take a short five minute break?

17 A. Yes.

18 MS. BLAKE: OFF THE RECORD. 10:16 A.M.

19 (A BRIEF RECESS WAS TAKEN.)

20 MS. BLAKE: ON THE RECORD. 10:24 A.M.

21 BY MS. BLAKE:

22 Q. Dr. Shehee, what was your role in the
23 development of the hexavalent chromium Health Screening
24 Level?

25 A. My role for -- we call this a project. I am

1 going to refer to this as the project because, in our
2 eyes, it is a specific project. My role in this was to
3 provide resources, to provide guidance and making sure
4 that people stayed within their lanes. And what I mean
5 by that is that they did their jobs, only their jobs, and
6 don't go outside the bounds of their job.

7 Q. Can you give me an example of staying in the
8 lane?

9 A. Staying in the lane is like, you do the risk
10 assessment and do the risk assessment alone.

11 Q. What are some examples of things that the
12 individuals doing the risk assessment would not do?

13 A. A Risk Management decision.

14 Q. What is a Risk Management decision?

15 A. Is an action or something that is outside the
16 bounds of the guidance that we were given. And we
17 wouldn't want to do anything outside the guidance that we
18 were provided by our leadership.

19 Q. And what guidance were you provided?

20 A. What standards to use.

21 Q. And what were those standards?

22 A. To use the 2L Rules in making the health risk
23 evaluation and the Health Screening Levels that we used.

24 Q. And would that include the six criteria that
25 we were speaking about earlier?

1 A. Yes.

2 Q. The one in a million risk thresholds?

3 A. Yes.

4 Q. And under the 2L Rules, and under this
5 guidance that you were given, would you choose the most
6 protective of the criteria listed?

7 A. Yes.

8 Q. And so if the one in a million risk threshold
9 was more protective than, for example, the MCL, you would
10 use the one in a million risk threshold?

11 LeVEAUX: Objection.

12 MR. ROBBINS: Objection.

13 THE WITNESS: The hexavalent chromium does
14 not have an MCL. So, therefore, under the criteria if it
15 doesn't have an MCL, then we use the 2L standards, if
16 they don't have a 2L, then we use the IMAC. If we don't
17 have an IMAC, then we use the calculation.

18 BY MS. BLAKE:

19 Q. So was there any more specific guidance given,
20 other than following the 2L Rules?

21 A. I don't recall.

22 Q. And who was the guidance given by?

23 A. My boss, Dr. Megan Davies.

24 Q. And was she responding to guidance from anyone
25 else?

1 A. I wouldn't -- I don't know.

2 Q. And you earlier mentioned Risk Management
3 decisions. Can you give me some additional examples of
4 what a Risk Management decision would be?

5 A. It would depend on the circumstances, but in
6 general, in the Risk Management/Risk Assessment
7 framework, risk assessment or health screening is a very
8 small part of the entire Risk Management framework. The
9 Risk Management framework is where decisions are made as
10 far as actions to be taken. It considers economics, it
11 considers social factors and it considers a lot of
12 different criteria for risk managers to make decisions
13 regarding the risk assessment. The purpose of the risk
14 assessment is to provide information to risk managers.

15 Q. And who are some of the risk managers who were
16 involved in the hexavalent chromium?

17 A. The initial one would be me. That would be
18 the basic one, to make sure that the risk assessment was
19 information that could be given to the risk managers. It
20 could be any policy maker. And the way health risk
21 evaluations are made, the ultimate risk manager is the
22 well owner -- the person who drinks the well water. That
23 is the ultimate risk manager.

24 Q. And you said that you were the ---

25 A. (Interposing) Initial.

1 Q. --- initial risk manager. What decisions did
2 you make as the initial risk manager?

3 A. Making sure that procedures were followed.
4 Making sure that we vetted our number and our
5 calculations. Making sure that the Centers for Disease
6 Control verified our number for Cancer Slope Factor, and
7 such procedural things like that. Making sure the
8 procedures were being followed, and that my people did
9 follow those procedures.

10 Q. And the CDC did verify the number?

11 A. They -- the Cancer Slope Factor was -- and I
12 don't recall the exact wording, but yes.

13 Q. And that was for hexavalent chromium?

14 A. Yes.

15 Q. And are there any other risk managers who have
16 made decision related to hexavalent chromium since
17 that ---

18 A. (Interposing) At my level, that is the only
19 one I know of. Our customer was the Department of
20 Environmental Quality. And we provided -- they are the
21 ones who requested the information from us.

22 Q. And when you say you were the initial risk
23 manager, what time frame was that for hexavalent
24 chromium?

25 A. I would say between November of 2014 to March

1 of 2015.

2 Q. And what happened in November of '14 that
3 initiated the process?

4 A. That was when we started getting verbal
5 concerns from the Regional Office for DEQ about
6 hexavalent chromium and community concerns.

7 Q. Can you describe those concerns?

8 A. I don't recall. I don't recall exactly. It
9 was just the statement "community concerns."

10 Q. Were these communities around coal ash ponds?

11 A. The concerns about hexavalent chromium were
12 surrounded by sampling that was done by the Riverkeeper
13 and Duke Energy. That is all I know. That is the extent
14 of my knowledge on that.

15 Q. Do you remember which Regional DEQ office?

16 A. I don't recall off the top of my head.

17 Q. And you said that your initial role as Risk
18 Manager ran from November 2014 to March of 2015. What
19 happened ---

20 A. (Interposing) For hexavalent chromium.

21 Q. For hexavalent chromium. What happened during
22 that time period?

23 A. During that time period, we met with DENR, or
24 DEQ. We talked about sampling. We talked about
25 detection limits. We talked about how this information

1 should be conveyed to the public.

2 Q. And what was said about how the information
3 should be conveyed to the public?

4 A. The information conveyed to the public is our
5 current Health Risk Evaluation that was sent to the
6 homeowners through DENR. And when I say DENR: and DEQ.
7 It is an adjustment for me. I mean the same agency.

8 Q. For all of us.

9 A. Yes.

10 Q. And can you tell me a little bit more about
11 the discussions that went into the Health Risk
12 Evaluation?

13 A. That is a big -- they were big discussions.
14 If you could be more specific, that would be helpful.

15 Q. Sure. What was DEQ's position on the Health
16 Risk Evaluations?

17 MS. LeVEAUX: Objection.

18 THE WITNESS: That is a big question, also.
19 Can you be more specific, please?

20 BY MS. BLAKE:

21 Q. I guess a place to start would be who came up
22 with the idea to send Health Risk Evaluations to the
23 residents whose wells tested higher on the screening
24 levels?

25 A. I -- say that question again. I didn't catch

1 all of that.

2 Q. Who made the decision or who proposed the idea
3 of sending Health Risk Evaluations to the individuals who
4 had the contamination in their wells?

5 A. That would be our office. It was -- the
6 Health Risk Evaluations in patterned by our new Well
7 Water Health Evaluations, which are forms that we have
8 used for several years vetted, through our local health
9 departments, and have been used for the constituents for
10 the new well water rule.

11 Q. And did anyone at the Department of
12 Environmental Quality express any reservations about
13 sending the Health Risk Evaluations ---

14 A. I wouldn't know ---

15 MS. LeVEAUX: Objection.

16 THE WITNESS: I wouldn't have -- I wouldn't
17 know about reservations.

18 BY MS. BLAKE:

19 Q. Who at DHHS would know about any reservations
20 that DEQ had?

21 MS. LeVEAUX: Objection.

22 THE WITNESS: I don't know.

23 BY MS. BLAKE:

24 Q. But DEQ would not have conveyed those
25 reservations to you?

1 MS. LeVEAUX: Objection.

2 THE WITNESS: It depends on what your term
3 -- can you explain what you mean by "reservations"?

4 BY MS. BLAKE:

5 Q. Sure. Any disagreement about the Health Risk
6 Evaluations.

7 MS. LeVEAUX: Objection.

8 THE WITNESS: I wouldn't say disagreement.

9 BY MS. BLAKE:

10 Q. Any changes that they thought should be made?

11 A. Yes.

12 Q. What were some of the changes?

13 A. They wanted to put on the form -- on the
14 bottom of the form, where it talked about the hexavalent
15 chromium and the MCL and the Safe Drinking Water Act. I
16 would have to look at the form to repeat everything else
17 on there.

18 Q. And did that ultimately end up on the Health
19 Risk Evaluations ---

20 A. (Interposing) Yes.

21 Q. --- that went out to residents?

22 A. Yes.

23 Q. And could you state generally what it says
24 about hexavalent chromium and MCL's?

25 A. The only thing I recall is that we recommend

1 not to use your water for drinking or cooking.

2 Q. When did those Health Risk Evaluations first
3 go out to residents at ---

4 A. (Interposing) I don't know the exact date.
5 The initial ones went out approximately in the month of
6 May.

7 Q. And you said that you were the Risk Manager
8 for hexavalent chromium until March of 2015. Did someone
9 else become the Risk Manager after March of 2015?

10 A. A Risk Manager as far as the calculation was
11 concerned. I will clarify that.

12 Q. And so were the calculations concluded in
13 March of 2015 for hexavalent chromium ---

14 A. (Interposing) To the best of my knowledge.

15 Q. And what was that final decision on the Health
16 Screening Level calculations for hexavalent chromium?

17 A. 0.07 part per billion.

18 Q. And that was the screening level that you
19 approved?

20 A. That was the screening level that we
21 recommended and went through a vetting process by which
22 we informed our Risk Managers and -- all the way up the
23 Department, and made sure that the calculations were --
24 in using that 2L formula that is listed there, and making
25 -- you know, and vetting that with the Division of Waste

1 Management, and then vetting our Cancer Slope Factor with
2 CDC -- Center for Disease Control and Prevention --
3 and ---

4 Q. So it sounds like it was heavily vetted?

5 A. Yes.

6 Q. And who within DHHS made the final approval of
7 that screening level?

8 A. The approval process at the Department was
9 made through a -- I don't know what word to call it --
10 but scrutiny by our legal counsel.

11 Q. And just to make sure I am understanding
12 correctly, did the legal counsel have the final say in
13 the approval of the hexavalent chromium screening level?

14 MR. ROBBINS: Objection.

15 THE WITNESS: The final approval of that
16 project -- I don't know. I don't know the role of
17 counsel on that process.

18 BY MS. BLAKE:

19 Q. And so who had to give the project the stamp
20 of approval before the Health Risk Evaluations were sent
21 out?

22 A. It would be departmental. I would -- I am
23 assuming certain things. People that I can't recall a
24 specific name. For example, I can't say that it was
25 exactly the Secretary came up to me and then said that.

1 It went up and down the chain of command. So I -- you
2 know, that is -- I didn't hear the exact words, you know,
3 that the Secretary approved of this. We did go through
4 the Secretary's office, and we scrutinized and vetted
5 through our legal counsel.

6 Q. And who was the Secretary at that time?

7 A. Dr. Wos.

8 Q. So just making sure I understand, was it a --
9 it sounds like it wasn't a single person who gave a final
10 approval. Was it more of a consensus within the
11 Department?

12 A. Yes.

13 Q. And since there are two departments here, the
14 Department of Health and Human Services?

15 A. Yes.

16 Q. Did the Department of Environmental Quality
17 object in any way to the screening level for hexavalent
18 chromium?

19 A. Can you be more specific? The word
20 "objection," it is a very broad -- it is very broad.

21 Q. Well, let's see. Backing up a little bit,
22 what level of review did the Department of Environmental
23 Quality have of the screening level for hexavalent
24 chromium?

25 A. The Department of Environmental Quality,

1 number one, requested that we provide this to them.

2 Number two, the Division of water Resources -- or Waste
3 Management vetted our calculations on their process.

4 Q. And so once the Department of Health and Human
5 Services had decided that .07 was the appropriate
6 screening level for hexavalent chromium, after the
7 vetting process, did the Department of Environmental
8 Quality have anything further to say?

9 A. I don't recall.

10 MS. LeVEAUX: Objection.

11 THE WITNESS: I don't recall.

12 BY MS. BLAKE:

13 Q. And you said that the Department of
14 Environmental Quality was the customer in this situation?

15 A. That is correct.

16 Q. Can you explain that a little bit more? Was
17 the Department of Health and Human Services preparing the
18 hexavalent chromium screening level on behalf of the
19 Department of Environmental Quality?

20 A. The Department of Health and Human Services
21 provides health risk evaluations on its own regard. The
22 reason for that is ours is health based and
23 non-regulatory, and are health protective. The request
24 -- we have a variety of different customers. Sometime
25 health risk evaluations can have several customers.

1 For example, we may get the request from an
2 agency -- for an agency type risk evaluation. In this
3 case, the Division of Water Resources requested -- Jay
4 Zimmerman requested assistance on that, and we agreed.
5 And the process by which these risk evaluations -- the
6 Department of Environmental Quality did not change our
7 risk, you know, assessments, but were brought along with
8 their documentation that they were -- that they provided
9 to the well owner.

10 So we were -- they provided -- they asked us
11 to do this thing. And then we provide the information.
12 And they mailed it out. The Department of Environmental
13 Quality -- as far as the process goes, they just attached
14 what we gave them and made sure it went to the right
15 homeowner.

16 Q. Who at DHHS signed the Health Risk Evaluation?

17 A. We normally don't sign Health Risk
18 Evaluations, only formal Risk Assessments. The Health
19 form on that is reviewed by two people. We have one Risk
20 Assessor and Toxicologist and they switch off. They look
21 at each other's, making sure that the report that is
22 given and that the Department of Environmental Quality
23 gets us the results of -- the well results, and that we
24 -- you know, we review them.

25 Q. Does the Department of Health and Human

1 Services consider economic factors ---

2 A. (Interposing) No.

3 Q. --- in any way? So the Department of Health
4 and Human Services came up with the .07 part per billion
5 hexavalent chromium risk threshold in March of 2015 or
6 thereabouts?

7 A. Approximately.

8 Q. Or finalized it?

9 A. Yes, approximately.

10 Q. Has the Department of Health and Human
11 Services changed its conclusion that .07 is the
12 appropriate one in a million risk threshold for
13 hexavalent chromium?

14 A. No.

15 Q. Has DHHS revoked the Health Screening Level
16 for hexavalent chromium?

17 A. No.

18 Q. So the safe drinking water level for
19 hexavalent chromium remains .07 parts per billion?

20 MR. LONG: Objection.

21 MR. ROBBINS: Objection.

22 THE WITNESS: Yes.

23 BY MS. BLAKE:

24 Q. Did DEQ ask DHHS to change the Health
25 Screening level for hexavalent chromium?

1 A. I don't know.

2 Q. They did not, to your knowledge?

3 A. Not to my knowledge.

4 Q. Can you describe the health problems
5 associated with vanadium?

6 A. Oh, let's see. What I recall is that vanadium
7 has a non-cancer end point. And right now, at this --
8 this morning, I am just blanking out on that. And I
9 don't recall.

10 Q. That is fine. Is vanadium a possible
11 carcinogen?

12 A. I don't recall.

13 Q. Did DHHS develop a Health Screening Level for
14 vanadium?

15 A. Yes.

16 Q. When did that process begin?

17 A. November, 2014.

18 Q. Same time ---

19 A. Before 2000 -- it was before November 2014.
20 Precisely when -- what month before then, I don't know.

21 Q. And how did that process begin?

22 A. The process began by our toxicologist
23 informing me that the vanadium level should be set at a
24 higher standard in the information that he has. And that
25 is about all I know about the process -- the initial

1 process of that. Once the agreement to do hexavalent --
2 I mean, the project, the standards by which we were going
3 to evaluate for the Health Risk Evaluations would be
4 strictly the process I outlined before where we look at
5 the MCL, we look at the 2L, we look at the IMAC.

6 I was not really involved with that initial
7 process. I was just more informed of it, you know,
8 because it was spits and spatters. And it really wasn't
9 an issue for us at that time. But once guidelines --
10 guidance came down and decided that -- to use the 2L, we
11 stayed in our lane. We stayed in our lane.

12 Q. So you said that there was a toxicologist who
13 was working on this. Who was that toxicologist?

14 A. Ken Rudo.

15 Q. And you said you were not heavily involved in
16 the initial stages?

17 A. That is correct.

18 Q. Who was the Risk Manager who was involved in
19 the initial stages?

20 A. That would be -- that would be me.

21 Q. And backing up a little bit, does North
22 Carolina have an IMAC for vanadium?

23 A. Yes, .3.

24 Q. Why is that IMAC set at .3 parts per billion?

25 A. I don't know exactly why it is .3. I -- I

1 would be speculating.

2 Q. Who at DHHS would know?

3 A. Dr. Rudo.

4 Q. And do you know approximately when the IMAC
5 for vanadium was created?

6 A. I don't recall.

7 Q. Did you have any role in the development of
8 the IMAC?

9 A. No.

10 Q. Did anyone at DHHS?

11 A. I don't know.

12 Q. And you said that Dr. Rudo determined that the
13 vanadium standard should be higher. What does that mean?

14 A. Dr. Rudo informed me that the Health Screening
15 Level for vanadium should be 18 parts per billion.

16 Q. What was that based on?

17 A. I don't recall.

18 Q. And that was around the time frame of 2014?

19 A. Fall of 2014, before we got the request from
20 the Department of Environmental Quality for the project.

21 Q. And when did the request from the Department
22 of Environmental Quality ---

23 A. (Interposing) Verbal -- verbal discussions
24 were at the end of November 2014.

25 Q. And what specifically was the request that DEQ

1 made?

2 A. The Department -- I don't recall the details,
3 but I recall that they requested that we provide them
4 Health Risk Evaluations for this project.

5 Q. Can you walk me through the process of
6 developing the Health Risk Evaluations for vanadium?

7 A. Once we got our information and guidance, I
8 recommended to use the 2L. Once we -- we were going to
9 use that particular process for vanadium, then it was --
10 we were going to be using that, but we wanted to talk to
11 DEQ first before we -- you know, we wanted to talk to
12 DENR about -- that the level, we thought, was too low.

13 Q. And what was the result of those
14 conversations?

15 A. Conversations of that is that the Department
16 of Environmental Quality wanted us to use the published
17 IMAC, and we agreed.

18 Q. And why did you agree to use the published
19 IMAC?

20 A. My toxicologist spoke with Connie Brower. And
21 he said to me that she had a -- a paper that she had.
22 And he read it, and he felt that the .3 was the way to
23 go.

24 Q. Do you know what the paper was?

25 A. I have no idea.

1 Q. And when did DHHS finalize the .3 parts per
2 billion standard?

3 A. I don't recall the exact month, but it was at
4 the very beginning.

5 Q. Of 2015?

6 A. Yes.

7 Q. And who, besides yourself and Dr. Rudo, were
8 involved in the creation of the .3 parts per billion
9 standard?

10 A. We did not create the standard. We agreed to
11 use the published IMAC.

12 Q. Who else at DHHS was involved in that
13 decision?

14 A. I don't recall if there were others.

15 Q. Who else at DEQ was involved?

16 A. The only -- when we talked about the vanadium
17 level I recall Connie Brower in the meeting, and Jay
18 Zimmerman.

19 Q. Was Tom Reeder in any of the meetings?

20 A. No.

21 Q. Do you know why Tom Reeder was involved in the
22 hexavalent chromium meetings but not the vanadium?

23 MS. LeVEAUX: Objection.

24 THE WITNESS: No.

25 BY MS. BLAKE:

1 Q. Has DHHS changed its conclusion that .3 ppb is
2 the appropriate Health Standard for vanadium?

3 A. We have not changed our position.

4 Q. Have you been asked by anyone to change your
5 position?

6 A. In May of 2015, Connie Brower sent me an
7 e-mail suggesting that -- do you want to change the
8 vanadium. And at that time, we said no.

9 Q. Why did she ask you to change the vanadium?

10 A. Because we were doing re-sampling and other
11 types of HRE's still pending to be sent out, and we
12 didn't want to change mid-course.

13 Q. Do you know why she ---

14 A. (Interposing) No.

15 Q. --- why she wanted you to change?

16 A. No.

17 Q. What level did she want you to change it to?

18 A. She did not state a level.

19 Q. Did she want you to make it a higher, less
20 protective level?

21 MR. ROBBINS: Objection.

22 THE WITNESS: I don't know. No. It didn't
23 state in the e-mail. I don't recall in the e-mails that
24 "you need to change it to this," no.

25 BY MS. BLAKE:

1 Q. Since that time has anyone asked DHHS to
2 change the .3 ppb vanadium Health Screening Level?

3 A. No.

4 Q. Does DHHS have any plans to change the .3 ppb
5 level?

6 A. No.

7 Q. So just to sum up, .3 ppb for vanadium remains
8 the Health Protective Standard?

9 A. Yes.

10 Q. And does the IMAC for vanadium also remain in
11 place?

12 A. I don't know.

13 Q. Would it ever make sense to have a Health
14 Screening Level that was different from an IMAC?

15 A. I -- I don't know how to answer that question.
16 Can you restate that question?

17 Q. Sure. Does the process for developing a
18 Health Screening Level, in terms of the criteria that you
19 look at, differ from the process of setting an IMAC? And
20 feel free to ---

21 A. Yes, it is -- the 2L Standard, the way it
22 states there, you can petition the Division Director to
23 consider. I believe that is what it says in there. I
24 would have to look at it really closely if you want the
25 exact wording.

1 Q. No, that is okay. I guess the question that I
2 am trying to get at is, in terms of the six criteria that
3 you look at for setting a 2L Standard and for setting the
4 Health Screening Level, do you look at those same
5 criteria to set an IMAC?

6 A. It depends on the constituent, and it depends
7 on the health outcome and -- for example, we know that
8 Cancer Slope Factors and Risk is made for carcinogens,
9 and vanadium doesn't have any known -- it has a
10 non-cancer end point.

11 Q. But would you look at the same six factors and
12 see which ones apply to vanadium?

13 A. Normally what we would do is if we had a -- we
14 don't make the rules and we don't set the standards. We
15 would recommend and say -- and show what we have. And it
16 would be -- we don't have the regulatory authority or the
17 authority to set standards. We can use them for health
18 purposes, but we are not -- we don't have the authority
19 to create any things that process goes through.

20 So the process by which those decisions are
21 made, we can provide evidence. But we can't make the
22 discernment for those levels.

23 Q. Are the 2L Groundwater Standards, as a general
24 matter, meant to be health protection levels?

25 A. Normally, they are.

1 Q. Do they take into account things like cost or
2 feasability?

3 A. I don't recall. I don't know. I don't know.
4 I am not involved with the process, so whether or not
5 other factors -- I do know that health is part of that
6 process.

7 Q. I would like to talk a little bit about the
8 testing of the residential wells around Duke Energy's
9 coal ash ponds.

10 A. Okay.

11 Q. Are you familiar with the well testing that
12 occurred around Duke Energy's coal ash ponds?

13 A. I have a superficial knowledge.

14 Q. What is your knowledge of what happened?

15 A. We were given -- we didn't do sampling. We
16 provided the Department of Environmental Quality
17 detection limits for hexavalent chromium. We provided
18 information for re-sampling, if it needed to be
19 resampled, so we could complete a Health Risk Evaluation.
20 But as far as how they did it and all of that, that was
21 DEQ's responsibility, not ours.

22 Q. Do you recall what the detection limits were
23 that you provided for hexavalent chromium?

24 A. I don't remember off the top of my head. I
25 don't recall.

1 Q. Is it important that the tests be able to test
2 to the level of the Health Protective Standards?

3 A. Yes.

4 Q. Are you familiar with the outcome of the
5 testing of the residential wells? Did you see the well
6 test results that were sent?

7 A. I spot checked a few.

8 Q. Do you know the approximate highest level
9 of ---

10 A. (Interposing) No.

11 Q. --- contaminants?

12 A. We have information that we provided the
13 Department of Environmental Quality on a number of wells,
14 not HRE's, because the numbers are different, and by
15 certain risk levels. And that information was provided
16 to our leadership and also to the Department of
17 Environmental Quality so they could see where people --
18 the number of wells. And I just don't remember the
19 numbers. I can't give you exact numbers.

20 Q. Do you recall levels of hexavalent chromium
21 that were higher than 20 parts per billion?

22 A. There were several.

23 Q. And what about for vanadium; do you recall any
24 high levels of vanadium?

25 A. I don't recall.

1 MS. BLAKE: If we could go off the record.

2 MS. BLAKE: OFF THE RECORD. 11:04 P.M.

3 (A DISCUSSION WAS HELD OFF THE RECORD.)

4 MS. BLAKE: ON THE RECORD. 11:05 A.M.

5 BY MS. BLAKE:

6 Q. Is it true that if the Federal Government says
7 that water is safe to drink, then the water is safe to
8 drink?

9 A. Yes.

10 Q. Are there any instances where this is not
11 true?

12 A. Can you be more specific?

13 Q. Are there any instances where water has not
14 been safe to drink but the Federal Government has either
15 said it is safe to drink or has ---

16 A. (Interposing) Not that -- I don't know. I
17 don't know.

18 Q. What about situations where the Federal
19 Government has not yet come up with a safety standard for
20 a contaminant?

21 A. Yes, I think ---

22 Q. Well, let me rephrase the question. If a
23 contaminant is present in water at levels above a safety
24 threshold, but the Federal Government has not set a
25 safety standard for that contaminant yet, does that mean

1 that the water is safe to drink?

2 MR. LONG: Objection.

3 MR. BARKLEY: Objection.

4 MS. LeVEAUX: Objection.

5 THE WITNESS: It depends on the actions that
6 are taken at Risk Management.

7 BY MS. BLAKE:

8 Q. And what kind of actions?

9 A. And that decision -- Risk Management decisions
10 take into account the Risk Assessment. And the Risk
11 Assessment provides the information on the health levels.
12 Safe levels -- the interpretation of safe levels is made
13 by Risk Managers and policy makers. They consider all
14 the ramifications.

15 For example, when you have someone who does
16 not have an adequate quantity of water, you start
17 introducing other risks. That would be an example of
18 when a risk policy maker may want to consider setting
19 that level higher for what is considered safe. That is
20 not a decision made out of my office. Our role in this
21 was strictly looking at screening levels, not the
22 determination of safe.

23 Q. So the screening level is -- are you saying
24 that that is not a safety determination, or ---

25 A. (Interposing) It is a protective level at

1 which we would not expect any health -- adverse health
2 outcomes.

3 Q. And to a layperson, that might sound like a
4 safety threshold. Is that ---

5 A. I don't know.

6 Q. So you said that policy makers might come up
7 with a different threshold?

8 A. Policy makers -- Risk Managers will base
9 actions and policy based on the information it was given
10 to by the Risk Assessment. The Risk Assessment is not
11 the single overriding part of Risk Management. It is a
12 piece of that process. Risk Managers may elect to have
13 other criteria in the process by determining what is the
14 level of safe.

15 Q. And can you give me an example of some other
16 criteria that they might use?

17 A. They may use economic. They may use politics.
18 They may use social factors. There may be other health
19 -- unintended consequences for health, like I mentioned
20 when you take people off of water for a long period of
21 time, and you limit their quantity, you start introducing
22 other types of risks into the process. So you have to
23 balance a lot of different things for Risk Managers. And
24 so the piece that we provide is only a very small part of
25 the big picture.

1 Q. So when you say that "when people are taken
2 off of water," are you thinking of any specific examples?

3 A. No.

4 Q. Has anyone, to your knowledge, been taken off
5 of water around the coal ash ponds?

6 A. I want to correct that statement. It is not
7 taken off of water; it is recommend not to use. When a
8 person elects not to use their water, based on our
9 recommendation, you know, that is -- and I have lost my
10 train of thought. Sorry, go ahead.

11 Q. So you are saying that when DHHS recommends
12 that someone does not use their water, that that can have
13 health effects?

14 A. You can introduce possible health effects.
15 For example, when people -- there could be -- especially
16 water quantity. You start introducing water wash
17 diseases into the process. And water wash diseases are
18 those that you don't have an adequate amount of water to
19 do basic sanitation and household cleaning. And this
20 could be as much as, you know, not washing your hands as
21 much, and other type of water contact type of activities
22 for cleanliness. And so, you know, a lot of different
23 things can be brought in. And it depends on the
24 situation.

25 Q. And what are some of the economic

1 considerations that might ---

2 A. (Interposing) I don't ---

3 Q. --- come into play?

4 A. I don't know.

5 Q. And you said "policy makers." Who are the
6 individuals at DHHS who would be taking into account
7 these other factors?

8 A. That would be at departmental level.

9 Q. And can you sort of help us understand
10 "departmental level" -- what are positions that fall into
11 that category?

12 A. I wouldn't know how that is arranged, I know
13 that I go through my Section Chief, and it goes up
14 through the chain of command to Dr. Williams. And that
15 is all I know. That is my chain of command.

16 Q. Is Dr. Williams at the departmental level?

17 A. Yes.

18 Q. What about Dr. Davies?

19 A. She is at the section level.

20 Q. I am just trying to make sure that I
21 understand this, a determination of whether water is safe
22 to drink can include things like economics or politics,
23 you said?

24 A. Yes. And those -- when we send -- to give an
25 example, when we send out a new Well Water Risk

1 Evaluation, the person who is the risk manager is the
2 homeowner. And the homeowner, looking at the risk, can
3 either accept -- follow our guidance and our
4 recommendation or they can ignore it. It is -- they make
5 those type of decisions when they are dealing with risk.

6 And the same is true with these Health Risk
7 Evaluations, the ultimate person who decides risk and
8 risk levels to tolerate, and whether or not they follow
9 our recommendation is the homeowner. They are the
10 ultimate risk manager in this process.

11 Q. So I understand that. But in coming up with
12 the recommendation and the standard that the Department
13 of Health and Human Services recommends as being safe,
14 can that safe level include things like economics and
15 politics?

16 A. Sure, yes.

17 Q. So has DEQ stated that it will defer to
18 Federal Safe Drinking Water Act standards when
19 determining whether water is safe to drink?

20 MS. LeVEAUX: Objection.

21 THE WITNESS: As far as for the Coal Ash
22 Management Act?

23 BY MS. BLAKE:

24 Q. Yes.

25 A. For the Health Risk Evaluations, I can only

1 answer for DHHS. I don't know what DEQ plans.

2 Q. Will DHHS defer to the Federal EPA in
3 determining whether water is safe to drink?

4 A. The -- that is a big question. And it has a
5 lot of parts to it. And it depends -- we deal with not
6 just water, but a lot of other different areas. So if
7 you could be more specific, that would really be helpful.

8 Q. Yes, sure. For example, for hexavalent
9 chromium, is DHHS's position that it defers to EPA in
10 determining whether water contaminated with hexavalent
11 chromium is safe to drink?

12 A. At this time, and according to the way I am
13 interpreting it, is that DHHS will be waiting for
14 official word from U.S. EPA of what their levels are.
15 The Risk Levels used for health screening for the coal
16 ash will remain the same. Risk is risk.

17 It is -- that number, unless IRIS changes or
18 EPA changes their Cancer Slope Factor, the risk is the
19 same. It is that the U.S. EPA will be establishing that,
20 and that is a Risk Management decision. Again, other
21 factors come into play in which EPA will probably will
22 make their decision. And that would be -- that is our --
23 as I understand, that is our position.

24 Q. So has EPA developed a safety standard for
25 hexavalent chromium?

1 A. Not that I am aware of.

2 Q. And so North Carolina is going to defer and to
3 wait until EPA acts?

4 A. Yes.

5 Q. Is that common practice, for DHHS to wait
6 until EPA acts ---

7 A. (Interposing) I don't know.

8 Q. --- before taking any action?

9 A. I don't know.

10 Q. Who at DHHS would know?

11 A. I don't know.

12 Q. Would Dr. Williams know?

13 A. I don't know. This is the first time this has
14 happened since I have been working here, so I don't know
15 if anybody else or if it happened before. I don't know.

16 Q. So just to make sure I understand, this is the
17 first time that DHHS has ---

18 A. (Interposing) This is the first time that
19 I ---

20 MR. ROBBINS: Objection.

21 THE WITNESS: --- I -- I have encountered
22 this. I can't speak for DHHS on that issue, and I can't
23 speak for other people. They may have done it. I don't
24 know, but I have not. This is the first time.

25 BY MS. BLAKE:

1 Q. So in your experience, this is the first
2 time ---

3 A. (Interposing) In my experience.

4 Q. --- that you have been instructed to wait
5 until EPA acts ---

6 MR. ROBBINS: Objection.

7 MS. LeVEAUX: Objection.

8 THE WITNESS: Not instructed. I would
9 change the word on that to something else. If you could
10 change your question.

11 BY MS. BLAKE:

12 Q. Well, sure. Well, if you could suggest a
13 word?

14 A. I am going to let you, it is your question.

15 Q. So my question was, you know, have you been
16 instructed by anyone ---

17 MR. ROBBINS: Objection.

18 BY MS. BLAKE:

19 Q. --- to wait until EPA comes up with a
20 standard. And you said you haven't been, you wouldn't
21 use the word "instructed." What has the relationship
22 been?

23 MS. LeVEAUX: Objection.

24 MR. BARKLEY: Objection.

25 MR. ROBBINS: Objection.

1 THE WITNESS: I was given guidance. And --
2 I am going to change that. Not guidance. It was the
3 letter that Dr. Randal Williams and Mr. Tom Reeder sent
4 out is where I am getting my information from. That is
5 -- that document is what I am referring to.

6 BY MS. BLAKE:

7 Q. And when you say the letter that they sent
8 out, are you referring to the letter that was sent to
9 residents telling them that their water was now safe to
10 drink?

11 A. Yes.

12 Q. So the guidance that you received in that
13 letter was that DHHS would wait until EPA comes up with a
14 standard for hexavalent chromium before taking any
15 action?

16 A. I believe so. I would have to look at the
17 letter. The letter says that -- you know, it informs
18 homeowners of the update for safety. I would have to
19 look at the letter to be specific.

20 Q. Did you see the letter before it was sent out?

21 A. Yes.

22 Q. Are you aware a DEQ spokesperson has said in
23 another context that if EPA hasn't acted, if DEQ is faced
24 with a choice between protecting the environment or the
25 Federal Bureaucracy, protecting the environment will win

1 every time? Are you aware of that statement?

2 MS. LeVEAUX: Objection.

3 MR. ROBBINS: Objection.

4 MR. BARKLEY: Objection.

5 THE WITNESS: I am not -- I am not aware of
6 that statement.

7 BY MS. BLAKE:

8 Q. But in this particular instance with the
9 hexavalent chromium standard, DEQ and DHHS are planning
10 to delay any protections until the Federal standard
11 setting process is complete?

12 MS. LeVEAUX: Objection.

13 MR. ROBBINS: Objection.

14 THE WITNESS: According to the letter, they
15 are waiting for U.S. EPA to come up with a level for
16 hexavalent chromium.

17 BY MS. BLAKE:

18 Q. So if it is the policy of DEQ and DHHS in this
19 case to wait until EPA comes up with an MCL for
20 hexavalent chromium, what is the purpose of the
21 Groundwater Standards Statute and Rules that require
22 consideration of other factors besides the MCL's in
23 setting standards?

24 MS. LeVEAUX: Objection.

25 MR. ROBBINS: Objection.

1 MR. LONG: Objection.

2 THE WITNESS: I don't know how to answer
3 that one. Because hexavalent chromium was not listed
4 there are, you know, there is a procedure by which you
5 can calculate Heath Screening Level, and that is what
6 DHHS did.

7 BY MS. BLAKE:

8 Q. And what is the purpose of calculating those
9 screening levels if DHHS and DEQ are just going to wait
10 until EPA comes up with a standard anyway?

11 MR. ROBBINS: Objection.

12 MS. LeVEAUX: Objection.

13 MR. LONG: Objection.

14 THE WITNESS: The Health Screening Level is
15 a screening level by which you would not expect an
16 increase in cancer rates -- one in a million -- and we
17 would not anticipate any adverse health effects. It is a
18 risk number only. It is used to describe risk. It
19 describes whether or not a person will be at risk for
20 cancer, one in a million, one in a hundred thousand, one
21 in ten thousand or one in a thousand. That is the
22 purpose of that. So the risk remains the same.

23 BY MS. BLAKE:

24 Q. What is the goal of determining the risk, or
25 what is the practical use of having the risk at hand if

1 no action is taken until EPA sets a standard?

2 MR. ROBBINS: Objection.

3 THE WITNESS: The risk is provided as
4 information. It is a public health -- it gives
5 information about risk. We provide that to people --
6 populations depending on the constituent, and -- or, you
7 know, the circumstances that may be in the broad scope.
8 And we provide information for people so they can make
9 healthy choices.

10 BY MS. BLAKE:

11 Q. And what would be a healthy choice in this
12 situation where contaminant levels exceed the one in a
13 million risk standard?

14 MR. ROBBINS: Objection.

15 MS. LeVEAUX: Objection.

16 MR. LONG: Objection.

17 THE WITNESS: That would be a decision made
18 by the homeowner. The intent of a Risk Assessment or
19 Health Risk Evaluation, the ultimate Risk Manager in this
20 process is the homeowner.

21 BY MS. BLAKE:

22 Q. And what is the Federal Standard for
23 hexavalent chromium?

24 A. There isn't a Federal MCL -- maximum
25 contaminant level for hexavalent chromium, specifically.

1 Q. What is the Federal Standard for chromium?

2 A. For total chromium?

3 Q. For total chromium.

4 A. It is on hundred.

5 Q. Do you think that water that is contaminated
6 with a hundred parts per billion of hexavalent chromium
7 is safe to drink?

8 A. No.

9 Q. Do you think that water contaminated with
10 twenty parts per billion of hexavalent chromium is safe
11 to drink?

12 A. No.

13 Q. Is it cautious to use a hundred parts per
14 billion standard for hexavalent chromium, to tell people
15 what is safe and what isn't safe?

16 MS. LeVEAUX: Objection.

17 THE WITNESS: I don't understand the
18 question.

19 BY MS. BLAKE:

20 Q. I am asking is it a cautious approach to use a
21 hundred part per billion threshold for hexavalent
22 chromium in deciding whether to tell people that their
23 water is safe or unsafe? Is that a cautious angle or
24 approach?

25 MR. ROBBINS: Objection.

1 MS. LeVEAUX: Objection.

2 MR. LONG: Objection.

3 THE WITNESS: No, I don't understand the
4 word "cautious." That is throwing opinion in there. And
5 it is or it is not. It is a hundred or it is not a
6 hundred. Using the word cautious is an opinion.

7 BY MS. BLAKE:

8 Q. What does the word cautious mean in your
9 opinion?

10 A. Being careful, conservative.

11 Q. Is it conservative to use a hundred part per
12 billion threshold?

13 A. That would be an opinion. And, you know, I
14 would -- I would come up with a different answer, as
15 compared to John.

16 Q. As a Risk Manager, what would your response
17 be?

18 MS. LeVEAUX: Objection.

19 MR. ROBBINS: Objection.

20 THE WITNESS: If we were testing for total
21 chromium, then that standard is the MCL. And in
22 accordance to our procedure, it would be considered safe
23 to use total chromium at a hundred.

24 BY MS. BLAKE:

25 Q. And I guess what I am asking is, in your

1 opinion, is that a conservative or a cautious
2 determination?

3 A. No.

4 Q. Shouldn't homeowners be given information if
5 their wells test greater than the one in a million risk
6 threshold for hexavalent chromium?

7 MR. ROBBINS: Objection.

8 MS. LeVEAUX: Objection.

9 MR. LONG: Objection.

10 THE WITNESS: Our Health Risk Evaluation
11 form provides basic information to the homeowner. It
12 puts our phone number on there so they can call us if
13 they have questions.

14 BY MS. BLAKE:

15 Q. And I guess, more specifically, earlier you
16 had said that the purpose -- and correct me if I am
17 putting words in your mouth -- but the purpose of the
18 Health Screening Level for hexavalent chromium is to let
19 the well owners make decisions and to inform them what
20 the one in a million risk threshold is for hexavalent
21 chromium. Should well owners be informed about what
22 their risk level is, based on the amount of hexavalent
23 chromium detected in their wells?

24 MS. LeVEAUX: Objection.

25 THE WITNESS: What do you mean by "risk

1 level"? Should they be told risk levels? If we -- no.
2 Not at all, I take that back. I am not sure what you
3 mean by risk levels. We have a screening level by which
4 we determine a recommendation for use or not use. And so
5 -- and whether or not there needs to be sampling
6 frequency and things of that nature. I am just not
7 following your line here.

8 BY MS. BLAKE:

9 Q. Yeah. So the screening level determines
10 whether it is safe or unsafe to use?

11 A. The screening level tells people use
12 recommendations, re-sampling frequency and other types of
13 information that the homeowner needs to know. It also
14 provides information about how to contact us and how
15 to -- and if there is treatment options that they want to
16 talk about, just general information we have. That is
17 the purpose of informing the homeowner.

18 Q. I guess I am wondering if homeowners might be
19 a little confused right now if they had previously gotten
20 a recommendation to not use their water based on the
21 screening level, and more recently have gotten a letter
22 from Dr. Williams and Dr. Reeder telling them that their
23 water is safe to drink under Federal Standards?

24 A. The risk remains the same. And for public
25 health, we talk about risks to health. And if people

1 have questions on that, we will speak with them. We have
2 reached out to many of the homeowners already in the past
3 year and talked about risks.

4 And so, you know, we used the criteria, you
5 know, "This is a one in a million cancer risk at this
6 level. What was your level?" And we can -- if they have
7 a higher level we can give them an approximation for
8 range of what their risk will be. And, you know, risk is
9 a spectrum, it is not an absolute number. So providing
10 information to people about risks so they can make
11 healthy choices.

12 Q. And it sounds like people are provided this
13 information about their risk level if they reach out to
14 DHHS. But is DHHS directly reaching out to individuals
15 and ---

16 A. (Interposing) We have ---

17 Q. --- telling them what their risk level is
18 based on what has been found in their wells?

19 A. Yes.

20 MS. LeVEAUX: Objection.

21 THE WITNESS: The Department of Health and
22 Human Services, when the initial Health Risk Evaluations
23 went out, we followed up by calling people. We tried to
24 get a hold of as many people as we could. We made over
25 200 phone calls and reached approximately over 150

1 homeowners that we contacted.

2 And we had, you know, two staff working on
3 that to try to, at least, reach people. So it was a huge
4 effort on our part to call people. Normally, for Health
5 Risk -- for the -- if people want absolute numbers --
6 people have a hard time with numbers, so we walked them
7 through the process.

8 BY MS. BLAKE:

9 Q. Do the letter that were sent out recently by
10 Dr. Williams and Mr. Reeder -- do those letter tell
11 people what their risk level is?

12 A. I would have to look at the letter. If you
13 have the letter, I would look at it.

14 Q. I do. Just a moment.

15 (Pause.)

16 I am going to pass you a document to be marked
17 Exhibit 276.

18 (PLAINTIFF-INTERVENOR EXHIBIT 276 WAS
19 MARKED FOR IDENTIFICATION.)

20 (Witness peruses document.)

21 Have you had a chance to review Exhibit 276?

22 A. I briefly looked at it.

23 Q. Okay. Does it appear to be the letter from
24 Dr. Williams and Mr. Reeder to well owners ---

25 A. (Interposing) Yes.

1 Q. --- telling them that their water is safe to
2 drink?

3 A. Yes.

4 Q. Does it seem to be a fair and accurate copy of
5 that letter?

6 A. Yes.

7 Q. Does this letter explain to the people
8 receiving it what their risk is if they drink their
9 water?

10 MS. LeVEAUX: Objection.

11 THE WITNESS: it explains -- this letter
12 explains in here that they withdraw the recommendation,
13 and it was determined that their water, in most city and
14 towns across the country, is ---

15 (Witness peruses document.)

16 It is based on a review of how other states
17 and Federal Government manage elements of hexavalent
18 chromium and vanadium in drinking water. That is what it
19 says.

20 BY MS. BLAKE:

21 Q. Do you think that residents are able to figure
22 out what their risk level is based on the information in
23 this letter?

24 MR. ROBINS: Objection.

25 THE WITNESS: I don't -- I don't know.

1 BY MS. BLAKE:

2 Q. Would you be able to tell -- if you received
3 this letter ----

4 MR. ROBBINS: Objection.

5 BY MS. BLAKE:

6 Q. --- and your well had 20 parts per billion of
7 hexavalent chromium in it, would you be able to tell what
8 your risk level is?

9 MS. LeVEAUX: Objection.

10 THE WITNESS: It does not have the numeric
11 value on the form.

12 BY MS. BLAKE:

13 Q. Would you be able to decide whether your water
14 is safe to drink or not?

15 MR. ROBBINS: Objection.

16 MS. LeVEAUX: Objection.

17 MR. LONG: Objection.

18 THE WITNESS: Yes, because it says it is
19 safe. I mean, because it says the word "safe" on it.

20 BY MS. BLAKE:

21 Q. So if you were a resident, you would feel that
22 you wouldn't have to make your own personal determination
23 about risk, because this letter tells you that your water
24 is safe to drink ---

25 A. (Interposing) That is correct.

1 MS. LeVEAUX: Objection.

2 BY MS. BLAKE:

3 Q. --- regardless of the risk?

4 MR. ROBBINS: Objection.

5 MS. LeVEAUX: Objection.

6 MR. BARKLEY: Objection.

7 THE WITNESS: Yes. I would say yes.

8 BY MS. BLAKE:

9 Q. I think we spoke about this earlier, but what
10 is the cancer risk of water that contains 100 parts per
11 billion of hexavalent chromium; is it ---

12 A. (Interposing) 70 would be -- it would be
13 greater than one in 1,000. What I mean by that is that
14 as the numbers get, you know, larger, like, one in 100 --
15 one in 1,000 would be less than one in 100, it would --
16 according to the Cancer Slope Factor that we used in the
17 calculation using the 2L Rule, we went ahead and
18 established that .07. Based on that, when you come up to
19 a 70 level, between 7 and 70, which is, you know, a ten
20 magnitude greater, that that number lies between there.
21 So we would expect it to be a one in 100 -- one in 10,000
22 to a one in a 1,000 risk.

23 I am not -- I can't pinpoint the exact number.
24 I know it is in the range of that. One in 10,000 to one
25 in 1,000 for 20. Is that what you are asking -- 20?

1 Q. A hundred, actually. For a hundred.

2 A. A hundred? So that would be -- since 70 would
3 be a one in 1,000, that would be less than a one in 1,000
4 cancer risk for hexavalent chromium.

5 Q. If your water had a greater than a one in
6 1,000 risk of giving you cancer, just based on this one
7 pollutant, would you consider that safe to drink?

8 MR. LONG: Objection.

9 MS. LeVEAUX: Objection.

10 MR. ROBBINS: Objection.

11 MR. BARKLEY: Objection.

12 THE WITNESS: For hexavalent chromium?

13 BY MS. BLAKE:

14 Q. For hexavalent chromium.

15 A. Yes -- no. I would not consider that safe,
16 that level of risk.

17 Q. So based on this letter, if the levels in
18 individuals' wells are greater than -- the levels of
19 hexavalent chromium are greater than even the State
20 Standard for total chromium of 10 parts per billion, this
21 letter tells people that there water is safe to drink?

22 A. Yes.

23 Q. What is the purpose of the 10 part per billion
24 State Standard -- Groundwater Standard, in that case?

25 A. I don't -- I don't know. I don't know the

1 exact -- what went into it. The purpose of Groundwater
2 Standards are stated in the groundwater -- in the Rules
3 itself, and I can't ---

4 Q. So EPA's total chromium standard of a hundred
5 parts per billion, is that standard up-to-date?

6 A. No.

7 Q. Do you know approximately when it was created?

8 A. I do not know.

9 Q. Has it been ---

10 A. Over a decade?

11 Q. Yes.

12 A. Yes, it is over a decade.

13 Q. Is it true that EPA's standard for total
14 chromium of a hundred parts per billion assumes that all
15 of the chromium is hexavalent chromium?

16 A. Correct. Yes.

17 Q. At the time the EPA set the hundred part per
18 billion standard, did EPA consider the cancerous effects
19 of hexavalent chromium?

20 MR. LONG: Objection.

21 MS. LeVEAUX: Objection.

22 MR. ROBBINS: Objection.

23 THE WITNESS: I don't know.

24 BY MS. BLAKE:

25 Q. If I can just read you an excerpt from the

1 fact sheet ---

2 A. (Interposing) Sure.

3 Q. --- by the California Environmental Protection
4 Agency, stating "that at the time the total chromium
5 MCL's were established, ingested hexavalent chromium
6 associated with consumption of drinking water was not
7 considered to pose a cancer risk, as is now the case."
8 So do you understand that statement and what it means?

9 MR. LONG: Objection.

10 MS. LeVEAUX: Objection.

11 MR. ROBBINS: Objection.

12 THE WITNESS: Could you reword the question?

13 BY MS. BLAKE:

14 Q. Does that suggest to you that when EPA was
15 setting its standard for total chromium, it was not
16 taking into account the cancer causing potency of
17 hexavalent chromium?

18 MR. LONG: Objection.

19 MS. LeVEAUX: Objection.

20 MR. ROBBINS: Objection.

21 MR. BARKLEY: Objection.

22 THE WITNESS: I wouldn't know the process by
23 which EPA evaluates things. I mean, California is saying
24 that that is how they did that. I wouldn't know what EPA
25 does.

1 BY MS. BLAKE:

2 Q. Fair enough. If EPA did not consider the
3 carcinogenic properties of hexavalent chromium, does it
4 provide any comfort that EPA's standard assumes that all
5 of the chromium is hexavalent chromium, if EPA wasn't
6 taking into account the major health problems caused by
7 hexavalent chromium?

8 MR. LONG: Objection.

9 MS. LeVEAUX: Objection.

10 MR. ROBBINS: Objection.

11 THE WITNESS: That is a really
12 complicated --- if you could reword that question, it
13 would be easier for me to understand the question.

14 BY MS. BLAKE:

15 Q. Sure. So you are saying you don't know for
16 certain what EPA did; you are not familiar with the
17 process for setting the total chromium standard. And I
18 am asking you to assume for a second that they did not
19 take into account the fact that hexavalent chromium --
20 they didn't know at the time that hexavalent chromium can
21 cause cancer.

22 And so, in that sense, does it appear to you
23 that EPA considered the cancer causing properties of
24 hexavalent chromium in setting the hundred part per
25 billion standard?

1 MR. LONG: Objection.

2 MS. LeVEAUX: Objection.

3 MR. ROBBINS: Objection.

4 THE WITNESS: Under the conditions that you
5 have outlined, and the question -- you know, the
6 situation, no. I think I want to say no. I am not sure.
7 I still -- I am still stuck on your question. So I am
8 not really sure of your question, so ---

9 BY MS. BLAKE:

10 Q. So are Federal Standards based exclusively on
11 human health considerations?

12 A. No.

13 Q. What else do the Federal MCL's take into
14 account?

15 A. Economics, technologies.

16 Q. Okay. When you say "technologies," what
17 kind ---

18 A. (Interposing) Treatment technologies.

19 Q. And DHHS does not take cost into account, I
20 believe you said earlier, when setting the Health Risk
21 Screening Levels?

22 A. Yes.

23 Q. Do you know why EPA has not set a standard for
24 hexavalent chromium?

25 A. No.

1 Q. Is that something that anyone at DHHS has
2 looked into, to your knowledge?

3 A. To my knowledge, I gave the phone numbers to
4 EPA to Dr. Williams. And I can't recall who it was. I
5 looked them up on line, and there were two names. And I
6 sent him the phone numbers of those people at those
7 agencies.

8 Q. So Dr. Williams has talked to ---

9 A. (Interposing) I don't know if he talked to
10 them or not. I gave him the numbers.

11 Q. And what prompted you to give him the numbers
12 that you ---

13 A. (Interposing) He wanted more information about
14 hexavalent chromium.

15 Q. Are you aware that EPA started the process for
16 setting hexavalent chromium over eight years ago?

17 A. No.

18 Q. They were setting the MCL?

19 A. No.

20 Q. Are you familiar with the study by the
21 National Institutes of Health concluding that there is
22 clear evidenced that hexavalent chromium is a carcinogen,
23 that prompted EPA to begin studying hexavalent chromium?

24 A. Yes.

25 Q. Have you reviewed that study by them?

1 A. No.

2 Q. But you are familiar with the conclusion ---

3 A. (Interposing) Yes.

4 Q. --- that hexavalent chromium is a carcinogen?

5 Are you aware that EPA held off on its development of the
6 hexavalent chromium standard, based on the recommendation
7 of a peer review panel, and that the peer review panel
8 was made up of -- a majority of the individuals who were
9 encouraging EPA to wait were -- had worked on behalf of
10 industry in hexavalent chromium lawsuits?

11 MR. LONG: Objection.

12 MS. LeVEAUX: Objection.

13 MR. ROBBINS: Objection.

14 THE WITNESS: No.

15 BY MS. BLAKE:

16 Q. Is the possibility of industry influence in
17 the delay of Federal Standard setting something that DHHS
18 would consider?

19 MR. ROBBINS: Objection.

20 THE WITNESS: No.

21 BY MS. BLAKE:

22 Q. Is it something that you would consider?

23 A. No.

24 Q. So the policy of DHHS is to wait for EPA,
25 regardless of what the hold up is?

1 A. I wouldn't know what -- I don't know.

2 Q. And who at DHHS would know?

3 A. Dr. Williams.

4 Q. Has EPA set any screening levels for
5 hexavalent chromium?

6 A. Not that I am aware of.

7 Q. I would like to hand you a document to be
8 marked Exhibit 277.

9 (PLAINTIFF-INTERVENOR EXHIBIT 277 WAS
10 MARKED FOR IDENTIFICATION.)

11 (Witness peruses document.)

12 Okay. Have you had a chance to review this
13 page?

14 A. Superficially, yes.

15 Q. Does it appear to be an excerpt from the
16 Corrective Action Plan, Part 2, prepared by Synterra,
17 February of 2016, for ---

18 A. (Interposing) That is what it says. Go ahead.

19 Q. --- Duke Energy's Mayo Steam Electric Plant?

20 A. That is what it says in the upper left-hand
21 corner.

22 Q. Okay. And about halfway down the second
23 paragraph on the page, do you see the reference to -- I
24 will just read the sentence: "Hexavalent chromium
25 concentrations exceeded the EPA screening level for

1 hexavalent chromium in tap water."

2 A. I see that.

3 Q. What is the screening level for hexavalent
4 chromium in tap water?

5 A. I am not aware of an EPA screening level.
6 That needs to be defined more clearly by the person who
7 wrote this report.

8 Q. I agree. Does the level recorded in the
9 report appear to be .035 parts per billion?

10 A. Yes.

11 Q. And how does that compare to North Carolina's
12 screening level for hexavalent chromium?

13 A. It is about half.

14 Q. So a little bit more protective?

15 A. Yes.

16 Q. So if this is true, then EPA has a screening
17 level for hexavalent chromium that is more protective
18 than North Carolina's?

19 A. It is news to me.

20 Q. And I guess one more point. Are you aware
21 that Synterra is a consultant for Duke Energy?

22 A. No.

23 Q. If there is an EPA screening level for
24 hexavalent chromium, would North Carolina defer to that
25 standard if it is referring to Federal Standards?

1 A. I think that it states in here that ---

2 (Witness peruses document.)

3 We would use Federal guidelines. If EPA came
4 up with an MCL for hexavalent chromium, North Carolina
5 would -- would -- our Risk Assessors would use that as
6 part of the Risk Assessment.

7 Q. And what about other Federal guidelines?

8 A. There is an unregulated contaminant monitoring
9 rule level of .03, and that is designed to -- EPA is
10 looking at levels of hexavalent chromium in public water
11 supplies. And so that level is set at .03. That is used
12 for monitoring purposes. Whether it is based on health,
13 I am not aware.

14 I do know the purpose of it is to do the
15 unregulated contaminant monitoring rule. The EPA uses
16 that rule to look at certain constituents in public water
17 supplies.

18 Q. And the .03 is for hexavalent chromium?

19 A. That is correct.

20 Q. Are there any other states that have a
21 hexavalent chromium standard?

22 A. For health, there is a public health goal for
23 California that is set at .02 parts per billion. And
24 that is the only one I can recall off the top of my head.
25 There are other states that have different types of

1 levels for total chromium. And there is exhaustive lists
2 of those that can be found. (Inaudible) have what level
3 for what purposes. But for public health goals, strictly
4 a health screening level, the one off the top of my head
5 I can recall is California. And it is set at 0.02 parts
6 per billion.

7 Q. And do you know what prompted California to
8 enact a public health level ---

9 A. (Interposing) No.

10 Q. --- for hexavalent chromium?

11 A. I don't.

12 Q. Are you aware of any known hexavalent chromium
13 contamination problems in California?

14 A. Yes.

15 Q. Tell me about that.

16 A. Specifically? Can you be specific?

17 Q. Whichever contamination problem you are
18 thinking of.

19 A. The only one I am aware of is Erin Brockovich,
20 which is, you know, common knowledge. That is the only
21 thing I know of.

22 Q. And is the Erin Brockovich case -- was that
23 based on contamination in Hinkley, California?

24 A. I don't recall the background story on that.

25 Q. Was it contamination by the utility there --

1 PG&E?

2 A. I don't recall the background on that.

3 Q. Do you know approximately the time frame that
4 the hexavalent chromium contamination became known?

5 A. I don't remember.

6 Q. Are you aware of any connection between the
7 contamination problem that arose and the later
8 development of the hexavalent chromium standard in
9 California?

10 A. No.

11 Q. Do you know how high -- and just to make sure
12 I am not missing anything, do you know how high the
13 hexavalent chromium levels detected in the Erin
14 Brockovich case were?

15 A. I don't recall.

16 Q. Are you aware that the highest levels of
17 hexavalent chromium in residential wells in coal ash
18 ponds in North Carolina are higher than most of the
19 hexavalent chromium detections in the Erin Brockovich
20 situation?

21 MR. LONG: Objection.

22 MS. LeVEAUX: Objection.

23 MR. ROBBINS: Objection.

24 MR. BARKLEY: Objection.

25 THE WITNESS: I don't know.

1 BY MS. BLAKE:

2 Q. What is the California MCL for hexavalent
3 chromium?

4 A. Their -- I believe they call it MCL. Their
5 terminology may be different compared to -- it is not a
6 Federal Standard. Their State Standard is 10 micrograms
7 per liter.

8 Q. And is that a Health Base Level or does it
9 take into account things like cost?

10 A. It is based on other criteria in addition to
11 health.

12 Q. Do you know what some of those other criteria
13 are?

14 A. I don't -- I don't know what California does.

15 Q. But it is more than just health?

16 A. Yes.

17 Q. Do other states have Groundwater Standards for
18 vanadium?

19 A. I don't know.

20 Q. Do you know if anyone at DHHS has investigated
21 that?

22 A. Yes. Dr. Rudo -- he would be the best one to
23 answer that question.

24 Q. Has DHHS compared the levels of hexavalent
25 chromium in residential wells to the levels in other

1 public water supplies in North Carolina?

2 A. We didn't. As far as my office, no.

3 Q. And by "your office," you mean DHHS?

4 A. No, Occupational Environmental Epidemiology.
5 That is the branch.

6 Q. I see. Do you know if anyone else at DHHS has
7 compared water levels in residential wells to water
8 levels ---

9 A. (Interposing) We have not compared. However,
10 we were asked to get information about levels. I was
11 asked to find levels in Cumberland County. And I went to
12 the -- with regards to the un-contaminant monitoring
13 rule, I was able to find reports for -- consumer
14 confidence reports that public water supply set up.

15 And there was some monitoring for hexavalent
16 chromium in two -- in several of the public water
17 supplies there. I don't recall the names of the public
18 water supplies. I don't recall the levels. I just
19 provided the links and sent them forward.

20 Q. Any other counties besides Cumberland County?

21 A. That is the only one that I did.

22 Q. And do you remember whether the levels were
23 low or high or ---

24 A. I just don't remember. I mean, I just go,
25 "Here is the report, bingo," you know, and just send it.

1 That is kind of -- when information is asked -- we -- we
2 weren't asked to analyze it. We were asked to find it.

3 Q. And who were you asked by?

4 A. Dr. Williams.

5 Q. So earlier, I believe you said a number of the
6 residential wells near coal ash ponds had levels of
7 hexavalent chromium that were above 20 parts per billion;
8 is that right?

9 A. Yes.

10 Q. Are there any public water supplies, to your
11 knowledge, that have levels that high in North Carolina?

12 A. I don't know. I have -- the only data that I
13 have that even touched on it was the confidence reports
14 that I sent from Cumberland County. That is all I know.

15 Q. Are you familiar with Duke's coal ash site at
16 the Buck Plant in Salisbury, North Carolina?

17 A. I know where Salisbury, North Carolina is. I
18 have not been to the Buck Steam Station.

19 Q. I would like to give you a document to be
20 marked Exhibit 278.

21 (PLAINTIFF-INTERVENOR EXHIBIT 278 WAS
22 MARKED FOR IDENTIFICATION.)

23 (Witness peruses document.)

24 Have you had a chance to look at Exhibit 278?

25 A. I looked at it.

1 Q. Does it appear to be a -- earlier, you
2 referred to a consumer confidence report. Is it a
3 consumer confidence report or drinking water quality
4 report for the Salisbury/Rowan water supply?

5 A. It says on the title that it is a drinking
6 water quality report. It is from this agency.

7 Q. Is that different from a consumer confidence
8 report?

9 A. It has the appearance of a consumer confidence
10 report, which has information for the customer. And
11 normally, each utility will do it differently. But this
12 is considered a quality report.

13 Q. And is it for the year 2013?

14 A. It says in the title that it is 2013.

15 Q. And if you turn to the second page, or the
16 back page of the document, do you see a level for
17 hexavalent chromium that was detected in each of the
18 quarters?

19 A. Let's see.

20 (Witness peruses document.)

21 Q. It the third column in one of the tables.

22 A. Yes. I see under the title where it says,
23 "Unregulated Contaminant Monitor Rule," yes. "(UCMR3)
24 The results are outlined in the following table," in
25 2013.

1 Q. Are any of the levels of hexavalent chromium
2 20 parts per billion?

3 A. Let's see. It is micrograms. Twenty for
4 hexavalent?

5 Q. Yes.

6 (Witness peruses document.)

7 A. No.

8 Q. Are they much lower than 20 parts per billion?

9 A. They are at least three orders of magnitude
10 lower.

11 Q. Okay. You can set that aside now for the
12 moment. So based on that report, are the levels -- I
13 told you to set it aside prematurely. Are the levels of
14 hexavalent chromium in the Salisbury/Rowan water supply
15 lower than what was detected in the residential wells in
16 Buck and Salisbury?

17 A. I don't know the exact levels of all the
18 homeowners and things. I don't know. I wouldn't know
19 that off the top of my head.

20 Q. I can give you something to help out with
21 that, maybe. I will give you a document to be marked
22 Exhibit 279.

23 (PLAINTIFF-INTERVENOR EXHIBIT 279 WAS
24 MARKED FOR IDENTIFICATION.)

25 And it is a long document. You don't need to

1 read the entire thing. But you can familiarize yourself
2 with the first couple of pages and I will point you to
3 the particular page of interest.

4 (Witness peruses document.)

5 So have you had a moment to familiarize
6 yourself with this?

7 A. Familiarize, yes.

8 Q. Does Exhibit 279 appear to be a copy of the
9 results of the water supply well sampling and the Health
10 Risk Evaluation sent to an individual living in
11 Salisbury, North Carolina?

12 A. Yes.

13 Q. And if you turn to page 5 of 30 of the Case
14 Analytical Results for that well, and take a look at the
15 result for hexavalent chromium, which is the third from
16 the bottom on that page.

17 (Witness peruses document.)

18 A. Okay.

19 Q. Does it appear to be 22.3 parts per billion?

20 A. It states in the form that it is 22.3.

21 Q. And is that higher than the levels that you
22 were just taking a look at in the Salisbury/Rowan water
23 quality report?

24 A. Yes.

25 Q. Okay. You can set that aside for a moment.

1 Has DHHS consulted with local water supply officials
2 about, I guess, the hexavalent chromium standard in
3 general?

4 A. We met with and received waters from AQUA.
5 Not individual -- to my knowledge, I have not dealt with
6 individual public water supplies. I don't recall if I
7 did. I recall that we met with AQUA, which is a
8 corporate owner of a lot of public water supplies.

9 Q. And what was that meeting with AQUA about?

10 A. I don't -- I am going to summarize. And I
11 don't know the specifics off the top of my head, but
12 basically they had concerns that the MCL -- that the
13 screening level that we used for hexavalent chromium
14 would be turned and used as the standard in North
15 Carolina. And that was their main concern.

16 Q. Was a conclusion reached in that discussion or
17 meeting?

18 A. DHHS has no plans to make the .07 some sort of
19 standard. We have no plans for that. We are waiting for
20 EPA to make that determination.

21 Q. After EPA makes its determination, what action
22 will DHHS take at that point?

23 A. For?

24 Q. For hexavalent chromium.

25 A. In what context?

1 Q. Well, you just said you were waiting for EPA.
2 And you mentioned setting a standard. Would DHHS set a
3 standard ---

4 A. (Interposing) No.

5 Q. --- after EPA takes action?

6 A. No.

7 Q. What is DHHS waiting to do until after EPA
8 sets the ---

9 A. (Interposing) Oh, we do not have anything
10 planned, but going forward, if we ever encounter
11 hexavalent chromium again in a sample, you know, if EPA
12 has a standard, we would use that then. That is the
13 context in which I am stating -- stating that.

14 Q. So you would use EPA's level to determine the
15 risk of hexavalent chromium?

16 A. We would use that -- we would use that as a
17 Health Screening Level for hexavalent chromium.

18 Q. And would that be true even if DHHS had
19 determined that a lower level was necessary to protect
20 the public health?

21 A. Yes.

22 Q. I guess -- I am still having trouble figuring
23 out how that is consistent with the 2L Rules that list
24 the six criteria, and say that the Health Protection
25 Standard should be set as the least of those -- the most

1 protective of those?

2 A. The process by which we do this is that there
3 is a process, and then there is instructions about how to
4 calculate. In our instructions and the way we do it with
5 the New Well Rules is we use the MCL first. If there is
6 not an MCL, we use the 2L. If there is not a 2L, we use
7 the IMCA. And if we don't have an IMAC, then we use the
8 calculations under that -- number 1 and number 2 rule.

9 So that is -- that is the process by which we
10 do this. You know, that is the standard procedure. We
11 have an agreement with Division of Waste Management -- a
12 previous agreement. And that is how we approach our
13 Health Risk.

14 Q. And is that consistent with ---

15 A. (Interposing) Yes.

16 Q. --- the criteria set out in the 2L Rules?

17 A. Yes. And the reason is hexavalent chromium
18 doesn't have an MCL. It doesn't have one yet, but -- you
19 can't use an MCL because there isn't one. There is not a
20 2L because there isn't one. You can't use an IMAC
21 because there isn't one. So then you default to that
22 paragraph, and you look at that paragraph.

23 But when Health Screening Levels -- when you
24 do HRES, you use MCL first. That is stipulated by our
25 sampling rule, what we call the 3800 Rule.

1 Q. 3800 Rule?

2 A. Yes, in which we use the MCL's primarily. And
3 then in special projects, when we do site specific
4 evaluations, we have an agreement with the Division of
5 Waste Management by which we will use the MCL's first, 2L
6 Standard second, the IMAC, and then the calculation.

7 Q. And when was that agreement with the Division
8 of Waste Management ---

9 A. (Interposing) It was done when Dexter Matthews
10 was here, and we kept it in place ever since.

11 Q. About what time frame was that?

12 A. I don't remember. I don't remember exactly.

13 Q. A couple of years ago or a couple of decades
14 ago or ---

15 A. No, no. it is within the last -- just before
16 he retired. I don't remember the exact time. It was
17 between -- it was before Linda Culpepper became Division
18 Director.

19 Q. Just to help me resolve my confusion, if you
20 could pull out the -- these (indicating) -- it doesn't
21 have an Exhibit number, but the 2L Rules that we looked
22 at first thing today and take a look at those again.

23 (Witness peruses document.)

24 A. Uh-huh.

25 Q. And so the process that is set out in this --

1 did you call it the 3800 Rule?

2 A. Uh-huh.

3 Q. You are saying that you start with the MCL --
4 Federal MCL, and then the 2L Standard, and then the IMAC
5 Standard. And then if none of those exist, then you turn
6 to Section (d) -- that paragraph that says that "The
7 Groundwater Quality Standards for substances shall be
8 established as the least of the following six criteria."
9 And one of those criteria is the Federal MCL. So is that
10 a little bit circular, that ---

11 A. (Interposing) It is circular.

12 Q. --- you start with the MCL, and then -- but if
13 the MCL is not as protective as the, for example, one in
14 a million cancer risk, it seems like this paragraph is
15 directing you to use the lower rate cancer risk?

16 A. In the -- yes.

17 Q. So a moment ago, to take us back, we were
18 talking about meetings with public water suppliers that
19 you had -- that you had had, and you mentioned the
20 meeting with AQUA?

21 A. We only met with AQUA.

22 Q. Did you meet with any local public health
23 officials?

24 A. During that same time -- same meeting?

25 Q. Oh, well, during that same meeting? We will

1 start there.

2 A. No.

3 Q. Did you meet with local public health
4 officials in the time frame that you were creating the
5 hexavalent chromium and the vanadium health screening
6 levels?

7 A. I don't think so. I don't recall. I don't --
8 I don't remember.

9 Q. Have you met with any local health officials
10 about hexavalent chromium or vanadium since that time in
11 the past?

12 A. Yes.

13 Q. How many times have you met with local public
14 health officials?

15 A. We had two conference calls where we invited
16 all of the impacted health departments for a
17 communications meeting. And we spoke with the Rowan
18 County Health Department and the Gaston County Health
19 Department. I have sent e-mails to each of the impacted
20 Health Directors, just to give them an update of where we
21 are at. What we try to -- we try to keep the health --
22 you know, we have conference calls when the Health
23 Directors have questions. And that is the purpose of
24 those calls.

25 Q. When was the first of the conference calls?

1 A. I want to say May.

2 Q. Of 2015?

3 A. 2015, uh-huh.

4 Q. And what was the conversation in that call?

5 A. What we did is we kind of outlined for their
6 benefit, because the plan going forward for the health
7 directors is that normally we would follow the process
8 that we outlined, and then once the determination of
9 source was made, then homeowners would have a better
10 understanding of whether or not they wanted to treat
11 their systems or not, and -- because DHHS does not
12 determine source.

13 And so, with that, we give information -- we
14 would follow back on the 3800 Rules, where we would say
15 we will give you information about the contaminants. We
16 would give you treatment options and help to look -- that
17 is facilitated through the local health departments.

18 If people wanted to get their -- a treatment
19 system on their wells, we provide information to the
20 health department so that they could convey that to their
21 community. The whole purpose of this process is that the
22 local health departments is the conduit by which we reach
23 people. And we were planning ahead for the next step.

24 We knew the testing was going to get done. We
25 know they would have an HRE sent out. So the next step

1 was people may want to have options to put in place. And
2 that is when the local health department could facilitate
3 and help out.

4 So our communication -- I would call it a
5 communications meeting. You know, we kind of outlined,
6 you know, and sent out a plan -- a communications plan
7 kind of outlining, you know, where this is coming from,
8 what anticipated unintended consequences could be,
9 information available to the local health department so
10 that if they get asked questions they can deal with
11 questions. And then we always open it up to see if they
12 have any concerns.

13 So it is a very informal meeting just to let
14 the health directors know that they are not alone and we
15 are going to help them out. And we had two such
16 meetings. The most recent meeting was when some of those
17 -- oh, I don't know what to call it, lack of a word --
18 their site plan things came out for the different sites?
19 I don't know the name of it. And when that happened the
20 health directors wanted some more information on that.

21 So we invited Mr. Reeder to come on and kind
22 of just talk about what is going on and what the process
23 is. Because that is all they really want to know is, you
24 know, what to expect, you know, so they can help serve
25 their people better.

1 Q. And the conference call that happened after --
2 was it Duke Energy's Corrective Action Plans, when those
3 came out?

4 A. I think so. I am not sure. It was the first
5 ones that came out. It was the one where there was --
6 and I don't know which ones these are. It is the one
7 where they say that there is a high or a low or an
8 intermediate issue. That is -- whatever that report was
9 called, the health directors had a lot of questions and
10 wanted more information.

11 Q. That sounds like it might have been DEQ's Risk
12 Classification?

13 A. That is it. That is it.

14 Q. And so the conference call occurred what
15 general time frame?

16 A. I would say March.

17 Q. March? Okay. And was Dr. Williams on that
18 call?

19 A. Yes.

20 Q. Was Dr. Williams on the May call in 2015?

21 A. No.

22 Q. During any of these conversations with local
23 public health officials, did the discussion of what the
24 contamination levels in local water -- municipal and
25 county water supplies were?

1 A. No.

2 Q. Have you heard from any local public health
3 officials whether 20 parts per billion would be an
4 acceptable amount of hexavalent chromium in a local water
5 supply?

6 A. No.

7 MS. BLAKE: Okay. This might be a good
8 stopping place for lunch.

9 (THE PROCEEDINGS WERE RECESSED AT 12:20 P.M.
10 TO RECONVENE AT 1:23 P.M. THIS SAME DAY.)

1 F U R T H E R P R O C E E D I N G S 1:23 P.M.

2 D I R E C T E X A M I N A T I O N 1:23 P.M.

3 (RESUMED)

4 BY MS. BLAKE:

5 Q. All right. Dr. Shehee, I would like to go
6 back to -- this morning we talked a lot about the setting
7 of the standards for hexavalent chromium and for
8 vanadium. I would like to go back to the point after the
9 standards -- the Health Base Screening Levels were set
10 for those contaminants. What happened next? What was
11 the next decision point that came up after you came with
12 the .07 and .3 ppb standards?

13 A. As far as doing the Health Risk Evaluations?

14 Q. Yes.

15 A. Once the levels were set, we prepared our
16 form.

17 Q. Were there any other options that were
18 considered?

19 A. We used existing procedures. And so because
20 we wanted to stay with nothing new -- what I mean by
21 "nothing new," no new procedures, no new rules or
22 anything like that, that we -- we stuck with our standard
23 plan that we normally do with new laws, so ---

24 Q. And were these existing procedures in writing?
25 Are there written guidelines?

1 A. Yes.

2 Q. What are those guidelines called? Do they
3 have a name or a number?

4 A. 3800.

5 Q. So 3800?

6 (Witness nods affirmatively.)

7 Q. And you mentioned that these are existing
8 procedures. Has DHHS sent, I call them, "do not drink
9 letters" to residents in other situations?

10 A. We send -- we recommend not to use their well
11 water for drinking or cooking. They are not orders, they
12 are not standards, they are recommendations.

13 Q. Have you sent those recommendations in other
14 situations?

15 A. Yes.

16 Q. Can you tell me about those?

17 A. We use the recommendations as we evaluate
18 wells for -- under the 3800 Rules.

19 Q. And when or under what circumstances do you
20 evaluate wells under the 3800 Rules?

21 A. The 3800 Rules are made for new wells. They
22 are requirements for the construction of wells -- new
23 wells, permitting and evaluation of sample data.

24 Q. Are there any other situations, other than new
25 wells, in which DHHS would follow the procedures for

1 sending a recommended not to use letter?

2 A. Not that I can recall.

3 Q. Who made the decision to send the recommend
4 not to use letters?

5 A. The Health Risk Evaluations are not "do not
6 use." They are recommendations that -- not to use water
7 for drinking or cooking. "Do not" is not a standard, an
8 order or anything; it is a recommendation. The first
9 approval went to me, as the manager.

10 Q. Okay. So you were the one who approved the
11 sending of the letters originally?

12 A. Yes.

13 Q. And was anyone else, I guess -- can you
14 describe the process -- your process for deciding to send
15 those letters?

16 A. The process, we used the existing form for
17 HRE's for private wells, and augmented it for this
18 project. This project was a time limited project dealing
19 with specific sites for specific things. That was
20 different from -- as compared to the new well rule. So
21 this form is basically the same, but it was created for
22 this project only.

23 Q. And you said that it was augmented. In what
24 way was it augmented?

25 A. Well, we normally check for different

1 constituents for new wells, as compared to those that
2 have site specific constituents, as in this case, a coal
3 ash site.

4 Q. And when did you make the decision to send the
5 letters?

6 A. We don't send letters, we send Health Risk
7 Evaluations to DENR -- DEQ.

8 Q. When did you make the decision to send the
9 Health Risk Evaluations to DEQ?

10 A. Under what -- can you clarify that question?

11 Q. For the hexavalent chromium and vanadium
12 around coal ash ponds?

13 A. Well, we evaluate -- using the Health Risk
14 Evaluations, we look at all constituents, when we look at
15 the -- when we do the Health Risk Evaluation.

16 Q. And when did you present the Health Risk
17 Evaluations to DEQ?

18 A. The process by which we sent the Health Risk
19 Evaluations to the Department of Environmental Quality
20 was directly determined upon their receipt of sampling
21 data.

22 Q. So it was staggered?

23 A. Yes.

24 Q. When was the first Health Risk Evaluation
25 sent?

1 A. I don't recall. I was -- I don't recall.

2 Q. When was the last Health Risk Evaluation sent?

3 A. I don't recall the last date, but it was as
4 recently as Fall of 2015 -- some stragglers.

5 Q. And just to make sure I understand correctly,
6 it sounds like DHHS did not make the decision to send the
7 letters to the residents, that was DEQ's decision?

8 MS. LeVEAUX: Objection.

9 MR. ROBBINS: Objection.

10 THE WITNESS: Yeah. I don't know if that
11 was a -- I don't know or -- say the question again?

12 BY MS. BLAKE:

13 Q. Sure. I thought that I heard you say earlier
14 that you and that DHHS did not make the decision to send
15 the letters to the residents telling them -- relaying
16 this information?

17 A. We did not -- we did not make a decision.

18 Q. Did DEQ make the decision to send the letters
19 to the residents -- the Health Risk Evaluations and the
20 letters recommending not to drink the water?

21 MS. LeVEAUX: Objection.

22 MR. ROBBINS: Objection.

23 THE WITNESS: DEQ sent the letters along
24 with their packet.

25 BY MS. BLAKE:

1 Q. Who at DEQ made that decision?

2 A. I don't know.

3 Q. Did you speak with anyone at DEQ about sending
4 the letters?

5 A. In reference to what?

6 Q. To hexavalent chromium and vanadium?

7 A. And under what ---

8 Q. In the coal ash process.

9 A. Can you be more specific? There is ---

10 Q. Maybe it would help if you could help me
11 identify the area of confusion.

12 A. Can you say the question again? Let me hear
13 the question again.

14 Q. Yes. Let's see. So I think what I am trying
15 to get at is did you speak with anyone at DEQ about the
16 sending out of the letters telling people -- recommending
17 that people do not drink their water because of ---

18 A. (Interposing) Yes.

19 Q. --- hexavalent chromium and vanadium? And who
20 did you speak with?

21 A. Debra Watts.

22 Q. And what was the content of those discussions?

23 A. We spoke about they would send us letters, and
24 they would inform us that it was coming by e-mail, and we
25 would inform them that they were coming back.

1 Q. And these were phone calls to alert each other
2 that e-mails were happening?

3 A. Most of our correspondence is by e-mail.

4 Q. And when you say that the letters were being
5 sent back and forth, were edits being made to the letters
6 as part of that process, or why were the letters being
7 exchanged back and forth?

8 A. That is two questions. Can you pick one?

9 Q. Sure. Why were the letters being sent back
10 and forth between you Debra Watts?

11 A. They were sent between our branches. The
12 results of the sampling were received by the Department
13 of Environmental Quality. They would send it over to us.
14 We would evaluate them with our Health Risk Evaluations
15 and then we would send them back to DEQ to be included in
16 their report.

17 Q. Was there any discussion with anyone else at
18 DEQ besides Debra Watts?

19 A. Eric Smith.

20 Q. And what was the nature of that discussion?

21 A. The discussion about the samples. Most of the
22 discussion of informing us that e-mails were being sent
23 was from Eric, more so.

24 Q. Anyone else at DEQ?

25 A. No.

1 Q. And were there any preliminary discussions
2 before this process got started of DEQ sending you the
3 results and you sending DEQ the Health Risk Evaluation?

4 MS. LeVEAUX: Objection.

5 THE WITNESS: Well, we had -- when we had
6 meetings in January, we talked about the process.

7 BY MS. BLAKE:

8 Q. And that was January of 2014?

9 A. 2015.

10 Q. 2015. And what was discussed at those -- at
11 that January meeting?

12 A. In regard to the forms, we outlined what would
13 be the best way to communicate with each other by -- you
14 know, which -- you know, the process. They would get the
15 reports. They would do what they had to do -- whatever
16 they had to do. They would inform us that they were
17 coming.

18 They would e-mail the sampling results to us.
19 We would do our Health Risk Evaluation, and then we would
20 hand carry our Health Risk Evaluations back to DEQ so
21 they could use it for -- as part of their reporting
22 process.

23 Q. And so to kind of summarize some things I
24 think you said earlier -- please correct me if I am
25 getting any of it wrong -- the Health Risk Screening

1 levels are established based purely on the health risk of
2 contaminants. And then I believe you also so mentioned
3 that Health Risk Managers would decide what to do with
4 that information -- the Health Risk Screening Level. Is
5 that accurate?

6 MS. LeVEAUX: Objection.

7 THE WITNESS: Can you say that again?

8 BY MS. BLAKE:

9 Q. So if I am getting the terminology right,
10 after Health Risk Screening Levels are determined, a
11 Health Risk Manager -- is that the correct terminology?

12 A. Go ahead and state your question.

13 Q. Would make the decision on what to do next --
14 what action to take based on other considerations, as
15 well as health; is that accurate?

16 MS. LeVEAUX: Objection.

17 THE WITNESS: I -- yes.

18 BY MS. BLAKE:

19 Q. And you had said that you were the Risk
20 Manager when the determination of the Health Screening
21 Levels was ongoing, is that right?

22 MS. LeVEAUX: Objection.

23 MR. ROBBINS: Objection.

24 THE WITNESS: Yes.

25 BY MS. BLAKE:

1 Q. And were you also the Risk Manager in charge
2 of determining what to do with those Health Screening
3 Levels? In charge of making the decision to create the
4 Health Risk Evaluations?

5 MS. LeVEAUX: Objection.

6 THE WITNESS: The risk -- the Health
7 Screening Levels are used to determine whether or not the
8 form would be signed to recommend not to use or recommend
9 to use.

10 BY MS. BLAKE:

11 Q. And is that a decision that the Risk Manager
12 would make in that case?

13 A. This would be -- because the evaluation is
14 done by toxicologists, it would be conducted by the
15 toxicologist.

16 Q. And was there any consideration of other
17 factors besides health, before the Health Risk
18 Evaluations were sent out?

19 A. They were health based.

20 Q. And I believe you said earlier that Tom
21 Reeder, in earlier meetings, had said that in the process
22 of creating the Health Risk Screening Levels, that DHHS
23 could do what they wanted? Am I paraphrasing that
24 correctly?

25 MS. LeVEAUX: Objection.

1 MR. ROBBINS: Objection.

2 THE WITNESS: Mr. Reeder said, "give them
3 what they want."

4 BY MS. BLAKE:

5 Q. And at what point did he make that statement?

6 A. At the end of the meeting.

7 Q. Which meeting was that?

8 A. This was a meeting with Dr. Davies, myself and
9 other members of DEQ. And we were discussing a variety
10 of different topics, most of which is the Health
11 Screening Level for hexavalent chromium.

12 Q. In what time frame was that meeting?

13 A. I don't recall the exact month of that.

14 Q. Was it 2014 or ---

15 A. (Interposing) 2015.

16 Q. It was 2015? And was it before the Health
17 Risk Evaluations started going out?

18 A. Yes.

19 Q. Was issuing the Health Risk Evaluations a
20 serious decision?

21 MR. ROBBINS: Objection.

22 THE WITNESS: By who?

23 BY MS. BLAKE:

24 Q. By DHHS.

25 A. What do you mean by "serious"? What do you

1 mean by "serious decision"?

2 Q. Was it a significant decision?

3 MR. ROBBINS: Objection.

4 THE WITNESS: In what context?

5 BY MS. BLAKE:

6 Q. What does a -- you know, a serious or
7 significant decision mean to you in your day-to-day work?

8 MR. ROBBINS: Objection.

9 THE WITNESS: It could mean anything. It
10 could mean anything.

11 BY MS. BLAKE:

12 Q. Was the decision to send out Health Risk
13 Evaluations to residents something that you would take
14 lightly?

15 MR. ROBBINS: Objection.

16 THE WITNESS: No.

17 BY MS. BLAKE:

18 Q. And at any time before the Health Risk
19 Evaluations were first sent out to residents, did anyone
20 at DHHS raise any concerns about sending out the Health
21 Risk Evaluations to residents?

22 A. No.

23 Q. Did anyone at DEQ raise any concerns?

24 A. Yes.

25 Q. And was that the concern that we spoke about

1 earlier about bottled water?

2 A. Yes.

3 Q. Were there any other concerns?

4 A. It is the only one I can recall at this time.

5 Q. When did Dr. Williams join DHHS?

6 A. Summer of 2015.

7 Q. And did he express any concerns about the
8 Health Risk Evaluations at that time, in the Summer of
9 2015?

10 A. No.

11 Q. Was he aware of the Health Risk Evaluations at
12 that time?

13 A. I am not sure if he was aware or not.

14 Q. When, to your knowledge, did he first become
15 aware of the Health Risk Evaluations?

16 A. I met Dr. Williams, or spoke to him, the first
17 time around August of 2015.

18 Q. And did you speak with him about the vanadium
19 and hexavalent chromium?

20 A. I don't remember.

21 Q. Do you remember what you did speak about?

22 A. I don't remember. I just remember meeting him
23 for the first time.

24 Q. When do you remember first speaking with Dr.
25 Williams about hexavalent chromium and vanadium and the

1 Health Risk Evaluations?

2 A. Probably this year. Earlier this year.

3 Q. And has Dr. Williams expressed any concerns
4 about the Health Risk Evaluations at any time ---

5 A. (Interposing) No.

6 Q. --- to your knowledge?

7 A. No.

8 Q. Has DHHS revoked the Health Risk Evaluations?

9 A. The Department rescinded the use
10 recommendation.

11 Q. And that was DHHS that rescinded the use
12 recommendation?

13 A. Yes.

14 Q. Or the "do not use" recommendation?

15 A. The recommendation not to use the water for
16 cooking or drinking.

17 Q. Was rescinded?

18 (Witness nods affirmatively.)

19 Q. Yes?

20 A. Yes.

21 Q. Got it. Does that mean that DHHS also issued
22 the "do not use" recommendation?

23 A. Yes.

24 Q. And then DEQ -- DHHS and DEQ issued the "do
25 not use" recommendation, is that right?

1 A. The HRE form is a Health Risk Evaluation from
2 the Department of Health and Human Services.

3 Q. And it was DHHS that rescinded the "do not
4 use" recommendation?

5 A. Yes.

6 Q. Did DEQ rescind the "do not use"
7 recommendation? Did they join DHHS in rescinding ---

8 A. (Interposing) DEQ -- Mr. Reeder and Dr.
9 Williams wrote a joint letter together. That is all I
10 know.

11 Q. Has any new information come to light since
12 the "do not use" recommendations were issued?

13 MS. LeVEAUX: Objection.

14 THE WITNESS: Yes.

15 BY MS. BLAKE:

16 Q. What is that new information?

17 A. Public water supply levels for hexavalent
18 chromium.

19 Q. And that was not known at the time that the
20 "do not use" recommendations were sent?

21 A. By who?

22 Q. By DHHS.

23 A. Yes. I mean ---

24 Q. Yes, it was not known?

25 A. Say the question again.

1 Q. Were the hexavalent chromium levels in public
2 water supplies known to DHHS at the time that they issued
3 the "do not use" recommendations?

4 A. No.

5 Q. How did DHHS become aware of the public water
6 levels?

7 A. I don't know how.

8 Q. Has any other information come to DHHS's
9 attention?

10 A. Not that I am aware of.

11 Q. Any other information related to vanadium?

12 A. Not that I am aware of.

13 Q. So the basis for rescinding the "do not use"
14 recommendations was the discovery of water levels of
15 hexavalent chromium and vanadium ---

16 MR. ROBBINS: Objection.

17 BY MS. BLAKE:

18 Q. --- in public water supplies?

19 MR. ROBBINS: Objection.

20 MS. LeVEAUX: Objection.

21 MR. LONG: Objection.

22 THE WITNESS: Whatever it says in the letter
23 is how the authors used -- made their decision. So
24 whatever it states in there is what they used.

25 BY MS. BLAKE:

1 Q. And I believe you mentioned earlier that you
2 had seen the letter revoking the "do not use"
3 recommendation ---

4 A. (Interposing) Yes.

5 Q. --- before it was sent to the residents?

6 A. Yes.

7 Q. What was your involvement in creating the
8 letter rescinding?

9 A. I helped Dr. Williams in a conference with
10 leadership about how to -- with this information, how to
11 draft up the letter. And I was on a computer screen.
12 Being a Ph.D. in a room of M.D.'s, I was the one that had
13 to type, but eventually, you know, Dr. Williams took over
14 that process. And he was just thinking out loud.

15 Q. So you said there was a room of M.D.'s. Who
16 all was in the room?

17 A. Not strictly speaking. Myself, Dr. Davies,
18 Dr. Williams, and I -- those I know for sure. I don't
19 want to speculate because, you know, meetings blend. I
20 don't -- I don't recall. That is the only ones I know
21 for sure.

22 Q. Were there any toxicologists in the room?

23 A. No.

24 Q. Were there any Health Risk Assessors in the
25 room?

1 A. No.

2 Q. And you were -- when you say that you were
3 typing things out, was that the letter that you were
4 drafting?

5 A. Yes.

6 Q. And was Dr. Williams -- you said he was
7 speaking out loud. Was he dictating the letter or ---

8 A. Brainstorming.

9 Q. And what ideas did he come up with in the
10 brainstorm?

11 A. I don't recall the specifics of that. I just
12 don't recall.

13 Q. And did you retain the notes that you took
14 down ---

15 A. (Interposing) No.

16 Q. --- that you were typing? What happened to
17 the notes?

18 A. It was not my computer, and I don't know what
19 happened to them.

20 Q. Whose computer was it?

21 A. I don't know.

22 Q. Did Dr. Williams take the computer at the end
23 of the meeting, or ---

24 A. I don't remember. It was someone's computer.
25 I don't know. I just don't know whose computer that was.

1 Q. And what time was this meeting that you are
2 speaking about?

3 A. Late winter, early spring. Late winter --
4 that is the correct term. It was late winter. That is
5 right.

6 Q. And why was the meeting convened?

7 A. Dr. Williams likes to meet with people and to
8 speak out loud. That is what he likes to do.

9 Q. Was the purpose of the meeting to create a
10 letter revoking the "do not use" recommendation?

11 A. The purpose of the meeting was to discuss the
12 rescission of the health use recommendation -- use
13 recommendation.

14 Q. And who called the meeting?

15 A. Dr. Williams.

16 Q. And who made the decision the letter revoking
17 the "do not drink" recommendations?

18 A. That would be Dr. Williams.

19 Q. Was anyone else involved in that decision?

20 A. I don't know.

21 Q. Were you involved in that decision?

22 A. No.

23 Q. Was Dr. Davies involved in that decision?

24 A. Not that I am aware of.

25 Q. What did Dr. Williams base his decision on?

1 A. Dr. Williams based the rescission on the
2 information that he describes in the letter that he
3 wrote.

4 Q. Was DEQ involved in the meetings -- in any
5 meetings discussion the rescission of the "do not drink"
6 recommendation?

7 A. I don't know that.

8 Q. Was DEQ involved in any meetings that you were
9 in discussing the "do not use" recommendations?

10 A. No.

11 Q. And you said earlier that the new information
12 that had come to light since the "do not drink"
13 recommendations were first sent was the water
14 contamination levels in public water supplies. Do you
15 know which public water supplies in particular?

16 A. No.

17 Q. Do you know whether that was North Carolina
18 public water supplies?

19 A. I wouldn't know that.

20 Q. Would anyone besides Dr. Williams know?

21 A. I wouldn't know.

22 Q. Did anyone at DHHS express any reservations
23 about withdrawing the "do not use" recommendations?

24 A. Yes.

25 Q. Who expressed reservations?

1 A. Me.

2 Q. What were your reservations?

3 A. It was confusion. Confuse the well owners.

4 Q. Can you give a little bit more detail?

5 A. It is ---

6 Q. Why would the well owners be confused?

7 A. You said one thing and then changed your mind.

8 Q. And do you think the well owners have been
9 confused?

10 A. I wouldn't know.

11 Q. Have any well owners contacted you?

12 A. Yes.

13 Q. And have they been clear on what is going on?

14 A. I assume they called because they had
15 questions.

16 Q. Did you have any other reservations about
17 withdrawing the "do not use" recommendations?

18 A. No.

19 Q. Did anyone else at DHHS have any reservations
20 about withdrawing the "do not use" recommendations?

21 A. Yes.

22 Q. Who else?

23 A. Ken Rudo.

24 Q. What were his reservations?

25 A. I don't know.

1 Q. How do you know that he had reservations?

2 A. Because he said he didn't like it.

3 Q. Did he give any explanation?

4 A. No.

5 Q. Did anyone else at DHHS have reservations?

6 A. No.

7 Q. Did anyone at DEQ have any reservations?

8 A. I wouldn't know.

9 Q. Was the Secretary of DEQ, Don Van der Voort,
10 involved in any of the discussions about whether to
11 rescind the "do not use" recommendations?

12 A. I don't know.

13 Q. Was Governor McCrory involved in any of the
14 discussions?

15 A. I don't know.

16 Q. Was Duke Energy involved in any discussions
17 about the rescinding of the "do not use" recommendations?

18 A. I don't know.

19 Q. Has Duke Energy been in any meetings related
20 to the hexavalent chromium and vanadium standards --
21 health screening levels, more generally?

22 A. Yes.

23 Q. Can you tell me about those meetings?

24 A. I was not invited.

25 Q. Who was at those meetings?

1 A. Dr. Davies.

2 Q. And did you hear anything about the meetings
3 afterwards?

4 A. No.

5 Q. How many meetings?

6 A. I don't know. I know at least one.

7 Q. What time frame did the one meeting that you
8 know of happen?

9 A. I don't -- it would be 2015. I don't know
10 that precise date.

11 Q. And do you know anything about the topic of
12 the meeting?

13 A. No.

14 Q. Which residents received the withdrawal of the
15 "do not drink" recommendations?

16 A. I was not involved in sending the letters,
17 personally, nor was I involved with the determination of
18 who got a letter and who did not.

19 Q. Who was involved in the determination of who
20 got a letter and who did not?

21 A. That would be Dr. Williams.

22 Q. What did he base his determination on?

23 A. According to the letter, he based his
24 decisions on the -- what he stated in his letter.

25 Q. Did residents receive the letter even if they

1 had exceedances of other contaminants, like iron?

2 A. I wouldn't know. I don't think so. I don't
3 know. I don't know.

4 Q. You said you wouldn't think so. Why not?

5 A. If you had multiple contaminants besides just
6 one single contaminant, and if you are basing you
7 decision according to the letter, if they had other
8 contaminants they probably would not get that letter.

9 Q. Which pollutant causes more serious effects;
10 iron or hexavalent chromium?

11 A. Hexavalent chromium.

12 Q. And did residents receive the rescission of
13 the "do not use" recommendation even if they had
14 hexavalent chromium at greater than 10 parts per billion?

15 A. I don't -- I didn't see that, so I can't
16 verify -- say yes on that. So I don't know.

17 Q. Do you know whether DHHS has kept track of
18 which residents it sent the withdrawal of the "do not
19 drink" recommendations to?

20 A. The -- as far as the letter, I don't know if
21 anybody kept a log of that -- you know, exact -- "Mr. and
22 Mrs. Smith, Mr. and Mrs., you know, Jones received this
23 letter on this day." I don't have that letter and I
24 don't know.

25 Q. Do you know who would know?

1 MR. ROBBINS: Objection.

2 THE WITNESS: The Communications Office.

3 BY MS. BLAKE:

4 Q. Anyone in particular at the Communications
5 Office?

6 A. No.

7 Q. Do you know if DHHS was planning to keep any
8 "do not use" recommendation in place for residents on the
9 basis of hexavalent chromium contamination?

10 A. Say that again?

11 Q. Was DHHS -- does DHHS plan to keep any "do not
12 use" recommendations in place on the basis of hexavalent
13 chromium contamination? Will they leave it in place?

14 A. I don't -- I don't know.

15 Q. Does DHHS have any plans to revoke the "do not
16 use" recommendations for other pollutants, like iron or
17 lead?

18 A. I don't know.

19 Q. If DHHS did have any plans, would you know
20 about them?

21 MR. ROBBINS: Objection.

22 THE WITNESS: I don't -- I don't know.

23 BY MS. BLAKE:

24 Q. Have you been instructed not to discuss the
25 safety standards -- the Health Screening Levels for

1 drinking wells?

2 A. No.

3 Q. It has been reported in the media that DHHS
4 representatives have stated that DHHS is not able to
5 comment further on the safety recommendations until the
6 General Assembly take action. Is that a true statement?

7 MR. ROBBINS: Objection.

8 THE WITNESS: I don't know.

9 BY MS. BLAKE:

10 Q. Have you been instructed not to discuss the
11 Health Screening Levels with the media?

12 A. Our policy when dealing with the media in DHHS
13 is to route all calls through our Communications Office,
14 regardless of the topic and regardless of the
15 circumstances. They are our spokesman. And then they
16 contact us for specifics. That is our policy. It has
17 been in place for several years.

18 Q. Has anyone in the Communications Office
19 contacted you about specifics related to the withdrawal
20 of the "do not use" recommendations?

21 A. I don't recall. The answer is no.

22 Q. One more thing. You mentioned earlier that
23 the Center for Disease Control had approved the Cancer
24 Slope Factor that DHHS used for the hexavalent chromium
25 screening level?

1 A. Yes.

2 Q. Was that approval in writing or was it oral
3 approval?

4 A. The HC for Toxic Substance and Disease
5 Registry at the Center for Disease Control and Prevention
6 vetted our numbers. The question to them was, "Is this
7 the, you know, correct Cancer Slope Factor?" And they
8 agreed that this was the correct slope factor. It was
9 done by e-mail.

10 MS. BLAKE: If we can go off the record
11 for a second.

12 MS. BLAKE: OFF THE RECORD. 2:05 P.M.

13 (A BRIEF RECESS WAS TAKEN.)

14 MS. BLAKE: ON THE RECORD. 2:16 P.M.

15 BY MS. BLAKE:

16 Q. Okay. So just a few final questions. You
17 said that your -- I guess the experts -- the toxicologist
18 and the Health Risk Assessors, Dr. Rudo and Sandy Mort --
19 set the screening level for hexavalent chromium; is that
20 right?

21 A. That is correct.

22 Q. And then what was -- what was your role at
23 that point?

24 A. My role for setting the screening levels was
25 making sure that we had vetting processes. For example,

1 make sure that, you know, when we do something like
2 hexavalent chromium, that we run it by Division of Waste
3 Management so we are all in agreement with each other.
4 We also sent it to CDC for our risk -- for not risk, but
5 for the Cancer Slope Factor, and try to vet that through
6 different processes -- those processes, so we made sure
7 that we have confidence in the number that we are setting
8 out.

9 It is kind of like a quality control. You
10 know, let's let the Division of Environmental -- Division
11 of Waste Management look at it, because we work with them
12 the most, and, you know, because they are familiar with
13 the 2L calculation. And so getting them to vet. It is
14 important in getting the CDC to make sure that the Cancer
15 Slope Factor was an appropriate number. And those were
16 the two things -- as a manager, I wanted to make sure
17 that we had vetting and that the numbers we started the
18 process with was correct.

19 Q. And you felt confident that ---

20 A. (Interposing) And I felt comfortable.

21 Q. And what was your supervisor, Dr. Davies' role
22 in setting the standards?

23 A. Once we set the standards, I presented them to
24 her.

25 Q. And what did she do at that point?

1 A. I don't recall what she did. I don't recall
2 what she did with the number. I briefed her on the
3 number, and had the toxicologist come in and hear the
4 basis of how it was calculated, what we vetted it
5 through, and any questions that she had.

6 Q. And did she approve that screening level?

7 A. I think -- I don't recall, but my -- I think
8 so. I think so. I am not sure of the exact words on
9 that.

10 Q. But you don't -- she did not disapprove it, is
11 that right?

12 A. That is -- yes.

13 Q. She didn't give disapproval. And what was Dr.
14 -- I guess Dr. Williams was not there at the time. What
15 was Dr. Williams' role in sending out -- I guess, did Dr.
16 Williams have any role in this process before the
17 decision and discussions to rescind the "do not use"
18 recommendations?

19 A. He had no role.

20 Q. And to your knowledge, has DHHS ever rescinded
21 a "do not use" recommendation before?

22 A. Not to my knowledge, no.

23 Q. And so you -- what I have heard you say today
24 in the deposition is that you all followed the standard
25 procedures in setting the Health Screening Levels, and in

1 sending out the Health Risk Evaluations. Is it part of
2 the standard procedure at DHHS to take into account
3 contamination levels in other water supplies when making
4 a safety recommendation about a particular water supply?

5 A. No.

6 Q. And do you know if anyone at DHHS has ever
7 received anything of value from Duke Energy?

8 A. Not to my knowledge.

9 Q. No gifts or trips or anything ---

10 A. (Interposing) Not to my knowledge.

11 Q. Do you know if anyone at DEQ has ever received
12 anything of value from Duke Energy?

13 A. Not to my knowledge.

14 Q. And is there anything else that you would like
15 to add at the end of the questioning here?

16 A. No.

17 MS. BLAKE: All right. And that concludes
18 my questions. Thank you so much for your time today.

19 MS. LeVEAUX: I don't have any questions.

20 MR. LONG: I have got a few.

21 D I R E C T E X A M I N A T I O N 2:21 P.M.

22 BY MR. LONG:

23 Q. Dr. Shehee, my name is Nash Long. And I am
24 representing Duke Energy and I have got a few questions
25 for you this afternoon. Thank you for your patience. I

1 wanted to start with the HRE -- the Health Risk
2 Evaluation form. You said earlier that it had been
3 augmented for purposes of these projects, is that right?

4 A. That is -- yes.

5 Q. And if I understood you correctly, you said
6 that you, at the department, usually check for different
7 constituents; is that right?

8 A. Yes.

9 Q. And in checking for different constituents on
10 new wells, what were you referring to in that testimony?
11 What were the different constituents that you would
12 typically check for?

13 A. I would have to -- you know, I would have to
14 look at the entire list. I would have to look at the
15 list, because I always have to look at the list because
16 we deal with a lot of different contaminants in different
17 areas. It would be your inorganics and your microbials
18 would be the two categories that we would look at for new
19 well -- new wells. And that would include arsenic. That
20 would include mercury among others.

21 Q. What about hexavalent chromium?

22 A. No, sir.

23 Q. That is not typically checked for?

24 A. That is not checked for under the 3800 Rules.

25 Q. And why is that, if you know?

1 A. I don't know.

2 Q. What about vanadium; is that typically checked
3 for?

4 A. No.

5 Q. Do you know why it is not?

6 A. I have no idea.

7 Q. We were talking this morning about setting the
8 Health Base Screening Level for hexavalent chromium, so
9 if we could go back to that. You said in your testimony
10 that there was a toxicologist that was involved. And I
11 am not sure that I caught the name of the toxicologist
12 for setting that Health Base Screening Level for
13 hexavalent chromium?

14 A. That would be Dr. Rudo.

15 Q. Any other toxicologists involved in that?

16 A. Sandy Mort.

17 Q. Any others?

18 A. Except for the people -- oh, Dave Lilley, over
19 in Division of Waste Management, who we vetted the number
20 through. And also Hanna Assefa.

21 Q. And for setting the Health Base Screening
22 Level for vanadium, was it the same group of
23 toxicologists that were involved?

24 A. The only one I know for sure is Dr. Rudo.

25 Q. Thank you. All right. Can we look at some of

1 the exhibits you looked at this morning?

2 A. Yes, sir.

3 Q. The first one I want to talk about is Exhibit
4 277, which is the one pager.

5 (Witness peruses documents.)

6 And you were referred by the lawyer -- you
7 were referred to a number about the middle of that second
8 paragraph of 0.000035 milligrams per liter. Do you see
9 that?

10 A. Yes, sir.

11 Q. And it says here in this paragraph that that
12 says, "The EPA screening level for hexavalent chromium in
13 tap water (.000035 milligrams per liter)" Did I read
14 that correctly, that entire phrase?

15 (Witness peruses document.)

16 A. I think so.

17 Q. Do you understand that to be some sort of EPA
18 MCL for hexavalent chromium?

19 A. I see that as an EPA screening level.

20 Q. Not as an EPA MCL?

21 A. It does not say MCL on there.

22 Q. And that is not the way you interpret it?

23 A. That is not the way I would interpret it.

24 Q. So we were talking again about setting the
25 Health Base Screening Level for hexavalent chromium and

1 vanadium and had you personally been involved in setting
2 Health Base Screening Levels for other constituents prior
3 to this project?

4 A. No, sir.

5 Q. This was the first time?

6 A. Yes, sir.

7 Q. Do you know whether any of the other people at
8 DHHS that were involved in this project with you, whether
9 they had worked on setting a Health Base Screening Level
10 prior to these projects?

11 A. Yes.

12 Q. Who is that?

13 A. Dr. Rudo.

14 Q. And who else?

15 A. That is all I know for sure.

16 Q. What had he worked on previously?

17 A. He worked on vanadium.

18 Q. Do you know approximately when he worked on
19 that?

20 A. I do not. I don't recall.

21 Q. But it was prior to this project?

22 A. Yes.

23 Q. Your current position is the Director of which
24 division or department within the Department of Health
25 and Humans Services?

1 A. I am a Program Manager, Branch Head for the
2 Occupational and Environmental Epidemiology Branch in the
3 Division of Public Health in the Department of Health and
4 Human Services.

5 Q. And how long have you had that position?

6 A. About four years.

7 Q. And what was your position prior to that in
8 the department?

9 A. I was the Supervisor of the Medical Evaluation
10 and Risk Assessment Unit. And I did that for about four
11 years also.

12 Q. And what was your position with the department
13 before that?

14 A. I was an Epidemiologist working with harmful
15 algal blooms, toxins and Outreach.

16 Q. And was that your entry position at the
17 department?

18 A. Yes.

19 Q. Do you have familiarity with any other Health
20 Base Risk Assessments that have been done by the
21 Department of Health and Human Services, other than the
22 two we have been talking about today on hexavalent
23 chromium and vanadium?

24 A. We do a variety of Risk Assessments. We do
25 site specific analyses of U.S. EPA NPL sites, which is

1 National Priority Listing. We work with the Division of
2 Waste Management on a lot of projects in which we provide
3 information, public health assessments and outreach
4 education and community engagement.

5 Q. So the Department has done several other
6 Health Base Risk Assessments?

7 A. Yes, sir.

8 Q. But these are the only two that you have had
9 personal involvement in?

10 A. Yes.

11 Q. Why is it that you were personally involved in
12 these two projects, as opposed to the others?

13 A. The other ones were done -- this was a statute
14 that was passed. And we were not familiar with the
15 statute. This is -- when we do site specific Superfund
16 sites, those are established procedures by the CDC in
17 working in conjunction with EPA, so those procedures are
18 about 20 years old -- 10 to 20 years old. This was a new
19 statute that came out.

20 Q. Focusing on the Health Base Screening Level
21 that you worked on for hexavalent chromium, I am looking
22 at Exhibit 274.

23 (Witness peruses document.)

24 And as I understand your testimony, this is a
25 spreadsheet that shows the calculation that was done for

1 the hexavalent chromium Health Base Screening Level?

2 A. Yes.

3 Q. It indicates that the source of the Cancer
4 Slope Factor was IRIS draft 6-Cr document 2010?

5 A. Yes.

6 Q. Okay. That is a draft document prepared by
7 EPA?

8 A. Yes.

9 Q. Oh hexavalent chromium?

10 A. Yes.

11 Q. That, at the time this was done, was
12 approximately five years old?

13 A. Yes.

14 Q. Is it typical procedure for the Health Base
15 Screening Levels to be based upon draft documents?

16 A. Yes.

17 Q. Can you give me some examples?

18 A. I don't know off the top of my head. My
19 toxicologist would be a better person to address that
20 question.

21 Q. And by that you mean Dr. Rudo?

22 A. Dr. Rudo.

23 Q. Are you aware of any criticisms that have been
24 lodged against this particular draft document in the
25 academic literature?

1 A. No, sir.

2 Q. You haven't heard anything about that?

3 A. No.

4 Q. There was some discussion this morning about
5 basing the Health Base Screening Level on an incremental
6 lifetime cancer risk of one in a million. Do you recall
7 that?

8 A. Yes.

9 Q. And what does it mean when we are talking
10 about lifetime? What is the frame of years in that
11 context?

12 A. The way this formula is calculated, it uses
13 the -- they have certain factors that they use. And this
14 one is calculated at 70 years.

15 Q. Seventy years. And that was the number that
16 was used in Exhibit 274?

17 (Witness peruses document.)

18 A. Yes.

19 Q. And the amount of two liters per day, in terms
20 of water intake, do you know where that comes from?

21 A. No.

22 Q. Do you know how typical it is that a person
23 ingests two liters of water per day?

24 A. I wouldn't know that.

25 Q. Was there any literature that was considered

1 by the department in setting the Health Base Screening
2 Level for hexavalent chromium?

3 A. That would be a question that would best
4 answered by my toxicologist. He is my expert.

5 Q. And that would be the same for vanadium?

6 A. Yes, sir.

7 Q. But for your purposes -- for the work you did
8 in setting the Health Base Screening Levels for
9 hexavalent chromium and vanadium, did you consult any
10 literature on the topics?

11 A. I did not calculate it personally.

12 Q. But did you consult any literature in relation
13 to these projects?

14 A. Yes.

15 Q. What did you consult?

16 A. Fact sheets from the Agency for Toxic
17 Substance and Disease Registry, the U.S. EPA website for
18 Health Risk Assessment. Those are the main -- the two
19 main ones I recall right now.

20 Q. And what information did you take from the
21 fact sheets for purposes of your work on these projects?

22 A. Can you be more specific, please?

23 Q. Well first, let start here. Why did you pull
24 those documents or resources?

25 A. The reason I pulled those documents was to get

1 a better understanding of the basics of contaminants.

2 Q. And did you find what you were looking for
3 there?

4 A. Yes.

5 Q. Was there any specific information that you
6 recall relying on that you found in either of those two
7 documents?

8 A. Can you be a little more specific in that
9 question, because there is a lot in those documents.

10 Q. What was important to you that you found in
11 those documents for purposes of the work that you did on
12 these projects?

13 A. General information about health effects.

14 Q. Anything else that you recall?

15 A. No.

16 Q. Was there anything in either of those
17 documents about, you know, screening levels or MCL's that
18 you were relying on?

19 A. No.

20 Q. This screening level for hexavalent chromium
21 of .07, was that set on an assumption of inhalation or
22 digestion?

23 A. Digestion.

24 Q. And was there any evidence that the Department
25 assembled to support the view that hexavalent chromium

1 can cause cancer when it is ingested at that Health
2 Screening Level of .07?

3 A. .07 is protective, which means at that level
4 we would -- at .07 parts per billion and below, we would
5 not expect adverse health effects, or any cancer effects
6 -- an increased risk of cancer at or below that number.

7 Q. And what was the evidence that the Department
8 assembled to come to that conclusion?

9 A. You would have to ask my toxicologist for the
10 evidence.

11 Q. We talked a little bit this morning, or you
12 testified this morning -- let me accurate here. You
13 testified this morning about the letters that were sent
14 to well owners about the HREs. And I want to ask you, is
15 there also some mechanism that the Department has to
16 address exceedances of a Health Screening Level in public
17 water supplies, like in city water?

18 A. No.

19 Q. Something I was not clear about that was asked
20 about earlier this morning, is in the vanadium screening
21 level project, Dr. Rudo came to you early on and
22 suggested that the vanadium number should be higher; is
23 that what you said?

24 A. Yes.

25 Q. So the screening level number should be higher

1 than .3 micrograms per liter?

2 A. Yes.

3 Q. Do you know what he was basing that on?

4 A. No, you will have to ask Dr. Rudo.

5 Q. Are you aware that vanadium is sometimes found
6 in over-the-counter vitamin supplements?

7 A. No.

8 Q. Can I ask you to look at Exhibit 279, which is
9 the June 4, 2015 letter?

10 (Witness peruses documents.)

11 A. I have that in front of me.

12 Q. On page 5 of 30 was what the lawyer showed you
13 previously, if we could turn to that.

14 A. It is this page right here (indicating)?

15 Q. It looks like it. It says "5 of 30" in the
16 bottom right-hand corner. Do you recall that you were
17 asked about the number for "chromium, hexavalent," the
18 third item from the bottom in this list?

19 A. Yes.

20 Q. And the number reflected here under the result
21 column for that constituent is 22.3 micrograms per liter?

22 A. Yes.

23 Q. There is also a reference to chromium higher
24 up in the column. What is the relationship here between
25 "chromium" and "chromium, hexavalent"?

1 A. We would look at the total. We would look at
2 the chromium level and use the MCL for total chromium,
3 and we would use the Health Screening Level for
4 hexavalent chromium for the specific constituent of
5 hexavalent chromium.

6 Q. So when the chromium result is reported, that
7 is the total chromium number?

8 A. I am assuming in this document that it is
9 similar.

10 Q. And the hexavalent chromium is a sub-part of
11 that total chromium number?

12 A. Yes.

13 Q. The "total chromium" number reported here is
14 21.8 micrograms per liter?

15 A. Yes.

16 Q. The hexavalent chromium number is 22.3
17 micrograms per liter?

18 A. Yes.

19 Q. How is that possible?

20 A. I don't know.

21 Q. Does that look correct to you?

22 A. I don't know.

23 Q. If hexavalent chromium is a subset of total
24 chromium, then, as reported on this document, can those
25 numbers be correct?

1 A. I don't -- I don't know.

2 Q. It doesn't look right, though, does it?

3 A. Yes, it does.

4 Q. How so?

5 A. Because you are dealing with -- when you are
6 dealing with constituents at this low level, you can get
7 variation. As long as the quality control standards are
8 met, then you can take those numbers as is.

9 Q. "Quality control standards" meaning what?

10 A. Make sure your trip (phonetic) samples were
11 done correctly, making sure the detection limits were
12 done -- are within the same level. There are things that
13 the toxicologist will check to make sure that the
14 sampling that was done is reasonable data to be
15 evaluated, and the toxicologist knows how to take these
16 chemical parameters and look at the -- look at that type
17 of data and then evaluate if it is good data or not. If
18 it is not good data, then the toxicologist will not
19 accept it.

20 Q. There is a column here on this table -- the
21 far right column, entitled "qualifiers," do you see that?

22 A. Yes.

23 Q. There is one qualifier listed, do you see
24 that?

25 A. Yes.

1 Q. It is for the constituent "chromium,
2 hexavalent"?

3 A. Yes.

4 Q. And it is qualifier M6, right?

5 A. If that is what it says on the form.

6 Q. Can you turn over to page 27 of 30 under the
7 heading Analyte Qualifiers?

8 (Witness peruses document.)

9 A. Uh-huh.

10 Q. It has a description for the M6 qualifier, do
11 you see that?

12 A. Yes.

13 Q. Can you read that into the record?

14 A. It is "Matrix spike and Matrix spike duplicate
15 recovery not evaluated against control limits due to
16 sample dilution."

17 Q. What does that mean?

18 A. My toxicologist would know the answer to that
19 question.

20 Q. You don't have a view on that ---

21 A. (Interposing) No, sir.

22 Q. --- one way or the other?

23 A. No.

24 Q. Is it possible, as you sit here today, that
25 that number listed on page 5 of 30 for hexavalent

1 chromium is incorrect?

2 (Witness peruses document.)

3 A. The hexavalent chromium number?

4 Q. Yes.

5 A. Yes.

6 Q. In setting the Health Base Screening Level for
7 hexavalent chromium, was there any assumption about
8 dermal exposure to vanadium -- I am sorry, hexavalent
9 chromium?

10 A. That would be a question for my toxicologist
11 to address.

12 Q. Same answer about vanadium?

13 A. Same answer for vanadium.

14 Q. Are you aware of any cancer cluster studies
15 done for populations around the coal ash basins in North
16 Carolina?

17 A. The Cancer Registry may have done one. I
18 don't know. I am going to correct that. I don't recall.
19 But if anybody does it, it is the Cancer Registry.

20 Q. All right. I have an exhibit to mark, what
21 are we up to?

22 COURT REPORTER: 280.

23 MR. LONG: 280? Okay.

24 BY MR. LONG:

25 Q. I only have two copies here. My copy machine

1 didn't work, but if we can share.

2 (DEFENDANT EXHIBIT 280 WAS
3 MARKED FOR IDENTIFICATION.)

4 (Witness peruses document.)

5 A. Okay.

6 Q. Okay. Dr. Shehee, we have shown you what has
7 been marked as Exhibit 280, which appears to be at least
8 a portion of an e-mail from you to Dr. Davies dated
9 August 20th of 2015. Do you see that?

10 A. Yes.

11 Q. Do you recall this e-mail exchange?

12 A. Just vaguely.

13 Q. What is it about?

14 A. There was a --- I am not sure. I can't -- I
15 can't remember, unless I see a series of e-mails to lead
16 up to it. It helps me to understand, because a lot of
17 things were happening. So I would need more, kind of
18 like -- other -- number one, look at the whole e-mail.
19 And number two, you know, the previous e-mails that led
20 up to it if there were any. That helps to look at that.

21 Q. Yes, that is fair. This is all I have got,
22 though.

23 A. Yes.

24 Q. This is how it was produced to us, so I am
25 struggling with you.

1 A. Okay.

2 Q. Let me ask this question, then. So under the
3 title -- I am sorry, the bold heading, "Questions
4 regarding hexavalent chromium or vanadium," there is a
5 paragraph that starts "Hexavalent chromium [vanadium]."
6 Do you see that?

7 A. Yes.

8 Q. All right. Was that paragraph what you wrote
9 into the e-mail?

10 A. I am trying -- when I read this, I was trying
11 to figure out what I wrote and what I didn't write. I
12 don't -- I don't know. I am thinking -- I just don't
13 recall.

14 Q. Okay.

15 A. Actually, I don't recall doing this, but that
16 is ---

17 Q. Well, let me just ask you this: that paragraph
18 -- and I will read it just for the record so that
19 everybody has the benefit of it.

20 A. Sure.

21 Q. "Hexavalent chromium [vanadium] is a new
22 concern in water chemistry. Much is unknown about it.
23 Because of this, public health will typically start with
24 a very health protective level along with conservative
25 recommendations. We will continue to evaluate the

1 science behind hexavalent chromium [vanadium] as it
2 evolves." And my question is, is that paragraph as
3 written true, in your opinion?

4 A. Yes.

5 Q. So we are up to 281, I think. 281.

6 (DEFENDANT EXHIBIT 281 WAS
7 MARKED FOR IDENTIFICATION.)

8 Let me know when you have had a chance to look
9 at it.

10 (Witness peruses document.)

11 A. Okay.

12 Q. I want to refer to the second e-mail on the
13 page, which is from you to Rick Langley and others, dated
14 August 21 of 2015. And the Subject line is "Forwarded:
15 Health Study," do you see that?

16 A. Yes.

17 Q. What do you recall about this health study?

18 A. I think there was a request to look at cancer
19 rates at locations -- and it doesn't say the location.
20 It doesn't say -- except for the second paragraph, it
21 says "surrounding vanadium." So we do a lot of cancer
22 study. We request things from the Cancer Registry. And
23 this doesn't really give me enough information to know
24 which one, because we do a lot of them.

25 We do a lot of requests to the Cancer

1 Registry. So without any specific -- "Please see short
2 deadline. I think we are 32 or so ponds in North
3 Carolina." I would assume it is dealing with ponds in
4 North Carolina. It doesn't say which ponds.

5 Q. You would assume that they are referring to
6 ash ponds?

7 A. Don't know. It just says "ponds."

8 Q. Do you recall anything further, after this
9 series of e-mails, about a cancer study relating to
10 ponds?

11 A. We would get a copy of that study. And
12 nothing comes to mind that was notable -- if we got a
13 copy of that. So I would have to go back and check my
14 records to see -- to see that data again. I just don't
15 recall at this time any of the specifics of this health
16 study.

17 Q. As we sit here today, in April of 2016, do you
18 believe that this study referred to in Exhibit 281 would
19 have been completed?

20 A. Yes.

21 Q. And you think you might have records on that?

22 A. Yes.

23 Q. In your e-mail of August 21, 2015, at the
24 second paragraph you write, "This will be tricky, since
25 the outcomes are so general. See below." What did you

1 mean by that?

2 A. I just don't recall. Normally, when I say
3 "general," that means the health outcomes are difficult
4 to pinpoint. With the Cancer Registry, they are very
5 general if you are looking for health outcomes. Some of
6 the data sets we have, they are not specific.

7 For example, if you are looking for
8 gastrointestinal illness, it is real general to see
9 trends. But if you look for salmonella poisoning, that
10 is more specific. That is an example of what the being
11 tricky is.

12 Q. And that is also true with respect to the
13 health effects surrounding vanadium?

14 A. I think I say in there, "This will be tricky,
15 since outcomes are so general."

16 Q. Do you believe that to be correct?

17 A. Yes.

18 (Pause.)

19 MR. LONG: 282 is our next one?

20 COURT REPORTER: 282.

21 (DEFENDANT EXHIBIT 282 WAS
22 MARKED FOR IDENTIFICATION.)

23 BY MR. LONG:

24 Q. Dr. Shehee, I am showing you what we have
25 marked as Exhibit 282. Let me know when you have had a

1 chance to look over the two page document.

2 (Witness peruses document.)

3 A. Yes.

4 Q. Do you recognize this document?

5 A. Yes.

6 Q. What is it?

7 A. It is an overview of what we have done, of
8 information. And I can't remember or recall who this was
9 intended for. It could have been internal, it could have
10 been anybody. I am not sure who this went to.

11 Q. Do you recall who prepared it?

12 A. I want to say me, but I am not sure. It looks
13 like something I would write for upper management.

14 Q. So you have not looked at any report on cancer
15 incidence rates that you can recall for counties which
16 have coal ash storage facilities, as you sit here ---

17 A. (Interposing) I would -- I would have to -- I
18 would have to read through the CCR report to see -- to
19 refresh my memory on that.

20 MR. LONG: Okay. We are done.

21 MR. ROBBINS: If we could reserve the right
22 to review and sign, please.

23 MS. LeVEAUX: And I am just going to need to
24 get copies of these exhibits, if we can do that.

25 MR. LONG: I can give you my copy.

1 MS. LeVEAUX: That would be great. I have
2 no questions. We have no questions here.

3 MR. ROBBINS: Thank you very much.

4 (THE DEPOSITION WAS CLOSED AT 2:59 P.M.)

S I G N A T U R E

I HAVE READ THE FOREGOING PAGES 8 TO 170 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 MINA WALLIN SHEHEE, Ph.D.)

STATE OF _____

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:

(NAME OF PRINCIPAL)

(DATE)

(SIGNATURE OF NOTARY)

(OFFICIAL SEAL)

(NOTARY'S PRINTED NAME)

I, MICHAEL B. CARTER, NOTARY/REPORTER, DO CERTIFY THAT THE FOREGOING TRANSCRIPT WAS DELIVERED TO THE WITNESS EITHER DIRECTLY OR THROUGH THE WITNESS' ATTORNEY OR THROUGH THE ATTORNEY RETAINING THE WITNESS ON _____, AND THAT AS OF THIS DATE, I HAVE NOT RECEIVED THE EXECUTED SIGNATURE PAGE OR ERRATA SHEET.

THEREFORE, MORE THAN 30 DAYS HAVING ELAPSED SINCE THE RECEIPT OF THE TRANSCRIPT BY THE WITNESS, THE SEALED ORIGINAL TRANSCRIPT IS HEREBY FILED WITH THE ORDERING ATTORNEY BY MEANS OF PRIORITY MAIL IN ACCORDANCE WITH THE NORTH CAROLINA RULES OF CIVIL PROCEDURE.

(DATE)

MICHAEL B. CARTER, NOTARY/REPORTER
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 MINA WALLIN SHEHEE, 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 171 PAGES 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 2ND DAY OF MAY, 2016.

MICHAEL B. CARTER
NOTARY PUBLIC FOR THE
STATE OF NORTH CAROLINA
NOTARY NUMBER 19960030065
MY COMMISSION EXPIRES
FEBRUARY 15, 2021