

STATE OF MICHIGAN  
IN THE 67<sup>TH</sup> DISTRICT COURT FOR THE COUNTY OF GENESEE

THE PEOPLE OF THE STATE OF MICHIGAN

CASE NO. 17T-1355-FY

V.

NICOLAS LYON

Defendant.

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PRELIMINARY EXAMINATION VOLUME XX  
BEFORE THE HONORABLE DAVID J. GOGGINS, DISTRICT JUDGE  
Flushing, Michigan - Monday, March 26, 2018

APPEARANCES:

For the People:

MR. TODD FLOOD (P58555)  
Michigan Department of Attorney General  
Office of Special Counsel  
Special Assistant Attorney General  
155 West Congress, Suite 603  
Detroit, Michigan 48226  
(248) 547-1032

MR. PAUL STABLEIN (P42544)  
Michigan Department of Attorney General  
Office of Special Counsel  
Special Assistant Attorney General  
155 West Congress, Suite 603  
Detroit, Michigan 48226  
(248) 547-1032

MS. ALEX EDELEIN (P80971)  
Office of Special Counsel  
Special Assistant Attorney General  
155 West Congress, Suite 603  
Detroit, Michigan 48226  
(248) 547-1032

For the Defendant:

MR. CHIP CHAMBERLAIN (P33536)  
Willey & Chamberlain  
300 Ottawa Avenue NW, Suite 810  
Grand Rapids, Michigan 49503  
(616) 458-2212

MS. BRITT COBB (P69556)  
Willey & Chamberlain

300 Ottawa Avenue NW, Suite 810  
Grand Rapids, Michigan 49503  
(616) 458-2212

MR. LARRY WILLEY (P28870)  
Willey & Chamberlain  
300 Ottawa Avenue NW, Suite 810  
Grand Rapids, Michigan 49503  
(616) 458-2212

RECORDED BY: Janet M. Driesen (CER7296)  
Certified Electronic Recorder  
(810) 659-5659

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1 Flushing, Michigan

2 Monday, March 26, 2018, at 11:16 a.m.

3 THE COURT: We're back on the record with People  
4 versus Nicolas Lyon.

5 MR. FLOOD: Good morning, Judge. Todd Flood, along  
6 with Alex Edelen, Paul Stablein on behalf of the People and  
7 our officer in charge Jeff Sepeinko in back. I think Ms.  
8 Carter is here somewhere, Judge.

9 MS. COBB: Good morning, your Honor. Britt Cobb. Mr.  
10 Chamberlain, Andrew Chamberlain on behalf of Mr. Lyon. Mr.  
11 Willey is in Budapest or something like that. I don't know. So  
12 --

13 THE COURT: I did ask, no, no (sic) preliminary  
14 matters before?



1 MR. FLOOD: None by the People, Judge.

2 MS. COBB: None from the defense, your Honor. We are  
3 ready to go with Doctor Marc Edwards.

4 THE COURT: Very good. Would you raise your right  
5 hand for me? Do you solemnly swear or affirm that the  
6 testimony you are about to give will be the truth?

7 THE WITNESS: Yes.

8 THE COURT: Why don't you come up around this corner  
9 and have a seat for me.

10 DOCTOR MARC EDWARDS

11 called as a witness at 11:17 a.m., testified as follows:

12 DIRECT EXAMINATION

13 BY MS. COBB:

14 Q Good morning, Doctor Edwards. Could you please state your full  
15 name your occupation for the record.

16 A Marc Andrew Edwards, I'm a professor of civil engineering at  
17 Virginia Tech.

18 Q Where is Virginia Tech located?

19 A We're in Blacksburg, Virginia.

20 Q As a professor engineering do you engage in any research  
21 projects?

22 A Yes, many.

23 Q Did your research lead you to become involved what has been  
24 commonly called the Flint Water Crisis?

1 A Yes, it did.

2 Q When did your involvement in Flint begin roughly?

3 A My knowledge of what was occurring in Flint occurred in early  
4 2015, through an EPA employee, Miguel Miguel Del Toral who  
5 alerted me to the fact that Flint was having problems with its  
6 drinking water system.

7 Q And, when did you start actively engaging in research in  
8 Flint?

9 A That would have been late April of 2015 when Ms. Leigh Ann  
10 Walters had problems with the health of her family. One of her  
11 twins had elevated lead in his blood and Miguel and Leigh Ann  
12 had figured out that the source was the drinking water and so  
13 I suggested we sample her water and Miguel and Leigh Ann  
14 arranged that to occur.

15 Q I don't want to get into the details of that but broadly  
16 speaking from there forward were you actively involved in  
17 Flint for some period of time and is that involvement  
18 continuing to this day?

19 A Yes, that's correct.

20 Q Can you give Judge Goggins a general overview of the types of  
21 things you had been doing in Flint? Sounds like you were doing  
22 a lot of water research. What else have you been doing in  
23 Flint?

24 A Well, first we were working behind the scenes with Mr. Miguel

1 Del Toral who was trying to elevate this issue within the US  
2 EPA and we supported his efforts to create a memo outlining  
3 the imminence of substantial endangerment to Flint residents  
4 and work with reporter from ACLU Michigan to try to broadcast  
5 that message, and after Mr. Miguel Del Toral was told to  
6 essentially stand down in his efforts in Flint, that he was  
7 not to talk to anyone from Flint or about Flint again, it was  
8 at that point that Virginia Tech started taking much more,  
9 high profile roles, specifically we launched something that  
10 became known as Flint water study, which started with an  
11 effort to conduct the most thorough independent evaluation of  
12 a drinking water probably in US history. Virginia Tech, we  
13 provided the analytical support, the technical knowledge, and  
14 the funding, and we collaborated with Flint residents to look  
15 at every dimension of the drinking water quality. Everything  
16 from Legionella to lead to disinfection byproducts. We went  
17 all in to evaluate the water quality issues, and after our  
18 initial evaluations we started a webpage to announce our  
19 scientific findings. We made a commitment that would be truth  
20 speakers and truth seekers throughout this. We submitted  
21 Freedom of Information Act requests to many Freedom of  
22 Information Act requests to the State of Michigan, to Michigan  
23 Department of Environmental Quality, MDHHS. We posted those  
24 Freedom of Information Act requests online with our commentary

1 and we've been engaged with the Flint issue ever since.

2 Q So fair to say you've been pretty, you've been interfacing  
3 with both residents in Flint and the government in the city  
4 and the state?

5 A That's correct.

6 Q Have you been interfacing with federal government officials as  
7 well?

8 A Yes.

9 Q What about any groups formed by the government to look into  
10 the water crisis? Have you been part of any of those? We've  
11 heard a lot of acronyms flying around during the course of  
12 this case. Have you been involved some of those groups?

13 A Yes, yes (sic) we were involved in the governor's task force,  
14 the FWICC, we were involved in the decision-making in terms of  
15 the federal response. Talked, worked with FEMA, CDC, EPA. Our  
16 general rule is that we will work with anyone who wants to be  
17 part of the solution.

18 Q Who, how did you get to be on the FWIC (sic) Committee?

19 A I was invited by Governor Snyder to participate in that, I  
20 think it was January of 2016.

21 Q Is that group still meeting?

22 A Yes, they are.

23 Q Have you published papers on the research that you've done  
24 during Flint?

1 A Yes. We, from the start we've been publishing all our results  
2 in real time. That's very unusual on our Flint water study  
3 page. We essentially conducted open science where we forego  
4 academic credit if you will for our results and we share it  
5 with the world and we, but we've also since the declaration of  
6 emergency when everyone was working, at least in my opinion to  
7 get Flint fixed, we have published several peer-reviewed  
8 papers and we got several more in progress.

9 Q Do you, have you had the opportunity to speak to other groups  
10 relative to your involvement here in Flint?

11 A Yes, I do so regularly.

12 Q Did you have the opportunity to testify before Congress on  
13 matters related to the Flint water crisis?

14 A Yes, three times so far.

15 Q And has your team at Virginia Tech regularly provided press  
16 releases and other public announcements about the status of  
17 your research?

18 A Yes.

19 Q So you mentioned that it was in early 2015 that somebody at  
20 the EPA by the name of Miguel Del Toral contacted you about  
21 the water quality issues in Flint. Can you explain for Judge  
22 Goggins why an EPA representative would be contacting someone  
23 in Virginia about a Michigan related issue?

24 THE COURT: Judge, to the extent that I wasn't

1 objecting to the hearsay in the beginning portions of this,  
2 unless this is for some foundational purpose I don't have an  
3 objection but it's, if this is for substance and opinion, then  
4 it's hearsay objection so I, just that clarification.

5 MS. COBB: Your Honor, I am just wanting him to  
6 explain to you where his international and national  
7 recognition in these types of issues arose from.

8 THE COURT: I think the objection is based on Mr. Del  
9 Toral's -- I think he was just kind of making sure we --

10 THE COURT: I have no objection to establish that he,  
11 Doctor Edwards, is a renowned doctor dealing with pipe systems  
12 and water treatment systems throughout the country so if  
13 that's what she's trying to establish I don't have an  
14 objection to that.

15 MS. COBB: Well sure. Let me just get to it.

16 THE COURT: Sure.

17 BY MS. COBB:

18 Q Why are you so well-known for water and lead and corrosion-  
19 related issues?

20 A Since the beginning of my career I've been working with  
21 homeowners on problems related to their plumbing systems,  
22 building operators, and I had a hypothesis early in my career  
23 that this is where a lot of health problems were arising,  
24 everything from lead to Legionella. At the time that was

1 considered quite revolutionary. The EPA and the water industry  
2 ended their responsibility at the property line and in my  
3 first consulting job I was working directly with homeowners  
4 and I realized that there was a, something of a conflict of  
5 interest, both in terms of how rules are set and science-wise  
6 wherein these problems that occur in consumer's homes were  
7 ignored, and to some extent were being covered up. So I  
8 dedicated my entire career to working on these problems and it  
9 proves, it's been proven that I was correct. That there is a  
10 lot of issues that are occurring in consumer's homes and so  
11 being one of the first to work on that and getting in all  
12 kinds of trouble for doing so because you're, you're (sic)  
13 proving things that certain groups don't want to hear and  
14 that's put me at odds with many in my field and government  
15 agencies and funding agencies over the years so to some extent  
16 I've become known as a troublemaker but history I think has  
17 vindicated our position.

18 Q Have there been any other cases that you've been personally  
19 involved in that have received sort of this kind of attention?

20 A Nothing to receive the attention the level of Flint although  
21 it should have. The Washington, D.C. lead in drinking water  
22 crisis from 2000-2004 was probably about thirty times worse in  
23 terms of the health harm from lead exposure to children and I  
24 worked as a volunteer probably thirty hours a week on average

1 for six years to expose the, this harm occurred and that  
2 federal government agencies had covered it up scientifically  
3 and so ultimately there was a bipartisan hearing in 2010  
4 roughly six years after the harm occurred that vindicated our  
5 position and I was involved in some lawsuits related to  
6 children whose families felt they were harmed from that, and  
7 those were ultimately resolved I think in 2016. We also  
8 published papers that showed that probably children in  
9 Washington, D.C. were not born (sic) as a result of that lead  
10 exposure. That there was a higher read of adverse pregnancy  
11 outcomes, miscarriages, fetal deaths, so we, me, were heavily  
12 engaged in that but it never received the media attention for  
13 example that Flint did.

14 Q Do you know Nick Lyon?

15 A I know of him and I met him, I've spoken with him maybe twice  
16 to my knowledge.

17 Q Do you know what his position is? What his role is in the  
18 State of Michigan?

19 A Generally speaking, yes.

20 Q And, along the way as you were working in Flint did you have  
21 dealings with the agency he runs, the Michigan Department of  
22 Health and Human Services?

23 A Yes, I did.

24 Q Who was your I guess, who, what people were your primary



1 points of contact there at MDHHS?

2 A Well initially it was Robert Scott, who I had worked with a  
3 few years before on a Freedom of Information Act request to  
4 get data about lead levels in children and that was probably  
5 about August or early September of 2015.

6 Q Okay.

7 A And, thereafter my primary contact became, other than the FOIA  
8 officer or officers who I was harassing to get information it  
9 eventually became Doctor Eden Wells.

10 Q Would that be sort of typical that as a scientist and  
11 researcher you'd be dealing with another doctor or someone  
12 more on the science side rather than the director of the  
13 Department?

14 A When things are working correctly that is what you would hope  
15 would happen, yes.

16 MS. COBB: I guess we're not going to have any issues  
17 with this, but I would like to approach you with your CV.

18 BY MS. COBB:

19 Q Do you recognize that, Doctor Edwards?

20 A Yes, I do.

21 Q What is that?

22 A It's just a listing of my work experience, publications,  
23 presentations.

24 Q Looks like it's about eighty or ninety pages long.

1 A Yes.

2 Q By the way, I have this marked as LLL.

3 MR. FLOOD: There's no objection.

4 MS. COBB: Okay.

5 MR. FLOOD: Stipulate.

6 MS. COBB: I move for the admission of his CV, your  
7 Honor.

8 THE COURT: DEX#LLL is admitted.  
9 (at 11:31 a.m., DEX#LLL is admitted)

10 BY MS. COBB:

11 Q Doctor Edwards, where did you get your PHD?

12 A At the University of Washington in Seattle.

13 Q When was that?

14 A That was '86 to 1990.

15 Q What was your area of concentration?

16 A Drinking water treatment.

17 Q What was your undergraduate degree in?

18 A It was in Biophysics which is part of the medical school at  
19 State University of New York at Buffalo.

20 Q Now after you got your PHD where did you go work?

21 A I first worked with James Montgomery Consulting in San  
22 Francisco Bay area.

23 Q What were you doing there?

24 A Getting into trouble, working with consumers on plumbing

1 problems. That was my first job.

2 Q And where did you go from there?

3 A I went back to the University of Washington to get a post doc  
4 where I had already decided to dedicate my career to those  
5 issues and after that I obtained my first tenured track  
6 position at the University of Colorado, Boulder.

7 Q How long were you at Colorado?

8 A Six years.

9 Q And then you land at Virginia Tech after that?

10 A Yes.

11 Q Would you say that water corrosion issues have been the  
12 primary focus of your training and education?

13 A I would more broadly define it as everything related to what's  
14 called building plumbing or premise plumbing issues.  
15 Everything from the bacteria that grow there, the medical  
16 contamination, the complaints consumers have, operation of hot  
17 and cold water systems, failures of those systems, just  
18 everything in that arena. That's where I dedicated most of my  
19 time but since there wasn't funding in that area, especially  
20 early in my career I did normal work for water utilities, for  
21 the US EPA, for the National Science Foundation because I had  
22 to support this new research area kind of as a hobby on the  
23 side until it became respected.

24 Q Are you, do you currently serve on any committees related to

1 the study of Legionella?

2 A Yes.

3 Q Can you talk about that a little bit?

4 A The National Sanitation Foundation about two years ago started  
5 the first joint committee to come up with standards on  
6 Legionella control in buildings and I was an inaugural member  
7 of that committee.

8 Q Have you published peer-review articles?

9 A Many, yes.

10 Q I think thumbing through your CV I counted about two hundred,  
11 does that sound about right?

12 A That's correct.

13 Q What percentage of those would be related to the types of  
14 issues we're dealing with here, microbial growth, corrosion,  
15 Legionella, that kind of thing?

16 A Probably seventy percent.

17 Q How many, well, looking at your CV it looks like you have  
18 about three pages worth of professional honors and awards. Can  
19 you name kind of your hit list of awards that are most  
20 important to you?

21 A Well, I don't really live to get these awards so they're not  
22 as important as the research we do but certainly our work has  
23 been acknowledged with external awards. Amongst the ones that  
24 were the most meaningful to me at the time were Best

1           Dissertation Awards early in my career from the two national  
2           professor organizations. I got a Presidential Faculty  
3           Fellowship from the White House, MacArthur Fellowship. Those  
4           were nice because it helped get me funding to try to do good  
5           with science.

6   Q       Have you received any awards in connection with your work in  
7           Flint?

8   A       Yes.

9   Q       Can you tell us what that is or what they are?

10 A       Well we've received a lot of awards recognizing our  
11           professional ethics for getting involved in Flint. It's an  
12           ethical cannon and the first cannon of civil engineering is to  
13           defend the public welfare. We've gotten more than our fair  
14           share of recognition for our role collaborating with Flint  
15           residents, so.

16 Q       Have you ever testified as an expert before?

17 A       Yes.

18 Q       How many times do you suppose?

19 A       I would guess six or seven.

20 Q       In a courtroom?

21 A       Yes.

22 Q       And have you testified outside of the Court as an expert on  
23           more occasions than that?

24 A       Testified outside? You mean to Congress or other group?

1 Q Yep (sic) or depositions, that type of thing?

2 A Yes, yes (sic).

3 Q Have you been accepted as an expert in multiple courts?

4 A Yes.

5 MS. COBB: Your Honor, at this point I'd like to  
6 offer Mr. Edwards as an expert in premises plumbing, which  
7 would include water corrosion and bacterial growth.

8 THE COURT: Mr. (sic)?

9 MR. FLOOD: I don't think, I'm not going to have an  
10 objection to that, Judge. May I voir dire just for a brief  
11 moment?

12 THE COURT: You may.

13 VOIR DIRE

14 BY MR. FLOOD:

15 Q Doctor Edwards, good morning.

16 A Good morning.

17 Q You've testified a few times I understood in Court primarily  
18 in state Court in D.C.? Washington, D.C.?

19 A I've testified in D.C., San Francisco, yeah. I don't know if  
20 those are state courts. I think.

21 Q Very well, and your testimony, you were, basically you met the  
22 standards to be an expert in premise plumbing?

23 A Yes.

24 Q San Francisco, when was that?

1 A Probably my first Court cases out there were around the year  
2 2000.

3 Q Just real quick. You went through West Virginia, I'm sorry,  
4 Virginia Tech, and prior to that you were at Colorado?

5 A Yes.

6 Q And you were in your teaching capacity and your tenured track  
7 there?

8 A Yes.

9 Q Why did you leave Colorado?

10 A Because Virginia Tech made me an offer I couldn't refuse.

11 Q Sounds like out of a movie. Alright.

12 MR. FLOOD: I have no objections, Judge. Thank you,  
13 as it relates to premise plumbing.

14 THE COURT: I just have, just so, not really a  
15 concern.

16 MS. COBB: Sure.

17 THE COURT: Sir, you got your degree in Engineering  
18 really? You familiar with the, I guess the state plumbing  
19 codes for Michigan?

20 THE WITNESS: Not so much.

21 THE COURT: Okay.

22 THE WITNESS: I'm aware of some aspects of those but  
23 I don't specialize in plumbing codes.

24 THE COURT: Just on the systems themselves kind of?

1 THE WITNESS: Yes, just general operations systems in  
2 particular for control of lead and Legionella.

3 THE COURT: Anything else?

4 MS. COBB: No. Thank you.

5 THE COURT: This witness is qualified as an expert in  
6 premises plumbing as it relates to bacterial growth, corrosion  
7 and (sic).

8 MS. COBB: Thank you, your Honor.

9 BY MS. COBB:

10 Q Doctor Edwards, that was of course Todd Flood asking you some  
11 questions. Have you and he met before?

12 A Yes. I think on two occasions.

13 Q Did you, was he, were you interviewed by him in connection  
14 with this case as well?

15 A Yes.

16 Q You and I have met a couple of times?

17 A Yes.

18 Q So I want to kind of get down to the details of your  
19 involvement here in Flint. You kind of gave us a thumbnail  
20 sketch that Mr. Del Toral from the EPA called you and that led  
21 to you being involved with a Flint citizen named Leigh Ann  
22 Walters. Now when, without telling us what she said when you  
23 became involved with Ms. Walters what did you do? What did you  
24 decide needed to be done regarding the concerns she had?



1 A Well what we wanted to do was scientifically quantify the  
2 levels of lead that were in her plumbing before her lead pipe  
3 was changed in early May 2015.

4 Q So what did you do? How were you going to do that?

5 A We did that by conducting about a thirty bottle sampling event  
6 at her home. I talked with her on the phone, stepped her  
7 through it to make sure the protocols were being followed  
8 properly. She Federal Expressed the samples to us. We analyzed  
9 them at Virginia Tech.

10 Q And what did the results reveal?

11 A Horrifically high levels of lead in her drinking water.  
12 Probably the worst I'd seen in my career.

13 Q Did you share those results with anyone?

14 A Yes, I did.

15 Q Are you familiar with the Lead and Copper Rule?

16 A Yes.

17 Q Can you explain for the record what that is and why it's  
18 important?

19 A The Lead and Copper Rule is the first building plumbing rule.  
20 It was the first time that regulatory agencies were required  
21 to protect consumers for the water as it goes into their home.  
22 All other regulations are based on measurements that occur of  
23 water before the property line.

24 Q And what law covers water before it reaches the property?

1 A The Safe Drinking Water Act. The Lead and Copper Rule is part  
2 of that but it's the only rule that requires you collect  
3 samples in consumers homes because there's no lead generally  
4 speaking in water mains before the house. The lead sources  
5 start in the service line that connects your home to the water  
6 main.

7 Q So what is the Lead and Copper Rule, what is it designed to do  
8 or protect against or monitor for?

9 A The Lead and Copper Rule is designed to ensure that water  
10 utilities do, take part of the responsibility for what happens  
11 to the water to the consumers tap. Essentially based on a city  
12 wide sampling of the targeting worst case homes in a city, you  
13 come up with a number called the 90<sup>th</sup> Percentile Lead and if  
14 that number exceeds the federal standards you have to take  
15 additional steps to alert the public to potential harm and  
16 implement corrosion control. It also required that water  
17 companies conduct corrosion control and this is not just to  
18 control lead in drinking water but it's also to reduce damage  
19 to the plumbing systems of residents and the community.

20 Q So you've used the word corrosion control. Can you explain  
21 exactly what that is and exactly what it's designed to  
22 prevent?

23 A Corrosion control involves modifying the chemistry of the  
24 water to accomplish multiple objectives. The first objective

1 in relation to Lead and Copper Rule is to keep lead on the  
2 pipe and out of the water but it's also designed to protect  
3 the pipes from corrosion and reduce costs of operating a water  
4 system.

5 Q So if there is a corrosive water in a water system what do you  
6 expect to see coming through the premises?

7 A Well the actual impacts of not having proper corrosion control  
8 depend on the circumstance. There's no simple answer.  
9 Sometimes you will see red-colored water which indicates iron  
10 rust in the system. Sometimes you will see nothing because  
11 lead can be colorless and invisible but yet it's health harm  
12 is still manifested in those who consume it. Sometimes you see  
13 blue water, which is from copper. Sometimes you don't see  
14 anything. Sometimes you just see your pipes starting to leak,  
15 so it really depends on specific circumstance and it's  
16 extremely complicated.

17 Q Okay, would a city be servicing, would a city water system  
18 servicing as many people as live in Flint be required under  
19 the Lead and Copper Rule to treat their water for corrosion  
20 control?

21 A Yes.

22 Q Is it a relatively simple thing to do?

23 A Well it can be. You know, you can, there's two general  
24 approaches. One is to feed orthophosphate in the appropriate

1 PH range. That's used by about 50% of water companies in the  
2 United States. Another approach is to adjust the PH in  
3 alkalinity that's used by roughly the other 50%. Some cities  
4 do a good job of trying to find the best condition in which  
5 case it can be complicated. Other cities, they just follow  
6 cookbook recipes and you know, do what their neighboring  
7 utilities do and that's often accepted as good enough.

8 Q Have you learned through your involvement in Flint that prior  
9 to April of 2014 the city of Flint was receiving treated water  
10 from Detroit?

11 A Yes.

12 Q And, have you learned through your involvement in Flint that  
13 after they stopped receiving water from Detroit and started  
14 using the Flint River that there was not any corrosion control  
15 treatment in place?

16 A Yes.

17 Q In Michigan whose responsibility is it to ensure that the  
18 local water utilities are complying with the Lead and Copper  
19 Rule?

20 A Michigan Department of Environmental Quality.

21 Q And is it accurate to say that the Michigan Department of  
22 Environmental Quality was not requiring that here?

23 A Yes.

24 Q In your opinion was that a violation of the Lead and Copper

1 Rule?

2 A Yes.

3 Q And, in your opinion did that violation have sort of  
4 devastating consequences to the city of Flint?

5 A Yes.

6 Q Now when you became involved initially in April of 2015 was it  
7 widely known at that time that Michigan Department of  
8 Environmental Quality was not requiring corrosion control  
9 treatment in the Flint River water?

10 A I don't believe it was widely known, no.

11 MR. FLOOD: Judge, I think that would be speculation  
12 as it relates to who knew what, when and his belief system as  
13 it relates to who specifically. Was it believed in the local  
14 city department? Was it believed by the Emergency Managers?  
15 Was it believed by the County? Where and the like, so that  
16 would be my objection.

17 MS. COBB: Okay. Sure.

18 BY MS. COBB:

19 Q Was the EPA aware that the Michigan Department of  
20 Environmental Quality was not requiring corrosion control  
21 treatment?

22 A Certainly Miguel Del Toral was, yes.

23 Q Was that something that the Michigan Department of  
24 Environmental Quality was being transparent about?

1 A No.

2 Q Have you had the opportunity to look back through some of the  
3 communications about the different governmental agencies with  
4 the Michigan Department of Environmental Quality about this  
5 issue?

6 A Yes.

7 Q Was the Michigan Department of Environmental Quality hiding  
8 the lack of corrosion control treatment from the Governor's  
9 office?

10 THE COURT: Hold on, hold on, hold on (sic).

11 MR. FLOOD: Yeah, Judge. Can we approach for just  
12 briefly?

13 THE COURT: Sure.

14 (from 11:47 a.m., to 11:51 a.m., bench conference,  
15 off the record, all parties present)

16 MS. COBB: I think we've come to a détente on the  
17 question I can ask you.

18 BY MS. COBB:

19 Q In your analysis of what went on in Flint, was the Michigan  
20 Department of Environmental Quality hiding a lack of corrosion  
21 treatment from the public and other governmental agencies?

22 A Yes. Basically whenever a question was posed in the emails I  
23 reviewed Michigan Department of Environmental Quality  
24 employees would not be forthcoming about what was happening.

1 Q Now I am going to show you what has already been admitted into  
2 evidence as DEX#R. Do you recognize this?

3 A Yes.

4 Q What is that?

5 A That's the memo that Mr. Del Toral wrote in late June 2015.

6 Q Who is the memo directed to?

7 A To Thomas Coy at EPA.

8 Q And were you copied on this memo?

9 A Yes, I was.

10 Q Who else was copied on the memo?

11 A I believe Leigh Ann Walters.

12 Q Anybody else in government?

13 A Liane Shekter Smith, Pat Cook, Steven Busch, Michael Prysby,  
14 Mark Edwards, Mike Schock, Taryn Leidel (sic), and I see Liane  
15 is not cc'd but she was given a copy of this.

16 Q And those other people that you mentioned are they with either  
17 the EPA or the Michigan Department of Environmental Quality?

18 A Yes.

19 Q Why was this memo sent? Why are you copied along with those  
20 people?

21 A For two reasons. One, to, because I contributed data to this  
22 report.

23 Q Okay.

24 A Secondly, it was to send a message that this memo had been

1 leaked outside of government.

2 Q So when you say this memo had been leaked outside of  
3 government, did this memo expose a lack of corrosion control  
4 issue?

5 A In no uncertain terms, yes.

6 Q Do you have any sort of an opinion, Doctor Edwards on whether  
7 the entire crisis here would have been avoided if Michigan  
8 Department of Environmental Quality had followed the Lead and  
9 Copper Rule?

10 A It's my belief that the major problems associated with the  
11 Flint Water Crisis including the discolored water, the lead in  
12 water, and the Legionella outbreak would have not been as  
13 severe and may not have occurred at all if federal law had  
14 been followed.

15 Q There is a timeline attached to the back of this memo and I'd  
16 kind of like to highlight a few things to go through with you,  
17 Doctor Edwards.

18 A Sure.

19 Q Looking at entry #13 which is a February 2015 entry, what is  
20 that say?

21 A Yes. EPA Region 5 receives a call from Ms. Walters regarding  
22 the high lead levels discovered in the home. The city of Flint  
23 once again tested drinking water iron level in the Walters  
24 residence. The result is once again beyond the measurement



1 capability.

2 Q So what does that mean?

3 A The iron was so high that we don't know how high it was.

4 Q Now going down to entry #19, related to March 19, 2015. Can  
5 you tell us what that says?

6 A EPA Region 5 calls Michigan Department of Environmental  
7 Quality expressing concern regarding the high lead levels  
8 found. Do you want me to read the whole thing?

9 Q Please, if you don't mind.

10 A The Michigan Department of Environmental Quality response  
11 received via voicemail states that the high lead levels at the  
12 Walters home is due to lead sources in the homeowners  
13 plumbing. In previous and subsequent conversations with Ms.  
14 Walters she stated that the plumbing has always been plastic.  
15 And, inspection conducted by the EPA confirmed that all pipes,  
16 fittings, and valves in the Walters home are essentially  
17 plastic, to paraphrase.

18 Q So what does that say to you? The Michigan Department of  
19 Environmental Quality response to EPA's inquiry about the lead  
20 found in Ms. Walters home?

21 A The, they told, they made a false statement about the source.  
22 They were trying to attribute it to her plumbing. They were  
23 trying to tell her that, trying to tell the EPA that.

24 Q Now I'm going to approach you with an Exhibit that's been

1           previously admitted as PEX#28 and ask if you recognize this.  
2           It might take you a second to thumb through it, Doctor  
3           Edwards.

4   A       Yes, I recognize this.

5   Q       It's an email chain, right?

6   A       Yes.

7   Q       Who, who, who (sic) is on it?

8   A       Brad Wurfel, Harvey Hollins of the Governor's office, Dan  
9           Wyant, Department of Environmental Quality.

10   Q       If you turn to the back page who do you see is initiating this  
11           email chain? What is the inquiry?

12   A       The back page is James Henry, from Genesee County Health  
13           Department.

14   Q       What is his inquiry, Doctor Edwards?

15   A       He's trying to get information since October 2014 including a  
16           Freedom of Information Act request.

17   Q       Who responds to his inquiry?

18   A       The first response it's sent to Howard Croft so Liane Shekter  
19           Smith of the Department of Environmental Quality.

20   Q       What is the message from Department of Environmental Quality?

21   A       The message is that the Freedom of Information Act is directed  
22           to the city of Flint, not Department of Environmental Quality.  
23           They should develop a joint strategy response with DCH.

24   Q       Have you seen this email before?

1 A Yes, I have.

2 Q Have you ever had the opportunity to present or lecture about  
3 this email?

4 A Yes.

5 Q In what context?

6 A Well I don't know if it's this specific, okay, yes. I've given  
7 ethics lectures nationally and internationally on the  
8 Legionella outbreak in Flint and the ethical responsibilities  
9 of scientists and engineers related to that subject. I gave  
10 this in Switzerland and I think it was the Netherlands, twice,  
11 over the course --

12 Q -- And what is the message that you're sending regarding this  
13 particular email?

14 A How to tell a big, giant lie with a lot of half-truths.

15 Q And the big, giant lie being told by whom?

16 A Michigan Department of Environmental Quality employees.

17 Q And specifically in this email to whom?

18 A This email is, well, this is kind of, so this is talking about  
19 an email to Mr. Henry.

20 Q Of Genesee County Health Department?

21 A Correct.

22 Q Now so regarding what you, regarding getting Mr. Del Toral's  
23 memorandum and learning about the lead problem in the Walters  
24 home, what did you decide to do?

1 A Well, we hope that the EPA would do their job and force  
2 Michigan Department of Environmental Quality to do their job.  
3 That was the hope and plan because you're trying to work  
4 within the system until that fails. But once that failed we  
5 launched our independent investigation at that point. We,  
6 yeah, we would do the job that EPA and Michigan Department of  
7 Environmental Quality were refusing to do.

8 Q Now one other issue on this Del Toral memorandum before we  
9 move on, can you read the entry, entry #20 dated March 26,  
10 2015?

11 A Right.

12 Q What does that say?

13 A EPA Region 5 learns that the health department's looking at  
14 whether there's a potential uptick in cases of Legionella in  
15 the county, which includes the city of Flint. Do you want me  
16 to continue?

17 Q Please.

18 A Their recent bacteriological and other distribution system  
19 water quality issues, EPA Region 5 contacted EPA ORD in  
20 Cincinnati to discuss possible support for assessing whether  
21 the potential uptick in Legionella is being assessed by  
22 Genesee County.

23 Q So what does this entry on Mr. Del Toral's timeline tell you  
24 to do or suggest to you to look into?

1 A Well, I mean he was trying to get EPA employees to look at  
2 this issue and help everyone involved.

3 Q So the Legionella issue was also on the radar at the EPA in  
4 the Spring of 2015?

5 A Yes.

6 Q So in addition to wanting to do some lead testing in Flint,  
7 what else do you decide you want to do?

8 A Well we wanted to check out every possible concern that Flint  
9 residents had to the extent we were humanly and scientifically  
10 capable of doing that. So that included things like  
11 disinfection byproducts, fecal bacteria, and we also wanted to  
12 test a new hypothesis we had that lack of corrosion control  
13 would potentially cause a Legionella outbreak.

14 Q So I'd like to focus on that for a few minutes. So prior to  
15 July 2015 did you and your team of researchers have a  
16 hypothesis on a possible relationship between a lack of  
17 corrosion control and aging infrastructure and the presence of  
18 pathogens?

19 A Yes, we had developed that hypothesis in the two years before  
20 through laboratory experiments conducted for the National  
21 Science Foundation, the Sloan Foundation.

22 Q And, what types of pathogens did you think might be created in  
23 this type of water environment?

24 A We specifically hypothesized that Legionella would be growing

1 in the premise plumbing under those conditions but we also  
2 wanted to look for every known type of opportunistic pathogen  
3 that we also studied. Thing like, you know, Mycobacteria (sic)  
4 again for example, to Pseudomonas aeruginosa.

5 Q When you received Mr. Del Toral's memorandum did you submit a  
6 grant proposal to obtain funds to fund a study?

7 A Yes, we did.

8 Q I'm going to approach you with what I've marked as DEX#EEE.  
9 What is that, Doctor Edwards?

10 A This is a proposal for an emergency grant from the National  
11 Science Foundation to study the possible presence of  
12 Legionella bacteria in Flint drinking water as well as the  
13 lead problem, other bacteria.

14 Q When did you submit this grant proposal?

15 A It was late July, early August 2015.

16 Q What was the basic hypothesis?

17 A The primary hypothesis was that the unique circumstances  
18 present in the Flint water system would grow opportunistic  
19 pathogens such as Legionella bacteria. We were also looking  
20 for elevated lead in Flint homes as well but the primary  
21 hypothesis was because it's a research grant. That means you  
22 have to study something new so the idea that you don't have  
23 corrosion control and you have high lead, that's not new. That  
24 was controversial, it was topical, but in order to get funding

1 for an emergency grant you have to express what is new about  
2 what you are studying. In this case it was the idea that  
3 corrosion control and lack of corrosion control would cause a  
4 Legionella outbreak.

5 Q So the lead wasn't new but the Legionella was. So am I  
6 understanding you correctly, have there ever been any other  
7 previous papers published on this theory prior to July of  
8 2015?

9 A Just by my research group, yeah, we had just published two  
10 papers, I think it was in the few months before. Obviously  
11 we've been doing that work for a long period of time but we  
12 were the first ones to really develop that hypothesis.

13 Q Were, prior to July 2015 had there ever been any cases linking  
14 an outbreak of Legionnaire's Disease to the municipal water  
15 supply?

16 A Well there have been outbreaks that were linked to  
17 deficiencies in how the system was operated but never due to  
18 simply a lack of corrosion control, for example, kind of  
19 triggering an outbreak.

20 Q Okay, so the idea that the lack of corrosion control would  
21 trigger an outbreak was a new hypothesis by you in July of  
22 2015?

23 A Yes.

24 Q And am I understanding you correctly that you thought that

1 Flint would be a pretty good place to test out this hypothesis  
2 once you got Mr. Del Toral's memo?

3 A Yes, it was unfortunately the ideal experiment that you would  
4 never get permission to conduct ever.

5 Q And what kind of funding did you get for this grant?

6 A We got, I think it was \$50,000 which translates to \$33,000 of  
7 money we can actually spend after overhead.

8 Q So when did that grant get funded?

9 A It was funded probably by about September, mid-September I  
10 think of 2015.

11 Q So before you get your funding do you start doing some  
12 testing?

13 A Yes. Mid-August we took my wife's minivan, I loaded with  
14 graduate students and equipment. We came to Flint to conduct  
15 this investigation.

16 Q So can you tell us with the minivan and with your students,  
17 what did you do?

18 A We worked very hard for a period of a few days. I met Liane  
19 for the first time on that trip in person. We went in the  
20 footsteps of where the city tested their water in terms of  
21 chlorine so much so that at a Taco Bell as they were coming  
22 out doing their testing, I was going in.

23 Q Okay.

24 A We also tested consumer's homes in areas that we thought would



1 have a high likelihood of showing Legionella if it was a city-  
2 wide problem, things of that nature.

3 Q So and do you remember the exact dates that you were in Flint  
4 doing this?

5 A It was mid-August.

6 Q Mid-August, the 17<sup>th</sup> through 19<sup>th</sup> sound about right?

7 A Right.

8 Q This was what year?

9 A 2015.

10 Q I'm going to show you what has been previously admitted as  
11 PEX#54. It's kind of this crazy chart. Do you recognize it?

12 A Yes, I do.

13 Q What is that?

14 A This is measurements of free (sic) chlorine that the city  
15 designated at water sites throughout the city. This is  
16 requirement of the Safe Drinking Water Act to make sure  
17 chlorine residuals are adequate.

18 Q And over on the right side there are monitors, there are eight  
19 monitoring stations listed. Is that where you did your  
20 testing?

21 A Yes.

22 Q So in August you came up here and you did testing around the  
23 city at, when you're testing are you getting the water  
24 directly from the water supply? Or are you testing at the

1 buildings that house these monitoring stations?

2 A You're testing the buildings but you are testing them in a way  
3 that's designed to get the water that's in the water main but  
4 we also did other testing designed to look at what the water  
5 quality was in the building to the extent we could so we  
6 weren't just repeating what the city had done but we were  
7 doing other more exhaustive testing designed to see whether  
8 there was the bacteria.

9 Q So my understanding you correctly that you collected samples  
10 from multiple places at these monitoring, within each of these  
11 eight monitoring stations?

12 A Yes.

13 Q What about homes? Where did you go to sample homes? Not exact  
14 addresses of course but where generally? How did you pick  
15 them?

16 Q We, well, we took the homes that were made available to us. At  
17 this point our collaboration with residents was just starting  
18 so we worked with the residents who had the most complaints  
19 about their water and figured correctly so that those would  
20 probably have the conditions most likely suited to growing  
21 Legionella.

22 Q And were they roughly distributed throughout the city of Flint  
23 or do you remember?

24 A No. I mean, we didn't have enough homes to get a distribution

1 at that point. Again, we were just trying to look at homes of  
2 the consumers who had the most complaints about their water  
3 and with the thought that that would likely have the chemistry  
4 that would most likely grow Legionella.

5 Q And, again, this was in August of 2015?

6 A Yes.

7 Q So would this have been a time where if you were going to find  
8 pathogens such as Legionella in the water that you would have  
9 expected it would be a primetime for that?

10 A Yes. It was the optimal time to look.

11 Q I'm going to approach you --

12 MS. COBB: Did I move for the admission of the last  
13 Exhibit?

14 THE COURT: Actually I haven't admitted any.

15 MS. COBB: That was his paper, the grant, before I  
16 forget. Do you have any objection?

17 MR. FLOOD: No, I don't have an objection to his.

18 THE COURT: DEXPPP is admitted.

19 MS. COBB: Okay, PPP.

20 BY MS. COBB:

21 Q Now I'm approaching you with what I marked as DEX#VVV. What is  
22 that?

23 MR. FLOOD: I think you gave me the original.

24 MS. COBB: That's okay.

1 BY MS. COBB:

2 A So this is a report on our sample results that I believe was  
3 written up in 2016, a more formalized presentation. We  
4 announced our results immediately on our website as we've done  
5 throughout the study.

6 Q These are the results of the sampling event in August 2015 at  
7 the homes and small buildings in Flint?

8 A Yes.

9 Q And did you find pathogenic Legionella in any of the homes or  
10 small businesses?

11 A None.

12 Q Was that what you expected?

13 A No. In fact, we were so shocked we re-analyzed the samples  
14 multiple times, we did additional QAQC. It was completely  
15 contrary to our hypothesis.

16 Q And that hypothesis being again?

17 A That Legionella pneumophila, the deadly form of Legionella  
18 would be present in Flint homes.

19 Q And it simply wasn't?

20 A There was none.

21 Q I think you mentioned you put this up on your website. Do you  
22 know when these test results went up?

23 A September 2015 we announced our perplexed results and the fact  
24 that our hypothesis had been proven incorrect.

1 Q Well were you deterred by the lack of these results or did you  
2 continue your testing?

3 A Well we were obviously, there were many, many (sic) things we  
4 were looking at. As I said this was one of the largest  
5 independent evaluations of water quality in U.S. history. If  
6 you look at the arc of our webpage, list of the announcements  
7 we made in 2015 were that the state was correct about many,  
8 many (sic) things. Bacteria, fecal bacteria levels were low.  
9 The DBP's (sic) were looking good. The Legionella, contrary to  
10 our hypothesis was low. So, you know, we report all our  
11 results whether, you know, it's open science. So whether it  
12 completely contradicted what our hypothesis was or not we felt  
13 it was important to share those results with the public, with  
14 everyone in real time but we did discover a widespread lead  
15 problem that was consuming a lot of our time because we had a  
16 fight on our hands with Michigan Department of Environmental  
17 Quality in terms of getting them to admit simple things like  
18 there was no corrosion control in Flint but, no, we were not  
19 deterred. We went back because we started thinking about what  
20 could have gone wrong, that our hypothesis, and the only thing  
21 we could think of was that maybe Legionella was a problem in  
22 bigger buildings and not in single, family homes.

23 Q Let me stop you there. We've heard a lot about Legionella as  
24 far as its ubiquity in the water environment. What has your

1 research told you about where pathogenic Legionella normally  
2 grows and proliferates?

3 A Well it's not just my research.

4 Q Okay.

5 A There's a widespread consensus that very, very (sic) small  
6 amounts of Legionella are coming from the water distribution  
7 system at some point in its history. It might have been twenty  
8 years ago, might have been fifteen years ago, it might be  
9 today and that when those bacteria get inside an environment  
10 where there's no chlorine and the water is warmer,  
11 specifically building plumbing systems and has other factors  
12 that we haven't yet shown, that they will grow. They will grow  
13 quickly. But generally speaking the levels of Legionella that  
14 are present in the water that goes into the buildings are  
15 very, very low and then the question is where do they grow?  
16 Right now the conventional wisdom is that most of the problems  
17 occur in big buildings. So much so that there are no laws  
18 controlling Legionella in small homes for example. There's no  
19 strategies to even control that. But since 2001 there's been  
20 guidance to hospitals for example through joint commission  
21 directive that they should have defenses against Legionella  
22 because it's known that Legionella proliferate in healthcare  
23 facilities, hospitals and because that's where you have people  
24 likely to get sick. That's where virtually all the attention

1 has been directed. The only standards we have are for large  
2 buildings like hospitals.

3 Q So did you come back and test some large buildings in Flint?

4 A We did.

5 Q When was that?

6 A That was just before the switch back to Detroit water.

7 Q Mid-October of 2015?

8 A That's right.

9 Q Which large buildings did you sample when your team came back?

10 A We sampled early hospital, we sampled McLaren Hospital. We  
11 sampled other large buildings we could get access to.

12 Q And what were your findings regarding the presence of  
13 pathogenic Legionella in the large buildings?

14 A The Legionella were very high.

15 Q In all of the large buildings or in any specific?

16 A In enough of them, yeah, the hospitals had very high levels of  
17 Legionella.

18 Q When did those results become final?

19 A Well they, the initial results that convinced us there was a  
20 problem came available about November 2015 I think, later  
21 October. Probably was November, December 2015.

22 Q Took a little while to analyze those?

23 A Oh, yeah, we worked around the clock but it still ticks time  
24 to do these analyses and do them right.

1 Q Were, did your team immediately share the results of that  
2 testing event on your website?

3 A No.

4 Q Who did your share those results with?

5 A Genesee County Health Department.

6 Q Now just talking about your website a little bit. Have you  
7 found that your website has been a good way to interface with  
8 the citizens of Flint?

9 A To some extent. You know, it's where we publish our scientific  
10 findings. We try to make them available, you know, in a lay  
11 person level, yes.

12 Q Have you interfaced with the citizens of Flint in any other  
13 online way?

14 A Not really. We sometimes get forwarded Facebook messages by  
15 email asking us to respond. I've answered, try to answer every  
16 question posed to me by citizens of Flint of which there are  
17 many.

18 Q Okay.

19 A So literally hundreds of phone calls, dozens of emails I would  
20 assume, yeah, so we try to answer all of their questions to  
21 the best of our ability because we view them as our primary  
22 clients here, yeah.

23 Q Now you mentioned that Legionella is historically been a  
24 problem in premises plumbing.



1 A Yes.

2 Q So did you read the testimony of Shawn McElmurry in  
3 preparation for your testimony today?

4 A Most of it, yes.

5 Q In it he posited --

6 MR. FLOOD: -- Well, Judge, if I may. There some  
7 specific spot? Page that you have?

8 MS. COBB: Well let me ask you this.

9 BY MS. COBB:

10 A I will just ask it to you in more general terms since I'm not  
11 going to be referring exactly to the transcript but it has  
12 been posited that there was a plume of Legionella moving  
13 through the water distribution system in Flint. Has your  
14 research supported that theory?

15 A No. Contradicts that theory.

16 Q So you didn't find evidence of that specifically to Flint?

17 A In fact we proved that was not occurring in August 2015.

18 Q How did you prove that wasn't correct?

19 A Because we measured water samples of the distribution system  
20 and we found undetectable levels of Legionella. If there was a  
21 plume you would have found it in the sampling sites.

22 Q Would you just sort of generally speaking would you expect  
23 Legionella to move through the water system in a plume?

24 A Never.

1 Q How, and why is that?

2 A Because that's just not what happens. Anyone who has studied  
3 this problem for more than three months know that you're  
4 getting trace levels, if that, in Legionella in the  
5 distribution system. It grows in the building plumbing only  
6 when conditions are suitable. There's never been a case I'm  
7 aware of where there's been high levels of Legionella in the  
8 main water distribution system of a city. It's just trace  
9 levels is what you find.

10 Q So if it was positive that there was a plume of Legionella  
11 moving through the system that overcame a hospital  
12 disinfection system would you disagree or agree with that  
13 statement?

14 A I disagree. It's absurd.

15 Q It's absurd?

16 A Yes.

17 Q Briefly I want to talk about your communications of these  
18 testing results with the Genesee County health department.

19 A Yes.

20 Q Who were you communicating with at the Genesee County Health  
21 Department?

22 A Suzanne Cupal and James Henry.

23 Q Were they, well, did you alert any government officials that  
24 you were coming to Flint in August and October of 2015?a

1 Q No.

2 Q How did they become aware that you had been here?

3 A It was only after we returned, so we didn't want it to be  
4 known we were coming just on the off chance someone would  
5 change the operation of the system in a way that would impact  
6 our results so after we got back I had given samples to  
7 Genesee County Health Department. I let them do our E.Coli  
8 test, Coliform test because they do have, so I paid for that  
9 cash, and we were waiting for the results from them.

10 MS. COBB: May I please for the admission of those  
11 testing results, VVV?

12 MR. FLOOD: I have no objections, Judge.

13 THE COURT: Okay, DEX#V as in Victor, VVV, is  
14 admitted.

15 (at 12:23 p.m., DEX#VVV is admitted)

16 BY MS. COBB:

17 Q I'm approaching you, Doctor Edwards, with what I've marked as  
18 DEX#IIII, quadruple I. Do you recognize that?

19 A Yes, I do.

20 Q What is that?

21 A It's just an email exchange between myself and Suzanne Cupal  
22 at the Genesee County Health Department. We're starting a  
23 conversation about bacteria.

24 Q What is the month and year of these communications?

1 A September 2015.

2 Q Would this be the first time you were in touch with Ms. Cupal  
3 from the health department via email about your testing?

4 A There might have been prior communications because we were  
5 awaiting the results of the E.coli test so generally they're  
6 communicated to us there were no E.coli so that, we had that  
7 exchange and I said we were using their services. We double-  
8 checked their results and it seemed like all of their analyses  
9 were correct so we had a conversation about that but this was  
10 the first time it was done immediately.

11 MS. COBB: May I please for the admission of DEX#III,  
12 four (sic) I's.

13 THE COURT: Judge, as it relates to the hearsay I  
14 don't have an objection to this.

15 THE COURT: Okay, Defendant's Exhibit quadruple I is  
16 admitted.

17 (at 12:24 p.m., DEX#IIII is admitted)

18 BY MS. COBB:

19 Q Now you mentioned that you did alert the Genesee County Health  
20 Department to your findings about the results of the both the  
21 August and the October sampling event?

22 A Yes.

23 Q Now the October sampling event where you had the high  
24 incidence of Legionella in the large buildings, you said you

1 did not post those on your website?

2 A No.

3 Q Why not?

4 A Because discovering high levels of Legionella in a large  
5 building is not necessarily surprising and so we thought we  
6 needed to work through proper channels on this and at that  
7 time we weren't aware of Legionella outbreak if you will. I  
8 don't want --

9 MR. FLOOD: Sorry. I couldn't hear that last part.

10 THE WITNESS: At the time we were not aware of a  
11 Legionella outbreak so I read just Mr. Del Toral's brief  
12 mention in his memo. That was all we knew of so, you know, we  
13 were trying to work through the proper channels because you  
14 got to realize there's no laws about Legionella control in a  
15 potable water system unlike lead. Lead we could point to and  
16 say, we have a federal law. The federal law is being broken,  
17 lead seems higher than it should be. Flint, we have a problem.  
18 We announced that September 15<sup>th</sup> and late August on our  
19 website. Legionella, because we're still developing our  
20 strategies, we're still developing our knowledge we felt  
21 compelled to go to Genesee County Health Department to learn  
22 what they knew.

23 Q Had, did you share that data with them and did they share data  
24 with you?

1 A Yes.

2 Q What did they share with you? They being, well, I guess  
3 specifically Ms. Cupal?

4 A I can't remember --

5 MR. FLOOD: I object to the hearsay, Judge.

6 MS. COBB: Alright, well let me put it a different  
7 way.

8 BY MS. COBB:

9 Q I am, Doctor Edwards, this is an Exhibit I've marked as  
10 quadruple J. Do you recognize that?

11 A Yes, I do.

12 Q What is that?

13 A It's my communication to James Henry and Suzanne Cupal about  
14 our hard Legionella results.

15 Q And when is that dated?

16 A December 11, 2015.

17 Q And can you read, well, actually --

18 MS. COBB: Do you have any objection?

19 MR. FLOOD: No, I don't have an objection to this,  
20 Judge.

21 THE COURT: DEX quadruple J is admitted.

22 (at 12:27 p.m., DEX#JJJJ is admitted)

23 BY MS. COBB:

24 Q Can you read for us the sort of the second paragraph of your,

1 your (sic) communication there with Ms. Cupal on December 11<sup>th</sup>?  
2 A Is there any documents you can give me on the high incidence  
3 of Legionnaire's Disease in Flint and Genesee after the switch  
4 in water sources? I know there are some. If so, we'd like to  
5 reference that when we write up our data next year. We'd be  
6 happy to present our results to you as well if you're  
7 interested.  
8 Q Did she respond to your email?  
9 A Yes, she did.  
10 Q Do you recall what, what (sic) she sent you?  
11 A Several attachments to an email.  
12 Q Were they, did they look to be, were they official reports of  
13 the Legionella outbreaks?  
14 A They looked to be official reports from somebody, yes.  
15 Q I'm going to approach you with what was, has been admitted as  
16 PEX#14. What is that?  
17 A Legionellosis outbreak Genesee County June 2014 to March 2015.  
18 It's a packet of papers with statistics about Legionella.  
19 Q Does that look like what Ms. Cupal sent you in December of  
20 2015?  
21 A Yes, it does.  
22 Q Do you remember or can you estimate when in relationship to  
23 Ms. Cupal sharing these reports to you that there was a press  
24 release by the State of Michigan about the Legionella

1 outbreaks?

2 A It was early January 2016.

3 Q Were you involved with anyone at MDHHS prior to that press  
4 release being made?

5 A Somewhat with Doctor Wells, yes.

6 Q And I'm going to hand you, Doctor Edwards, what has been  
7 admitted as PEX#22, and ask you if you recognize that?

8 A Yes, I do.

9 Q What is that?

10 A It's a press release about increased cases of Legionnaire's  
11 Disease investigated in Genesee County.

12 Q Was that something that was sent specifically to you or did  
13 you read it through the media?

14 A I think I was alerted to the fact it was be, then released and  
15 I was directed to a website to see it, yeah.

16 Q Who alerted you to that?

17 A I think Eden Wells did so by phone or by email.

18 Q Now reading through this press release does it make any  
19 specific recommendations to Flint residents about anything  
20 that they should be doing or shouldn't be doing relative to  
21 the Legionella outbreaks?

22 A Well not for the typical resident. Obviously, if you have a  
23 hot tub or decorative fountain, I don't know, you know, you  
24 could look online to find information about that but nothing



1 specific.

2 Q Now was there anything about the content of this press release  
3 that you took issue with or found to be inadequate?

4 A No. I didn't.

5 Q Was there anything about the timing of this press release that  
6 you take issue with or find to be inadequate?

7 A No.

8 Q Now did your work in Flint continue throughout 2016?

9 A Yes, it did.

10 Q Can you describe that?

11 A 2016?

12 Q Yes.

13 A So well we tried to engage other faculty in Michigan to work  
14 on behalf of Flint residents. We tried our best to get them  
15 the financial support they needed to give them data that would  
16 help them with their work. We worked with the Flint crew  
17 (sic). We answered all questions posed to us by Flint  
18 residents, the media, anyone had asked. We continued to do  
19 some sampling.

20 Q How many sampling events do you believe or can you recall  
21 doing in Flint in 2016?

22 A I can't remember. There were a lot. A lot of it was just  
23 responding to individual consumer concerns but we did do a  
24 sampling event specifically aimed at a follow-up study of the

1 Legionella.

2 Q I, and you published those results?

3 A Yes, we did.

4 Q I'm going to approach you with what I've marked as DEX  
5 quadruple K. Do you recognize this?

6 A Yes, I do.

7 Q What is that?

8 A It's from our publication from mid-2016, that summarized the  
9 results of our sampling in 2015, 2016 in Flint.

10 Q What were you finding with your Legionella sampling in 2016?

11 A Just like we had hypothesized when the switch back to Detroit  
12 occurred, the conditions that allowed the Legionella to grow  
13 would disappear. I expressed this hypothesis publically in  
14 January of 2016 that the conditions that caused the outbreak  
15 were gone and so this confirmed that hypothesis that the  
16 switchback to Detroit would cause the Legionella levels in  
17 these large buildings to start decreasing again.

18 Q Was there anything else that you became aware of that went on  
19 around the time of the switchback to the Detroit water that  
20 would minimize the risk going forward of a Legionella  
21 outbreak.

22 MR. FLOOD: Objection to the hearsay unless there's  
23 something specific in that he has personal knowledge.

24 BY MS. COBB:

1 Q Do you have personal knowledge in your analysis of what  
2 happened in Flint of any other remediation that was taking  
3 place in Flint that would have prevented future outbreaks?

4 A Yes. The large building owners were being reminded of their  
5 responsibility to try to control these problems in particular  
6 the hospitals. That's, this was a unconventional outbreak and  
7 it was perhaps the first outbreak that was tied to a lack of  
8 corrosion control but it was conventional in that the problems  
9 seemed mostly confined to large building healthcare facilities  
10 and hospitals.

11 Q And you learned in your analysis of what went on here that  
12 those large buildings including the hospitals were taking  
13 steps to remediate?

14 A That was what we were told.

15 Q Now you did a sampling event, oh --

16 MS. COBB: May I move for the admission of KKKK, four  
17 K's?

18 MR. FLOOD: I don't have an objection.

19 THE COURT: DEX quadruple K is admitted.

20 (at 12:36 p.m., DEX#KKKK is admitted)

21 BY MS. COBB:

22 Q Now is this a good overview of the testing, the Legionella  
23 testing you did in 2016 relative, they are in Flint?

24 A 2015, 2016, yeah. There's a lot more we did but this is what

1 we wrote up for the data.

2 Q And what were the general trends regarding presence of  
3 pathogenic Legionella in the homes and small businesses?

4 A The homes, the small buildings, the Legionella was still in.

5 Q Okay.

6 MR. FLOOD: I'm sorry, I didn't catch that last one.

7 THE WITNESS: The Legionella levels pneumophila  
8 levels in the small buildings and homes were still low. They  
9 were undetectable. You normally expect to find roughly twenty-  
10 five percent of your water samples in homes to be, to have DNA  
11 for example, of Legionella, so the levels here lower than what  
12 we'd encountered and what others had encountered around the  
13 country.

14 BY MS. COBB:

15 Q And that was pre the switchback and post the switchback as it  
16 relates to the homes and small buildings?

17 A Yes.

18 Q What about the larger buildings seen on this chart kind of up  
19 at the top, the top right.

20 A I don't have a chart here so I have a KKKK, there's no chart.

21 Q Let me see what you have, Doctor Edwards. I'm sorry.

22 A You mean a table or?

23 Q Oh, yeah, a table.

24 A Oh, yeah.

1 Q It's a table, not a chart.

2 A Okay, so, yeah in general the levels had dropped.

3 Q At the hospitals?

4 A Yes.

5 Q Now did your team also do a study on hot water heaters in  
6 2016?

7 A Yes, we did.

8 Q Tell us about that.

9 A That was funded by Michigan Department of Environmental  
10 Quality. The hypothesis was there might be still problems with  
11 Legionella in the water heaters even though we hadn't found  
12 them in our, in homes or in our initial rounds of sampling.  
13 The idea was maybe they were stuck in the sediment at the  
14 bottom of the water heater. Moreover, the study was designed  
15 to look at whether a good, thorough cleaning of the water  
16 heaters, which are notoriously dirty nationwide, would have  
17 any benefit to residents of Flint.

18 Q What did you find in your water heater study?

19 A Well just like other water heaters around the country, the  
20 water heaters in Flint were very "dirty". The accumulated a  
21 lot of rust. Some cases they were very clean. Amongst the  
22 cleanest we'd seen. Part of that is just luck in where your  
23 house is located in reference to an iron main but in general  
24 we did find some of the deadlier form of Legionella, Serogroup

1 1, in two houses of thirty-six we looked at. We did very, very  
2 (sic) intensive studies and so we followed-up with those homes  
3 to the extent we could but in general it confirmed that the  
4 levels of Legionella were still relatively low in summer of  
5 2016.

6 Q Okay, now did your, well, were you continuing to keep the  
7 public updated on the developments with your water testing  
8 throughout 2016?

9 A Yes.

10 Q And by the middle of 2016, so let's say call it May or June of  
11 2016, what was your opinion about the status of the water  
12 system in Flint based on the studies you were doing?

13 A The water quality dramatically improved from almost all  
14 perspectives that we can measure scientifically. That includes  
15 chlorine levels. EPA had started programs to try to increase  
16 the flow of water through the Flint system. I think it was May  
17 of 2016 our federal and state task force working on this had a  
18 Flush for Flint program, for example, to try to encourage  
19 people to use more waters. More -

20 Q -- Because using more water could kind of help the system get  
21 back to normal?

22 A Right. Especially in reference to lead levels, so, because  
23 residents in our opinion were not using enough water for the  
24 corrosion control to take effect. Enhanced corrosion control,

1 probably the best corrosion control in the country was  
2 implemented by EPA. Higher chlorine levels were made sure. EPA  
3 implemented an enhanced monitoring so from every perspective  
4 that we measured during our visit in August 2015 by summer of  
5 2016 things were dramatically better in terms of the water  
6 quality.

7 Q And what were you and your team advising Flint residents to do  
8 at that time relative to water in their homes?

9 A Well mainly to follow the federal and state advice which was  
10 to assume the water had high lead, which it still did by all  
11 accounts at that time, to use either bottled water or filters  
12 to protect themselves against the lead in water but other than  
13 that based on studies that, you know, our work plus work CDC  
14 did the water looked to be as safe as other cities for bathing  
15 or showering, for example. So we were giving explicit advice  
16 in terms of confirming what the emergency response team, the  
17 CDC, EPA, FEMA, were telling people because we felt it was our  
18 role if they were getting the wrong information to speak out  
19 and if they were getting the right information to call them  
20 out in a good way for that, too.

21 Q So I'm just, so this isn't lost in the record, that the  
22 emergency response by FEMA and CDC and EPA, what did, and I  
23 guess the State of Michigan, what did that entail? What was  
24 provided to residents to help with the water issue?

1 A Well there was bottle water was made available. I think that  
2 started in October, November of the year before but the  
3 emergency response obviously the declaration of the federal  
4 emergency ramped that up. Filters were provided. We actually  
5 started the whole filter drive on our website. One of my  
6 graduate students started the Go Fund Me for filters and when  
7 United Way heard about it, they started a Go Fund Me and the  
8 whole filter campaign and pretty, it didn't take long before  
9 all residents were being offered a filter, so, yeah, that's  
10 the type of information.

11 Q Did you think that the filters that were being disseminated  
12 were helpful to the situation?

13 A Yes. We felt it was an appropriate humanitarian gesture. I  
14 mean realize, again, there's no laws that require the  
15 distribution of bottled water and filters. In a prior  
16 emergency in Washington, D.C., the local government decided to  
17 distribute filters to only a few residents.

18 MR. FLOOD: Judge, just rise to object as it relates  
19 to the laws and what they require and what they don't require.  
20 as it relates to the Safe Drinking Water Act. It's one thing  
21 as it relates to the health code it's a totally different  
22 thing. So I would ask that the last portion of his answer,  
23 what laws require for protecting humans health is different  
24 and outside Doctor Edwards' expertise.



1 THE COURT: He is qualified only as an expert in I  
2 guess, you know, broad engineering water.

3 MS. COBB: That's fine.

4 BY MS. COBB:

5 Q I guess my main question to you, Doctor Edwards, is did you  
6 think that the filters were benefitting the citizens of Flint?

7 A Yes.

8 Q I want to shift gears. I'd like to talk to you about being  
9 introduced to someone named Shawn McElmurry. Who is he?

10 A He's an Associate Professor at Wayne State University.

11 Q And how did you meet him?

12 A I was introduced to him electronically by Doctor Mona Hanna-  
13 Attisha.

14 Q Do you remember when that was?

15 A That was early September, early October 2015.

16 Q I'm showing you what I've marked as DEX quadruple M. What is  
17 that?

18 A It's the email from Doctor Mona Hanna-Attisha introducing Mr.  
19 McElmurry or telling me he might call me. My initial exchange  
20 with Mona he's forwarding, she's also forwarding her exchange  
21 with Shawn.

22 Q And I don't think we heard much about Doctor Mona in these  
23 proceedings. Just for purposes of the record and for Judge  
24 Goggins, who is that and what was her role relative to all

1 this?

2 A She was a young pediatrician I met in mid-September 2015  
3 within my work to look at the blood lead of the children. She  
4 took the leadership role in that.

5 Q And she was somebody that you were working on Flint issues  
6 with?

7 A Yes.

8 Q So looks like according to this email she forwarded a long  
9 email from Shawn McElmurry?

10 A Yes.

11 MS. COBB: I'd like to move for the admission of this  
12 Exhibit. I know that the objection is going to be hearsay.

13 MR. FLOOD: Judge, I'm not going to object. This is  
14 showing an innocuous introductions and I would imagine it's  
15 just to establish a foundation that they actually had met  
16 electronically. There's no substance.

17 MS. COBB: Thank you.

18 THE COURT: I'm sorry, is this Exhibit?

19 MS. COBB: Quadruple M.

20 THE COURT: Quadruple M is admitted.

21 (at 12:46 p.m., DEX#MMMM is admitted)

22 BY MS. COBB:

23 Q What did in this email what did this McElmurry person tell you  
24 about himself and about his credentials?

1 A He said that he specialized in water quality and contaminant  
2 exposure. He's done some work on lead and drinking water  
3 contamination. He said he's done some work on Flint. That was  
4 in his email to Doctor Mona and then to me essentially  
5 repeated that and has worked in Flint in the past.

6 Q Now at this time did you have a lot of researchers calling you  
7 wanting to collaborate with you on Flint issues?

8 A Yes.

9 Q Was there, were you talking to all of them?

10 A Short, for a brief period of time, yep (sic).

11 Q Was there anything about what was contained in this email that  
12 made you want to follow-up with this person in more detail?

13 A Work in Flint.

14 Q Why is that important?

15 A Because when you're in an emergency situation, especially like  
16 the Flint water crisis, the thing you want most is local  
17 knowledge. You want folks who have been on the ground, working  
18 there for years if possible, who have the local network, they  
19 know people. They have knowledge about the water system which  
20 was hard to get. All of this information was priceless because  
21 you're going to be making decisions very soon that affect how  
22 quickly the city can recover from this what some have called a  
23 disaster and you really desperately need that local knowledge  
24 and expertise so even though I never heard of Mr. McElmurry

1 before this, and you think I would have because I've been very  
2 active in the field. I dedicated my life to drinking water  
3 issues. The thing that stood out was his experience in Flint.

4 Q So did you agree to take a call with him?

5 A Yes, I did.

6 Q I'm showing you what I marked as Exhibit quadruple N, as in  
7 Nancy. What is this, Doctor Edwards?

8 A These are my notes from that conversation.

9 Q When did you have that conversation?

10 A 12<sup>th</sup>, October 2015.

11 Q What are your notes referring that you discussed in that  
12 conversation?

13 MR. FLOOD: Judge, I would object to hearsay.

14 MS. COBB: Your Honor --

15 MR. FLOOD: Of the notes. I think he's already  
16 testified to what he did, right, but anything as it relates to  
17 Doctor McElmurry and these notes would all be hearsay.

18 MS. COBB: Your Honor, I'm not offering them for the  
19 truth. I'm offering them for what Doctor Edwards did based on  
20 the representations made by him in that conversation to, by  
21 Mr., Doctor McElmurry.

22 MR. FLOOD: Then, Judge, just ask what he did. Don't,  
23 to get into the content it's not relevant. Based on your  
24 conversation with Doctor McElmurry, what was the next step?

1 MS. COBB: Well I do think that the content is  
2 relevant to show why he did what he did. That's the whole  
3 reason for the hearsay exception in these circumstances.

4 MR. FLOOD: It's not an exception to hearsay, Judge.

5 MS. COBB: Or not hearsay in these circumstances.

6 THE COURT: Can I see both of you just, just (sic) a  
7 quick second?

8 (from 12:50 p.m. to 12:54 p.m., bench conference,  
9 off the record)

10 THE COURT: Right now, DEX#NNNN is being held. I'm  
11 not going to admit it.

12 MR. FLOOD: Thank you.

13 BY MS. COBB:

14 Q Alright, so we're not going to be allowed to talk about what  
15 Doctor McElmurry told you in your conversation on October 12<sup>th</sup>  
16 but I'd like to talk about some of the things that you did  
17 based on your conversation with him on that day. So in the  
18 email which is DEX#MMMM, Doctor McElmurry, well did you come  
19 to find out he was a Doctor? He has a PhD?

20 A Yes. It's listed.

21 Q Did you come to learn how long he had been working in Flint?

22 A Since 2010 until, and he said five years, well it's stated  
23 five years other places.

24 Q Now did he, was he also attempting to secure funds at that

1 time?

2 MR. FLOOD: Judge, again, that's I think we're  
3 getting back into that hearsay issue. I think if there is what  
4 Doctor Edwards here did based on those conversations I think  
5 is relevant.

6 THE COURT: Yeah, any, I think we're still back at  
7 the same thing. Any conversations (sic) --

8 BY MS. COBB:

9 Q Did you end up writing a recommendation for a grant for Doctor  
10 McElmurry based on the conversations that you had with him on  
11 October 12<sup>th</sup>?

12 A And his emails, yes.

13 Q What kind of grant was it?

14 A It was a National Institutes of Health Emergency Response  
15 Grant.

16 Q Did it have anything to do with, did his work relative to that  
17 grant have anything to do with Legionella?

18 A Not as it was presented to me in our emails.

19 Q What did his work pursuant to that grant deal with?

20 A Disinfection byproducts in lead.

21 Q I'm going to show you what has been admitted as Prosecution  
22 Exhibit #47. What is that?

23 A This is Mr. McElmurry's CV.

24 Q Down in the research funding section there is an entry for

1 2016 to 2018 a National Institute Environmental Health and  
2 Sciences grant. Do you see that?

3 A Yes.

4 Q Is that the grant for which you wrote down a recommendation  
5 based on your conversations?

6 A Yes.

7 Q What was the dollar amount of that grant?

8 A \$422,000.

9 Q And right above that there is another grant issued to Doctor  
10 McElmurry for related to point of use filters deployed in  
11 Flint?

12 A Yes.

13 Q What was the amount of that grant?

14 A \$50,000.

15 Q Were there any other grants that you helped Doctor McElmurry  
16 secure?

17 A There were two other grants, National Science Foundation  
18 grants that were associated with us, all looking at filters  
19 that I helped him get those grants.

20 Q So a total of three grants related to filters that you helped  
21 Doctor McElmurry secure?

22 A Yes.

23 Q Did you share with him your hypothesis and your grant proposal  
24 that has already been admitted into evidence on the

1 relationship between water corrosion pathogens?

2 A Yes.

3 Q Was this something according to his CV here that he had  
4 previously had any experience with?

5 A No.

6 Q Did Doctor McElmurry during this time period in October of  
7 2015 did he attempt to do any testing in Flint, do you know?

8 A He asked me for protocols so he could get approval to do  
9 testing.

10 MR. FLOOD: Object again to the hearsay of what  
11 Doctor McElmurry said. Unless he has personal knowledge of  
12 watching Doctor McElmurry going in to testing things I'd  
13 object to the hearsay.

14 BY MS. COBB:

15 Q I'm going to show you DEX#R and ask you if you recognize this?

16 A Yes, I do.

17 Q What is it?

18 A It's emails between me and Doctor McElmurry in October 2015.

19 Q Without telling us exactly what Doctor McElmurry is saying in  
20 these emails, what is he wanting from you?

21 A He wants information on where to sample in Flint. He wanted  
22 protocols for how to get approval to do the sampling. He wants  
23 to know how we can work on the NIH grant, what I could do for  
24 him basically on that grant.



1 MR. FLOOD: Judge, instead of the interpretation here  
2 of what Doctor McElmurry has stated first of all, it's  
3 statement by Doctor McElmurry. It's hearsay. He wasn't  
4 provided this email prior to, to present to him to say did you  
5 give this to Doctor Edwards. What did you mean by this when  
6 you did which would have been a proper protocol for if there  
7 was some sort of impeachment. This is collateral (sic). So my  
8 objection for this is hearsay and improper impeachment with  
9 something that wasn't presented to the witness at the time.  
10 All that being said, Judge, if counsel is just trying to get  
11 this portion in, the top portion of what the email is all  
12 about of what he did, I don't have an objection for those  
13 purposes of the whole content.

14 MS. COBB: I'm not trying to impeach anybody. I'm  
15 trying to, I'm continuing to try and show you what Doctor  
16 Edwards did based on the representations made to him by Doctor  
17 McElmurry. Do you have an objection to this Exhibit?

18 THE COURT: Yeah, I wasn't really sure what.

19 MR. FLOOD: I thought we already agreed that we're  
20 not getting into the content of what Doctor McElmurry said.  
21 What Doctor Edwards did I think is exactly what we agree to.  
22 What basis and the like is different but if he gave aid,  
23 assisted, helped, wanted to solve problems, was here for the  
24 people, was a civil rights activist, was trying to get to the

1       portion of saving lives, I'm good with all that. That's what  
2       he did based on representations given by Doctor McElmurry. To  
3       get into the content of what Doctor McElmurry says is all  
4       hearsay stuff.

5               THE COURT: We're kind of back to that same issue.

6               MS. COBB: Well we're back at the same place, place  
7       that we were and I assume you're going to sustain the  
8       objection?

9               THE COURT: Well, it, it, it (sic) sounds to me right  
10       now it sounds like the same, the same (sic) idea so, objection  
11       is sustained.

12              MS. COBB: That's fine, your Honor.

13              MS. COBB: Mr. Chamberlain pointed out that we should  
14       probably have the ruling on the record because although we're  
15       involved in this conversation I guess it's not on the record  
16       but the Court's ruling is that the statements by Doctor  
17       McElmurry to Doctor Edwards are hearsay.

18              THE COURT: You know, I seem to get issue. Why, why  
19       (sic) don't both of you approach for just a quick second.

20              (from 1:03 p.m. to 1:13 p.m., Court in recess)

21 BY MS. COBB:

22 Q       Let's just quickly finish up with --

23              MS. COBB: Are we back on the record?

24              THE COURT: I think we got everybody in here.

1 MR. FLOOD: We're good.

2 THE COURT: Yeah, we're back on the record.

3 BY MS. COBB:

4 Q Well just to finish up with this issue about meeting Doctor  
5 McElmurry and his presentation to you of his connections in  
6 Flint. Going back to looking at DEX#MMMM, that has been  
7 admitted --

8 A Is that the vitae?

9 Q No, that's the introductory email. Down at the bottom Doctor  
10 McElmurry told you in this email that as a result of his past  
11 work in Flint he has a working hydraulic model of the Flint  
12 drinking water system.

13 A Yes.

14 Q Did you ever see that or were you ever provided that?

15 A Not the hydraulic model. I saw a proposal, pre-proposal he  
16 wrote to NIH where the hydraulic model was also mentioned. He  
17 gave me a one page pre-proposal.

18 Q Okay, and I guess to just sort of cut to the chase, was there  
19 ever a time that you had a reason to look into the accuracy of  
20 what Doctor McElmurry told you when he introduced himself to  
21 you regarding his connections in Flint?

22 MR. FLOOD: Well, Judge, again, that's going to all  
23 revolve around hearsay.

24 MS. COBB: Well I don't think it all does.

1 MR. FLOOD: Well, it's a backdoor way of trying to  
2 get in hearsay. I'm not saying counsel is doing that  
3 deliberately but that's what it does so.

4 THE COURT: I, you know, just that broad statement.  
5 If you want to break it into parts we will deal with each.

6 BY MS. COBB:

7 Q Well, did you get a copy of the hydraulic model?

8 A No.

9 Q Did you see where he later in the proposal that you mention,  
10 proposed that he build a hydraulic model of Flint?

11 A Yes.

12 Q Did, have you looked at his vitae regarding whether it reports  
13 any prior involvement in Flint?

14 A No. I mean, I did look. Yeah, there's no mention in his vitae  
15 of any of the years of work that he did in Flint.

16 Q Again, was his years of work in Flint the reason you talked to  
17 him in the first place?

18 A Yes.

19 Q Did he eventually approach you in 2015 or, excuse me, early  
20 part of 2016 to let you know about this FACHEP group that was  
21 being formed?

22 A Yes.

23 Q And as a researcher did you work with him and the FACHEP group  
24 through 2016?

1 A Well I was never part of FACHEP but, you know, I tried to help  
2 them whenever I was asked. In my letter of support they were  
3 supposedly going to use our website for example. They never  
4 did that but I did work with him. There was one press  
5 conference we had where he talked about one of his possible  
6 areas of expertise which is disinfection byproducts so he co-  
7 presented that with myself, David Rackow (sic), U Mass (sic).  
8 I think that was May 2016.

9 Q Now I'm going to show you what was admitted into evidence as  
10 DEX#W and ask if you, if you (sic) recognize it?

11 A Yes.

12 Q What is that?

13 A It's a Phase 1 project report for FACHEP.

14 Q Specifically I'm going to refer you to page 9 of that report.

15 A Yes.

16 Q Now under the analysis of Environmental Samples section what  
17 was the date of this report, Doctor Edwards?

18 A June 2016.

19 Q And under the analysis of Environmental Samples section, could  
20 you read the bottom part of that section starting with the  
21 words during the January 2016?

22 A During the January 2016 sampling event, one liter hot water  
23 samples were collected from showers and biofilm samples were  
24 collected from shower arms and other locations in thirty-one

1 homes in Flint. All samples were collected and analyzed  
2 according to standard CDC protocols. All cultures were  
3 negative. PCR results for all specimens were negative for  
4 Legionella using two different Legionella specific probes.

5 Q So is it a fair summary to say that FACHEP group was, had  
6 tested for Legionella in January of 2016 according to this  
7 report?

8 A Yes.

9 Q And, did they purportedly find any Legionella in Flint homes?

10 A No.

11 Q Now was this consistent with your findings from earlier on  
12 that there was no pathogenic Legionella in the Flint homes?

13 A Well it was consistent that we found no pathogenic Legionella  
14 in Flint homes. Now realize the sample sizes are relatively  
15 small so we're not excluding the possibility that there were,  
16 you know, Legionella pneumophila. The key question is whether  
17 the levels that were there were lower or higher than other  
18 cities so having two sets of data independently confirming  
19 that there were no detectable Legionella, later we did find a  
20 few homes that have it. But, again, the key thing is relative  
21 to other cities. The Legionella levels, pneumophila levels  
22 were very low.

23 Q Well does seeing this report put out by FACHEP in June of 2016  
24 does that bolster your opinion on whether or not there was

1 Legionella across the system in Flint?

2 A Yeah, it bolsters my opinion the levels that were occurring  
3 Flint homes were not abnormally high. To the contrary, if  
4 anything, they were abnormally low.

5 Q I'm going to show you what was admitted as PEX#48 and ask if  
6 you recognize that?

7 A Yes.

8 Q What is that?

9 A FACHEP Phase 2 project description.

10 Q What, have you read through that in the past?

11 A I have now in the last few weeks.

12 Q What was one of the primary focuses of the FACHEP Phase 2  
13 project?

14 A To look at Legionella outbreaks in Genesee County and Flint.

15 Q Where did they want to sample?

16 A There was a plan to sample large buildings, healthcare  
17 facilities and homes.

18 Q Did a substantial of the project focus on home sampling?

19 A The vast, vast (sic) majority of the work was focused on  
20 sampling the homes.

21 Q Now given that you had repeatedly found no pathogenic  
22 Legionella in the homes and this group itself had found no  
23 pathogenic Legionella in the homes, do you have an opinion  
24 about the scientific value of this home sampling portion of

1 the project?

2 A Yes, I do.

3 Q What's that?

4 A I don't know why they were sampling so extensively where the  
5 Legionella were not. The focus should have been on tracking  
6 the Legionella in the larger building. That was perfectly  
7 clear from our paper in early 2015. It was perfectly clear  
8 based on their preliminary data.

9 Q Have you seen, have you seen (sic) any of the data produced by  
10 this group beyond this project description?

11 A I've seen, yes, their presentations at conferences. There was  
12 a paper published recently. They never ever once mentioned  
13 that data from early 2016 in which they found low levels of  
14 Legionella in the homes.

15 Q Can you explain what you are saying a little bit more? They  
16 were not sharing that data?

17 A Well I never saw it mentioned until I read Doctor McElmurry's  
18 courtroom testimony. These documents were not on their website  
19 nor were they mentioned in any of the presentations that I  
20 attended.

21 Q Do you recall speaking via Skype at a FWIC meeting on August  
22 12th of 2016?

23 A Yes, I do.

24 Q Do you recall what the subject of your presentation was?



1 A It was summarizing a press conference we gave from Virginia  
2 Tech. I think it was a day or so before.

3 Q And what kind of information were you relaying to the FWIC  
4 group at that time?

5 A That the Legionella levels that we were finding in our summer  
6 sampling looked low. Things looked relatively good in  
7 improving in Flint. There was still a long way to go but --

8 Q I am going to show you what has previously been admitted as  
9 PEX#52. I'd ask you to take a second to look through this.  
10 This is an email sent by Doctor McElmurry to members of the  
11 FACHEP team on August 15, 2016 regarding that meeting.

12 A Yes.

13 Q Have you seen this before?

14 A In the last couple weeks or so, yes.

15 Q I would ask you if you could, start reading in the first  
16 paragraph about middle of the way down where it says, I was  
17 directed by Nick.

18 A I was directed by Nick to explain all --

19 MR. FLOOD: Judge, I apologize. I'm sorry, Doctor.  
20 I'm not quite sure what she is wanting to impeach Doctor  
21 McElmurry with a collateral piece of evidence? Or with another  
22 witness. I'm not quite sure. I object to the foundation and  
23 form of the question. I'm not sure what's going on. Is it 608?  
24 Is it just reading it in the document for purpose to ask

1 questions? What exactly? So my objection is to improper  
2 impeachment.

3 MS. COBB: I'm not impeaching anyone, your Honor. I  
4 have, I'm asking him to read that and then I'm going to ask  
5 him his opinion.

6 MR. FLOOD: And, opinion based on statements that  
7 another person made as it relates to a conversation he had  
8 with the Governor and other people is speculation so --

9 MS. COBB: Well it's not, your Honor. I'm going to  
10 ask him his scientific opinion about some of the statements  
11 made by the parties in this conversation. This is in evidence  
12 and it is --

13 THE COURT: I'm not looking at the Exhibit but if  
14 you're asking for his opinion on some scientific data I'm not  
15 sure what's on that particular Exhibit any more. If it's, if  
16 it's (sic) just another person's statement how is that not  
17 hearsay even though it may be a scientific statement?

18 MS. COBB: Right. I'm not asking if he agrees with  
19 some of the scientific opinions stated in this email.

20 THE COURT: Mr. Flood?

21 MR. FLOOD: You know what, Judge, I, just to speed  
22 things up I'm going to move forward with this document as long  
23 as we get to go through the whole document, yeah, I have no  
24 problem if it's admitted.

1 THE COURT: Okay, okay, okay (sic). You may continue.

2 BY MS. COBB:

3 Q Can you read those couple of sentences there starting with I  
4 was directed?

5 A I was directed by Nick to explain all the samples I was  
6 collecting, particularly the filter sample, to Keith Creagh  
7 who looked very skeptical. He asked a lot of questions about  
8 why would we would collect filters, what did we expect to  
9 find, etcetera. Keith and Nick were both questioning  
10 scientific value of study. Nick said to me, that's the  
11 balance, the value of finding information and upsetting the  
12 public.

13 Q That was the only section I wanted you to read. Now without  
14 asking you to speculate on what Nick or anybody in this  
15 mentioned in here meant, do you also question the scientific  
16 value of the filter study that FACHEP was doing?

17 A Well, I supported their getting grants from the National  
18 Science Foundation to study the filters. They had three grants  
19 that had been in effect and just getting started at that time.  
20 So I obviously viewed there was value to doing the study but  
21 we hadn't seen any results from that study and so the general  
22 idea is what did you find with your National Science  
23 Foundation study that would cause you to spend additional  
24 funding and resources looking at this problem. You already

1 have a fund.

2 Q Then there's the statement, Nick said to me he has to balance  
3 the value of finding information and upsetting the public. Now  
4 do you agree when it comes to messaging to the public about  
5 issues related to water quality that you want to be careful  
6 not to upset the public?

7 MR. FLOOD: Judge, I would object. Doctor Edwards is  
8 renowned expert in water premise plumbing and pipes. I would  
9 object, however, his opinion on healthcare-related messaging  
10 for the statute laws for which we've already talked about.

11 MS. COBB: May I ask him a few follow-up questions?

12 THE COURT: You can. The objection, that, that (sic)  
13 particular one will be sustained.

14 BY MS. COBB:

15 Q Have you had experience even in Flint messaging to the public  
16 about water quality issues?

17 A Yes.

18 Q Have you had experience in other locations messaging to the  
19 public about water quality issues?

20 A Yes.

21 Q Is this something that you receive any specific training in?

22 A I have, you know, read books about this, I've given  
23 presentations on the subject about communicating science to  
24 the public, yes.

1 Q Have you ever testified as an expert about these types of  
2 issues?

3 A I did in relation to the lawsuit in Washington, D.C. relative  
4 to public communications about lead in drinking water.

5 Q Do you feel like you're qualified to give opinions about the  
6 value of messaging as it relates to water quality problems and  
7 the public?

8 A Yes.

9 MS. COBB: Your Honor, I request that he be able to  
10 answer the question.

11 MR. FLOOD: I, as it relates to lead, Judge, I don't  
12 have any issues. There's a totally different body of law that  
13 governs the messaging and I don't think he's been qualified as  
14 an expert in that area and I would humbly ask that that  
15 request be denied.

16 MS. COBB: I would make the request, your Honor.

17 THE COURT: This witness is, he's got, read, a lot of  
18 experience in, in (sic) scientific knowledge and how it  
19 applies to the public at large. It's still, he's not an expert  
20 in messaging to the public. That's a whole different thing.  
21 Just because he's testified on one narrow issue it doesn't  
22 make him an expert in that particular --

23 MS. COBB: Will you permit him to testify about the  
24 messaging here in Flint if he observed? Or that he was part

1 of?

2 THE COURT: I'm sorry, you mean testifying as far as  
3 what --

4 MS. COBB: -- As a fact witness about messaging  
5 issues here in Flint?

6 THE COURT: I'm not sure. What do you mean? Why don't  
7 I see --

8 MS. COBB: -- Why don't I just proceed. This is sort  
9 of --

10 THE COURT: -- It might be, I was going to say it's  
11 kind of awkward. Mr. Flood?

12 (from 1:33 p.m. to 1:36 p.m., bench conference, off  
13 the record, all parties present)

14 BY MS. COBB:

15 Q Doctor Edwards, can you tell us from your time working here in  
16 Flint to what degree residents were stressed and worried about  
17 what was happening in their community?

18 A From the very beginning to the present day.

19 Q They were what?

20 A Stressed and worried about what's been happening.

21 Q Can you tell us to what degree based on your interaction with  
22 the Flint community citizens of Flint were confused about who  
23 they should listen to and who they should trust about the  
24 water issues that were occurring here?

1 A I think they are rightly very confused about who to listen to.  
2 That's been the case from before the time we got involved  
3 through the present day.

4 Q And because of that did you see it as your personal  
5 responsibility to be careful about message issues you send to  
6 the public about water quality?

7 A Absolutely.

8 Q Before giving the public messages about your work and your  
9 research what did you want to make sure of before giving a  
10 public announcement about something that people should or  
11 shouldn't do?

12 A First, to make absolutely sure about the data that we  
13 collected, that we've done everything possible to make sure  
14 that that was accurate. Secondly, to communicate all results  
15 in context, which means you compare the current situation to  
16 that which we have encountered in other cities over our  
17 decades of research; and third, to try to communicate what  
18 could they do about it if we did find something. So we try to  
19 live up to that since the beginning on our website and all our  
20 public statements.

21 Q As it relates to Flint, has there been any that you've  
22 observed any negative, unintended consequence of careless  
23 messaging?

24 MR. FLOOD: That's where, Judge, I would object for

1 which we already spoke about because now it's going to require  
2 hearsay of what someone else said about someone else who down  
3 the line and we don't unfortunately have the witnesses here to  
4 talk about that and cross-examine; and two, we've already  
5 established this Doctor Edwards is dealing with plumbing and  
6 water distribution systems and corrosion control and, you  
7 know, how it affects the Safe Drinking Water Act.

8 THE COURT: Well the question just on the face was  
9 awful broadly general, mentioned messaging and takes a broad  
10 (sic) but the objection based on hearsay is sustained. Your  
11 question was just so vague.

12 MS. COBB: Okay.

13 BY MS. COBB:

14 Q Tell us about an outbreak of shigellosis in Genesee County in  
15 the summer of 2016?

16 A Well the U.S. Centers for Disease Control did a study that  
17 showed Flint residents had changed their bathing and showering  
18 habits due to fears about the safety of the water supply.  
19 Something like 80% of residents reported taking shorter baths  
20 or showers for example, and this is a great concern because  
21 bathing and showering is such an important of public hygiene.  
22 In our schools all around the country, classrooms, break, so  
23 for children to wash hands to minimize the spread of human  
24 disease. This is one of the great public health scourges that



1 we've to some extent controlled by simple handwashing for  
2 example, bathing and showering; and so when you see people  
3 altering their habits one would predict that a very adverse  
4 consequence of that could be increase of communicable disease,  
5 and Shigella is one of those so --

6 Q -- What is Shigella?

7 A Shigella is a microorganism that's transmitted by person-to-  
8 person contact that causes severe gastrointestinal upset and  
9 other problems.

10 Q And was there a problem with Shigella or shigellosis in  
11 Genesee County in the summer of 2016?

12 A Yes, they were having a very severe outbreak in Flint/Saginaw.

13 Q And were members of the FACHEP group messaging to the public  
14 regarding that?

15 MR. FLOOD: Objection, that's where again, I'm going  
16 to --

17 MS. COBB: -- Your Honor, I mean this is all stuff he  
18 was involved in, he heard, they're researchers he works with.  
19 The idea that, you know, he's just a water guy is really  
20 narrow-minded. I mean this is a guy that was a point person  
21 for everything that was going on here and he saw a lot and he  
22 heard a lot and he was very worried about the citizens of  
23 Flint and the messages that they were getting and he's working  
24 alongside researchers. He should be able to talk about what he

1 observed them messaging.

2 THE COURT: Observe, I'm sorry, observe when you say  
3 they message? Who?

4 MS. COBB: The FACHEP group.

5 MR. FLOOD: I think it's hearsay and then she's  
6 trying to use this witness to impeach another witness. That's,  
7 I mean, I don't know I'm just calling water wet. I'm not even  
8 a water guy but that's water wet, right, because using the  
9 good doctor here to try to impeach somebody else when he  
10 didn't examine that with that of the Doctor McElmurry. So I  
11 don't know of any exception there and I think it's myopic any  
12 other way to say that Doctor Edwards here is only, I'm not  
13 diminishing his work in what he did and how he was outspoken  
14 for a great cause. I don't want that on this record. I totally  
15 disagree with that.

16 MS. COBB: Your Honor, we're not trying to impeach  
17 anyone. We are trying to tell the story and I, Doctor Edwards  
18 knows this story and you should hear it.

19 MR. FLOOD: Well he's got to follow the rules.

20 THE COURT: Still got to follow all the Rules of  
21 Evidence and honestly it's still unfortunately it's trying to  
22 backdoor that issue of hearsay. It's still hearsay.

23 BY MS. COBB:

24 Q Did the FACHEP messaging about Shigella cause you and your

1 group to do any studies?

2 MR. FLOOD: Again, Judge, I object to the hearsay.

3 MS. COBB: It's not hearsay. I'm asking him what he  
4 did based on statements.

5 MR. FLOOD: She's trying to get in did the message of  
6 FACHEP at that, now she's trying to get into the messaging. So  
7 what Doctor Edwards did I think is fair game and I want to  
8 have come into evidence what he did. What his work was. What  
9 his contributions are. That's what comes in.

10 THE COURT: Go ahead and ask me the question.

11 MS. COBB: The question was, in response to the  
12 FACHEP messaging what did your group do.

13 MR. FLOOD: That's --

14 MS. COBB: That was the question.

15 MR. FLOOD: No, no, no (sic).

16 MS. COBB: Yes, it was.

17 MR. FLOOD: You had a couple adjectives in there.

18 THE COURT: It was different, definitely different,  
19 so go ahead and ask in that fashion.

20 MS. COBB: It was? Janet, was it different? Thank  
21 you.

22 THE COURT: Well I'm telling you it was different,  
23 so.

24 BY MS. COBB:

1 Q What did your group do in response to the FACHEP messaging  
2 about the Shigella?

3 A During the height of the outbreak we had collected water  
4 samples from those homes in Flint during the summer of 2016  
5 and we analyzed them for Shigella because there were, FACHEP  
6 was claiming --

7 MR. FLOOD: Objection to the hearsay, Judge.

8 BY MS. COBB:

9 A Shigella was coming from the water supply.

10 THE COURT: Hold on. Yeah, that part is stricken. If  
11 that's --

12 BY MS. COBB:

13 Q Did your team test the water to see if Shigella was coming  
14 from the water supply?

15 A Yes, we did.

16 Q Did you find that it was?

17 A We found no evidence of Shigella in the water supply. CDC did  
18 a study that was very thorough that showed there was no  
19 evidence that the Shigella came from the water supply.

20 Q In a Shigella outbreak do you want to encourage bathing,  
21 handwashing, that type of thing?

22 A Yes. To the extent that you think that the risk of that  
23 activity are low, there are tremendous benefits and so you  
24 always want to make sure that the benefits are realized while

1 avoiding the risk.

2 Q Have you presented about this Shigella issue before?

3 A Yes, I have.

4 Q I'm approaching you with what I've marked as quadruple L. Is  
5 this a presentation on your work?

6 A Yes. This is.

7 Q Who is it, who attended this EPA date assignment in January of  
8 2017?

9 A All key actors in the Flint disaster response team was there,  
10 CDC, EPA, three representatives of FACHEP, Doctor Wells was  
11 there.

12 Q And is this that I gave you, is this your work?

13 A Yes, well, my team's work, yes.

14 Q As it relates to your work in Flint?

15 A Yes.

16 MS. COBB: I move for the admission of DEX#LLLL.

17 MR. FLOOD: Judge, there is much hearsay in here and  
18 also statements that I think a slide presentation if I  
19 remember this correctly that gets into what we just talked  
20 about a moment ago as it relates to hearsay.

21 MS. COBB: Well, your Honor, he is an expert and he  
22 did, this is his work and that he has presented to others  
23 involved in this investigation and I believe it's admissible.

24 MR. FLOOD: There's multiple people that worked on

1 this with the good Doctor, not just Doctor Edwards.

2 THE COURT: The, I'm just looking through it. It  
3 looks, I see parts of it have other contributors, William  
4 Rose, Taylor Bradley, a water heater study, conclusions. If  
5 somehow you can lay a foundation for his work.

6 MR. FLOOD: Yeah, I don't have a problem with that.

7 THE COURT: That Saginaw in Genesee County Shigella  
8 outbreak it's got a number of people there, too.

9 MR. FLOOD: I don't have a problem, Judge, as it  
10 relates to Doctor Edwards work at all.

11 THE COURT: Okay.

12 MR. FLOOD: So whatever --

13 THE COURT: To his work specifically if you can help  
14 me out with what that is.

15 BY MS. COBB:

16 Q Doctor Edwards, I'm going to direct you in this Exhibit to the  
17 last several pages of it. Unfortunately it's not numbered but  
18 there is a picture of you with Flint residents.

19 A Yes.

20 Q Is this section of the report starting --

21 THE COURT: Well, just, just (sic) so, I got a bunch  
22 of pictures. Just so I understand what you're -- I see a  
23 title on the --

24 MS. COBB: It says much of Flint believes filtered

1 water is no longer safe.

2 THE COURT: That's what I, yep (sic).

3 BY MS. COBB:

4 Q Is this your work?

5 A Yes.

6 Q Did you put this part of the slide presentation together?

7 A Yes.

8 Q So it starts by saying much of Flint no longer believes  
9 filtered water is safe, right?

10 A Yes.

11 Q This picture is kind of hard to see but is that a picture of  
12 you with some Flint residents?

13 A Yes.

14 Q If you could turn to the following page. There is information  
15 and some quotations from something that happened on December  
16 14, 2016. What is that about?

17 A There was a press conference or a town meeting that was held  
18 by FACHEP and it was reported in the newspaper.

19 Q What was the message at that meeting?

20 A The meeting as reported in the papers was that the filters  
21 could increase bacteria and that Flint residents should take,  
22 could take and probably should take additional measures to  
23 protect themselves such as boiling or UV treating of the  
24 filtered water.

1 Q Was this a message that you agreed with or disagreed with?

2 MR. FLOOD: Judge, I'm sorry. I think I remember and  
3 looked back and I don't think, I don't think (sic) that that  
4 was in quotations from FACHEP. I think that was from the, if I  
5 can see it real quick. As I remember I don't believe that  
6 FACHEP said in quotations marks about the use of the water  
7 with the filter on. I do, so I object to that portion being  
8 hearsay. As it relates to this I don't have this quotation in  
9 here, I don't have a problem with but there was an added on  
10 portion to the quotation that he's speaking.

11 THE COURT: So, so, so (sic) the quote that's in  
12 here, it's important to let water run through the filter --

13 MR. FLOOD: I don't have an issue with that.

14 THE COURT: Okay, if there was an additional part  
15 that I was kind of reading while we were talking (sic).

16 MS. COBB: I was just asking what it said.

17 THE COURT: Okay, okay (sic).

18 BY MS. COBB:

19 Q Do you know who said that?

20 A I believe this quote was attributed to Doctor Nancy Love.

21 Q Was she a member of the FACHEP team?

22 A Yes.

23 Q Was it the FACHEP team that was holding this meeting on  
24 December 14, 2016?



1 A That's how it was presented in the paper, yeah.

2 Q I'm showing you what was previously admitted as DEX#UU and ask  
3 if you recognize that?

4 A Yes.

5 Q What is that?

6 A It's an email from Shawn McElmurry to Eden Wells.

7 Q What is the, what is the (sic) topic?

8 A Urgent Wayne State community meeting in Flint.

9 Q What was the problem? The urgent problem?

10 A The problem was the quotes that were used in relation to the  
11 filter use.

12 Q What, can you turn to the second page. There is an email from  
13 Doctor Wells to Doctor McElmurry saying we got a serious risk  
14 communications blowing up this morning.

15 THE COURT: I'm sorry, where are you at?

16 MS. COBB: I'm on to a previously admitted Exhibit,  
17 your Honor, UU.

18 THE COURT: Oh, okay, okay (sic).

19 BY MS. COBB:

20 Q Is that in reference to the statements made at this meeting?

21 A Yes.

22 Q Now did you think it was important for citizens of Flint to  
23 continue using the filters?

24 A Everyone to my knowledge at the EPA data summit including all

1 members of FACHEP except one agreed that it was very important  
2 to Flint residents to keep using the filters.

3 Q Did you field questions from Flint residents following this  
4 meeting about whether or not they should continue to use the  
5 filters?

6 A Yes.

7 Q Was this concerning to you?

8 A The questions they had were concerning to me because it  
9 reflected the fact that this information was presented out of  
10 context.

11 Q In what context were Flint citizens taking this information?

12 MR. FLOOD: Again, Judge, that would require hearsay.  
13 Objection.

14 MS. COBB: Based on what the calls he was fielding,  
15 not specific comments. Just to give the Court context about  
16 what his concerns were.

17 THE COURT: What Doctor Edwards' concerns were?

18 MS. COBB: No. What the Flint resident's concerns  
19 were.

20 THE COURT: Oh.

21 MR. FLOOD: Well that would be the hearsay part,  
22 Judge.

23 THE COURT: Ask the question --

24 MS. COBB: It's what he is doing in response to it.

1 He's going --

2 THE COURT: Just ask him what he was doing in  
3 response.

4 BY MS. COBB:

5 Q Is that why you were presenting at the EPA data summit about  
6 this messaging because you were concerned about Flint  
7 residents getting the wrong message?

8 A I was very concerned about the message that FACHEP was  
9 communicating, specifically for example, that it's important  
10 to let the water run through the filter for at least one  
11 minute because they're saying it's important. This is  
12 something they should do or they should boil their water or  
13 use a UV lamp. This quote essentially says that the filtered  
14 water is not safe by itself without taking additional  
15 measures.

16 Q Was there any data to support that notion?

17 A There was data presented that was similar to knowledge that  
18 had been in the field for twenty-five years that everyone  
19 knows these filters grow bacteria. There's a World Health  
20 Organization statement, a position statement on this subject  
21 that says everyone knows this. There's no evidence that these  
22 bacteria are dangerous. That's, that was common knowledge to  
23 people who have expertise in this area.

24 Q Did you voice your concerns about this messaging at the EPA

1 data summit?

2 A Yes, I did.

3 Q And were members of the FACHEP group there?

4 A Yes.

5 Q Did the messaging change?

6 A No.

7 Q Did that concern you?

8 A Yes.

9 Q Did you believe that was harmful to Flint residents?

10 A I believe that that was harmful to Flint residents, yes.

11 Q Did you ever ask members of the FACHEP group to support their  
12 concerns about the filters with data?

13 A Yes.

14 Q Were they able to do that?

15 A No.

16 Q Have you been vocal in your criticism of FACHEP in that  
17 regard?

18 A After a year and a half of speaking to them about this in one  
19 form or another and their failure to change their  
20 communications I did decide to speak out against that  
21 publicly.

22 Q How would you compare your professional dealings during all of  
23 this with the MDHHS staff to your dealings with other  
24 government agencies?

1 A Well there was the initial failure to respond to my FOIA  
2 request in September that I spoke out against on our website.  
3 At this point in my career I expect pushback. I don't really  
4 expect cooperation. I've done a number of these sort of  
5 interventions and so that was not outside the realm of what  
6 I've experienced. I'm not defending it. It makes me mad to  
7 this day that that initial FOIA in early September, late  
8 August was not filled but after that time and after I started  
9 working with Doctor Wells, I would say that MDHHS was a good  
10 example of what I hope government agencies could do. I called  
11 them out publicly in a good way on our website because Doctor  
12 Wells was actively cooperating and helping us understand what  
13 happened and why and so I was beginning to get a sense of  
14 trust that these were adults. These were trustworthy people.  
15 Maybe they had made some mistakes in the past but they were  
16 working hard to try to help Flint with the recovery. They  
17 worked hard to help us in all of our research.

18 Q Now just to kind of finish up here, we've talked a lot about  
19 how your group didn't find the pathogenic Legionella in the  
20 homes and small businesses which was contrary to your  
21 hypothesis. Are you pursuing different theories at this time  
22 from a research basis on what went on here?

23 A Yes, yes (sic). We are trying to see why the Legionella was  
24 abnormally low in Flint homes. We got hypotheses about how

1 that might have occurred. We've been conducting experiments on  
2 that subject for about a year and a half.

3 Q So here we are in March of 2018 and you are still trying to  
4 conduct research to determine this?

5 A Oh, yes. No, this will be, we will be researching this for  
6 decades to come.

7 Q Is it, would you say that this was a pretty complex and  
8 confounding case? These Legionella outbreaks?

9 A Yeah, absolutely.

10 Q Is there anything that you think Judge Goggins should know  
11 about your involvement in Flint that I haven't asked you  
12 about?

13 MR. FLOOD: Judge, objection to the broad, over broad  
14 --

15 MS. COBB: -- Well he knows a lot more about this  
16 than I do.

17 THE COURT: If it's specific --

18 MR. FLOOD: -- Yeah, that's actually funny.

19 THE COURT: It's a little broad.

20 THE WITNESS: I wouldn't even know where to begin.

21 MS. COBB: Okay. That's all I have. Thank you, Doctor  
22 Edwards.

23 THE COURT: Why don't I see everybody?

24 MS. COBB: What was the status on LLLL?

1 THE COURT: You know, it just kind of went through  
2 just those couple pages but --

3 MS. COBB: It kind of got lost in the objections and  
4 no objections.

5 THE COURT: I kind of let it go until we heard  
6 something else. All I heard was on these couple pages, really.

7 MR. FLOOD: I objected to those.

8 MS. COBB: You said you weren't objecting to part of  
9 it that was his work.

10 THE COURT: Court will take a brief recess.

11 (from 2:05 p.m. to 3:02 p.m., Court in recess)

12 THE COURT: We're back on the record with People  
13 versus Nicolas Lyon. You understand you're still under oath?

14 THE WITNESS: Yeah, yes.

15 THE COURT: I already made him aware he's still under  
16 oath. We're all set.

17 MR. FLOOD: I just need Alex to make a couple  
18 copies, Judge.

19 THE COURT: Okay. Mr. Flood, we're all set if you  
20 are.

21 THE COURT: Okay, thanks, thank you, Judge.

22 (PEX#84 and PEX#85 marked)

23 CROSS-EXAMINATION

24 BY MR. FLOOD:

1 Q Doctor Edwards, I'm going to try to be brief. I will let you  
2 know ahead of time where I'm going and I'm going to ask you  
3 some questions about your experiences first with the MDHHS.  
4 You came to Flint, what month was that?

5 A Well I started working with Leigh Ann in late April but our  
6 team first came to Flint in mid-August.

7 Q You started with Leigh Ann Walters in April of 2015?

8 A Yes.

9 Q And were you here or was that via phone?

10 A That was via phone.

11 Q You've personally put boots on the ground in August of 2015?

12 A Yes.

13 Q I see. So one of your tasks in discovering I think you've  
14 testified before about symptoms and problems with water around  
15 the country was to find out how water was being treated? Is  
16 that fair to say?

17 A Yes.

18 Q And, were you invited by the local department here, by the  
19 emergency manager or anyone to come and inspect at that time  
20 the water treatment facility?

21 A No.

22 Q Did you request to find out or get into the plants? The water  
23 treatment facility?

24 A No.



1 Q Did you do some research as it related to the communications  
2 between the Department of Environmental Quality and the  
3 Department of Health and Human Services?

4 A Yes.

5 Q In your research did you come to find out when they started  
6 communicating about what time? What, first of all, what year  
7 as it relates to Flint?

8 A In relation to Michigan Department of Environmental Quality  
9 talking to MDHHS I don't recall when that started.

10 Q I have, did, but you remember looking at emails?

11 A Yes.

12 Q I don't want to get into the content of that but you remember  
13 looking at emails?

14 A Absolutely.

15 Q And so you don't recall about that time, that period?

16 A No, not exactly.

17 Q So I'm going to give you a document, see if that helps you  
18 refresh your recollection as it relates to their  
19 communications. So when you're trying to find out in going  
20 through those emails why do you want to find out about when  
21 MDHHS and Michigan Department of Environmental Quality are  
22 communicating?

23 A Well from a scientific perspective you kind of want to know  
24 who you can trust, who you can't trust. From our webpage

1 perspective we were trying to educate Flint residents about  
2 what happened, when, where, and why. We were also enabling the  
3 Fourth Estate, the media, because we were releasing our  
4 Freedom of Information Act request online and that was part of  
5 our strategy to elevate the Flint water crisis in the public  
6 consciousness.

7 Q So one of the big things is who you can trust, is that fair?

8 A Yes.

9 Q And trust is a big part of the government. I mean, in your,  
10 you championing certain issues that in D.C. and the like,  
11 trust was lost by government on citizens, isn't that fair?

12 A Yes.

13 Q And that was clear in this case, correct?

14 A Absolutely.

15 Q So I'm going to hand you, this has already been, and I just  
16 want to see --

17 MS. COBB: Can I see it, please?

18 MR. FLOOD: It's #18, to refresh.

19 BY MR. FLOOD:

20 Q I'm going to --

21 MS. COBB: What are you trying to refresh his  
22 recollection on?

23 THE COURT: The timing, dates of communications.

24 MS. COBB: And this relates to that how?

1 MR. FLOOD: Relates to what? Because --

2 MS. COBB: The timing of Department of Environmental  
3 Quality and --

4 MR. FLOOD: MDHHS.

5 MS. COBB: How?

6 MR. FLOOD: By the research he did and seeing if that  
7 refreshes his recollection. It has the date on there.

8 MS. COBB: I, this document has nothing to do with  
9 any communications between MDHHS and Michigan Department of  
10 Environmental Quality so that's why I'm wondering what, how  
11 this is going to help.

12 BY MR. FLOOD:

13 Q Do you see that document there?

14 A Yes.

15 Q Do you remember looking at that?

16 A Yes. I have some memory.

17 Q Does that help you refresh your recollection about timeframe  
18 in that period of when the Department of Health and Human  
19 Services and the Department of Environmental Quality were  
20 talking?

21 A Yes.

22 Q And now that you've looked at that and refreshed your  
23 recollection what, what (sic) timeframe, what year first of  
24 all did you note that they were talking and communicating?

1 A Late 2014.

2 Q I'm sorry?

3 A Late 2014.

4 Q And 2014 so 2014 the sister agency of the Department of  
5 Environmental Quality, who Doctor Edwards you point out very  
6 rightly and correctly so was not be trusted, fair?

7 A MDEQ?

8 Q Yes.

9 A Certain employees.

10 Q Certain employees.

11 A A few, a few (sic) employees, yes.

12 Q Yes, yes (sic) and clearly the Michigan Department of  
13 Environmental Quality in October of 2014 they're talking to  
14 certain employees as it relates to the Department of Health  
15 and Human Services, correct?

16 A Yes.

17 Q And you're doing this research for you to find out who it is  
18 that you can and cannot trust, correct?

19 A Yes.

20 Q Because your concern as you find it is to basically protect  
21 the citizens from bureaucrats that as you put it in your  
22 testimony from Congress, not all, few, that a few that don't,  
23 don't (sic) have the interest of citizens at heart, is that  
24 right?

1 A Yes.

2 Q And so you move along in your research and you start posting  
3 things on the blog to educate people. When do you come into  
4 frustration if you will with the Department of Health and  
5 Human Services?

6 A My frustration with them was related to the Freedom of  
7 Information Act request, late August, early September of 2015.

8 Q So would you agree with me, Doctor Edwards, for, for (sic) the  
9 action in your frustration there was an agenda of some sort  
10 being advanced by the Department of Health and Human Services.

11 A Yes. I feel that way.

12 Q They were trying to hide things, right?

13 A I feel that there was an intent to slow things down in  
14 relation to the Freedom of Information Act request, yes.

15 Q Well you were working hand in hand at that time you start off,  
16 you, start off, Doctor Edwards, trying to find out what the  
17 blood lead levels in children were. You personally in  
18 September of 2015.

19 A August, September.

20 Q And it was your, by your impetus you started that, correct?

21 A Yes.

22 Q And you sent out a Freedom of Information Act over to a person  
23 you had worked with in the past, Robert Scott?

24 A Right.

1 Q Robert Scott, he in the past was very good and easy to work  
2 with, right?

3 A Absolutely.

4 Q But all of a sudden now in 2015 when the Flint crisis is  
5 coming on Robert Scott who works underneath that of Mr. Lyon,  
6 he's no longer forthcoming with you, is he?

7 A No.

8 Q As a matter of fact he's trying to suppress information from  
9 you, correct?

10 A I believe there was an attempt to slow down the Freedom of  
11 Information Act, yes.

12 Q About kids being poisoned with lead, right?

13 A Potentially, yes, that was, we didn't know at that time but we  
14 suspected it. That was the theory.

15 Q Right, right, right (sic). What our eyes don't see, we don't  
16 know, right? You didn't know it at the time, right?

17 A Right.

18 Q So all of a sudden now you're trying to find this information  
19 out because you had been working with Leigh Ann Walters and  
20 how basically she had toxic waste coming from her pipes,  
21 correct?

22 A Yes, and more specifically Brad Wurfel had already gone public  
23 with the statement that there was no problem with the blood  
24 lead level of Flint's children.

1 Q I'm sorry, say that last part again?

2 A Brad Wurfel.

3 Q Right, said?

4 A Had made a public statement that said there was not an issue  
5 with the blood lead of Flint children.

6 Q Right, and you had already looked at and got into evidence  
7 this PEX#28, PEX#28 (sic). This, Doctor Edwards, is that Brad  
8 Wurfel infamous email back on March 13<sup>th</sup>, right?

9 A Yes.

10 Q And do you see at this time who it is that Brad Wurfel wants  
11 to talk to? Do you see who he wants to put in the room?

12 A When you say put the room, you mean?

13 Q Do you remember Brad Wurfel talking and you talking about the  
14 information to Sarah Wurfel. Do you know who Sarah Wurfel is?

15 A Yes. I do.

16 Q And you remember Sarah Wurfel and Brad Wurfel communicating  
17 about this Legionella outbreak?

18 MS. COBB: Your Honor, I'm going to object at this  
19 point. This was something that was objected to when I tried to  
20 ask with Doctor Edwards and now Mr. Flood is going into  
21 exactly that which the Court prohibited.

22 MR. FLOOD: I will rephrase.

23 THE COURT: Okay, the objection is sustained based on  
24 he said he will rephrase it, so.

1 BY MR. FLOOD:

2 Q Legionella fair to say you had talked about on direct  
3 examination, at that time is known in the government of the  
4 State of Michigan, fair enough to say?

5 A I'm sorry, can you repeat that?

6 Q Sure. That email as you have pointed out and talked about on  
7 direct examination fair enough to say that Legionella is known  
8 about in the government of the State of Michigan at that time?

9 A Yes.

10 Q You said you talked with Mr. Lyon, is that right?

11 A No, not at this time. I didn't speak to him.

12 Q No, no (sic) I'm sorry. I misspoke. If I meant at this time,  
13 at that time. You said earlier you've actually had  
14 conversations with Director Nick Lyon.

15 A It was like one sentence, greeting. Just very superficial,  
16 yeah.

17 Q Superficial?

18 A Yeah, I never --

19 Q -- You never had a conversation?

20 A Never had a technical, substantive conversation to my  
21 recollection.

22 Q Very well. So you don't know when he learned about the  
23 Legionella outbreak?

24 A No.



1 Q So now you studied the outbreak, you looked at it in the water  
2 system, correct?

3 A Yes.

4 Q And, it was a pretty significant outbreak of Legionella, fair?

5 A Major outbreak.

6 Q Biggest outbreak in the history of what epidemics we see in  
7 Flint.

8 A Well, related to a failure to operate a municipal water  
9 supply. That's the hypothesis.

10 Q I gotcha (sic).

11 A So it's one of the bigger outbreaks, yes, but in terms of --

12 Q -- Fair, and you've seen the Epi-charts. You actually publish  
13 or talk about some of them in your articles, yes?

14 A Yes.

15 Q So in 2014, by October do you know how big the outbreak was by  
16 the hypothesis of that being of the water system? Do you know  
17 how big the outbreak? How many people had caught it by  
18 October?

19 A Just rough ballpark numbers, you know. I think roughly forty,  
20 something in that range.

21 Q And at that time forty, that's pretty significant?

22 A Oh, yes.

23 Q Is Legionella in a water distribution system, is it kind of a  
24 seasonal thing as it relates to?

1 A Yes, seasonal, tends to be seasonal, yes.

2 Q Where warm water is, where it would grow or when it would grow  
3 more, most?

4 A Yes.

5 Q Have more of an effect on human beings as far as potential  
6 metric of how much there is, right?

7 A Yes.

8 Q So you wouldn't expect to find much Legionella in January, the  
9 cold months, would you?

10 A Much? Well, you'd expect to find some.

11 Q Compared to?

12 A You expect to find more in the summer months, yeah, but.

13 Q Is, I think it's Amy Pruden, P-R-U-D-E-N. Who is she?

14 A She's my collaborator, best friend at Virginia Tech.

15 Q Best friend?

16 A Yeah.

17 Q You said your best friend?

18 A She's a microbiologist, engineer, environmental engineer.

19 Q Microbiologist?

20 A Uh-huh (sic).

21 Q So, and she collaborated with you on the outbreak?

22 A Yes.

23 Q And, is she an editor, an executive editor of any magazines or  
24 journals?

1 A Yes.

2 Q Which ones?

3 A Environmental Science and Technology.

4 Q And, you regard her in pretty high esteem?

5 A Yes.

6 Q Brilliant?

7 A Oh, yes.

8 Q And, sits on executive editor of that journal you just spoke  
9 of, is a significant position to fetch. That's not easy to  
10 get, is it?

11 A Yes, she's amazing.

12 Q Doctor McElmurry's paper, did you get a chance to read that  
13 with this team? Doctor Love, Doctor Kilgore, and the rest?

14 A Which paper?

15 Q The one that was just recently published you mentioned.

16 A Which paper is that?

17 Q The one where it talks about the Legionella being the outbreak  
18 of that?

19 MS. COBB: Your Honor, I don't believe Doctor Edwards  
20 talked about this paper. I think Mr. Flood is confusing that  
21 with Friday's testimony.

22 MR. FLOOD: No, I'm not because he said, yeah, he  
23 just recently published a paper so we can go back and read it.  
24 I remember exactly where it was. I promise.

1 MS. COBB: I apologize.

2 MR. FLOOD: That's right.

3 BY MR. FLOOD:

4 Q Do you remember looking at that?

5 A Yes, I do.

6 Q And, that's the paper that one of the authors is Doctor  
7 McElmurry? Who are the other authors, do you know?

8 A Sam (inaudible), Paul Kilgore, Lucinski (sic), Press, Love,  
9 Sadler, Swanson.

10 Q And, that's a journal where Doctor Pruden is at as an  
11 executive editor?

12 A No.

13 Q I'm going to hand you another document. Do you see that?

14 MS. COBB: Can you tell me what you're showing him?

15 MR. FLOOD: The same --

16 MR. CHAMBERLAIN: No, it's not. It's a different  
17 article.

18 MR. FLOOD: Different article? I thought it was  
19 published in a separate place.

20 BY MR. FLOOD:

21 Q Do you see that?

22 A Yes, I see that.

23 Q Do you recognize it?

24 A Yes.

1 Q You read that?

2 A Yes, I have.

3 Q And where is that published from?

4 A ASM.

5 Q What is that?

6 A American Society for Microbiology journal.

7 Q Is that the journal for where Ms., Doctor Pruden is on?

8 A I'm not sure she's there or not. She might be. She's, I know

9 she's on the ES&T (sic) staff.

10 Q Okay, you're not sure if whether or not she's on that one?

11 A Not sure. Wouldn't surprise me.

12 Q So I want to go back to some of the work that your team did

13 and do you remember who is Otto Schwake?

14 A Otto Schwake is a research scientist post doctorate, worked on

15 my team.

16 Q He worked on your team? And you had mentioned in Court earlier

17 that you had not found Legionella in smaller buildings?

18 A Legionella pneumophila in smaller --

19 Q -- Oh. Explain that for the judge. Did you find Legionella at

20 all?

21 A Yes. Species, Legionella species.

22 Q You did. Tell the judge what the difference between the two

23 is.

24 A Legionella pneumophila is considered the more dangerous form

1 that causes the majority of --

2 Q -- And do you remember I have an article here. I don't want  
3 you to read it out loud. I just want you to see, look at the  
4 article, see if you recognize it and then I may have some  
5 questions for you.

6 A Sure.

7 MS. COBB: Do you have a copy of that if you're going  
8 to ask him questions?

9 BY MR. FLOOD:

10 Q Did you get a chance to look at that, Doctor?

11 A Yes.

12 Q Do you recognize it?

13 A Yes.

14 Q And, so did you find in this article as you recognize it, do  
15 you agree with what your colleague Doctor Schwake said?

16 A Well first off, it's not a peer-reviewed article but secondly,  
17 I don't disagree with him.

18 Q Yeah, I, he's on your team and I realize not peer-reviewed  
19 articles, just something your team, a member of your team was  
20 talking about?

21 A Sure.

22 Q One of the things on your team there was evidence of  
23 Legionella colonization in the city's plumbing.

24 MS. COBB: Your Honor, this isn't admitted into

1 evidence so I don't know why he's reading from it.

2 MR. FLOOD: Well I'm asking, would you agree that you  
3 found Legionella in the plumbing system?

4 THE WITNESS: Yes, we found Legionella species in the  
5 plumbing system.

6 BY MR. FLOOD:

7 Q And, the warnings out there were continued vigilance is  
8 required.

9 A Right. We were part of the federal response. Around that time  
10 we were meeting with FEMA, CDC, everyone wanted to make sure  
11 we were doing everything possible to make sure the system  
12 recovered to the extent it could, as fast as it could. That  
13 included making sure that we were doing everything we could to  
14 control Legionella.

15 Q Right, and the conversation about that whole time was it's  
16 cold. It was cold out at that time so the speculation was  
17 Flint may not be out of the woods yet. Would you agree with  
18 that?

19 A Well, it's always possible. That's why vigilance is needed,  
20 yeah.

21 Q Right, and so when you had spoken about on direct examination  
22 with counsel you were talking about Doctor McElmurry's team  
23 coming up with the part of thirty-one samples in I think it  
24 was January. Do you remember talking about that?

1 A Yes, I do.

2 Q And, that was in January, correct?

3 A I think they might have written it later than that.

4 Q Oh.

5 A I think the plan was later in 2016.

6 Q Page 9.

7 A You mentioned a plan so this is actual results.

8 Q I'm sorry, the results.

9 A It's this June.

10 Q Okay, now look at page 9 of that and page 9 was what you were  
11 testifying to the Judge to earlier and then if you look to the  
12 portion of it here and what you read out loud it is during the  
13 January 2016 sampling event. So in January it's, you may not  
14 find as many. It's colder, right?

15 A Right.

16 Q So thirty-one, and you also said that's not a really big  
17 sample size.

18 A That's a big sample size but it's not a hundred.

19 Q Do you know how many samples Doctor McElmurry collected in  
20 total?

21 A As of today?

22 Q No. Back at the timeframe, well, yeah, let's go as of today.

23 A Some hundreds, probably thousands. Several hundred homes,  
24 multiple samples per home.



1 Q Fair enough. Is it fair enough to say that the water system if  
2 you would in the plumbing process, that the water quality is  
3 going to be different in different sections of the city?

4 A Yes.

5 Q It's not going to be all the same. Some parts have high  
6 chlorine levels and some parts you may not have, correct? Some  
7 parts you may have dead ends and other parts you may not?

8 A Right.

9 Q So when you take your sample would it be fair that you want to  
10 take it from a very wide distribution or wide area?

11 A Yes.

12 Q And, in thirty-one, how many samples did you take in your  
13 first test?

14 A Probably about samples we had probably fifteen locations,  
15 probably four samples per location, sixty, something like  
16 that, vial (sic) form, several flush samples.

17 Q So about fifteen locations?

18 A Yes.

19 Q And, you published that in your Legionella DNA markers tap  
20 water spike in Legionnaire's Disease in Flint?

21 A Yes.

22 Q You told the Court earlier you took two different times you  
23 took samples, one in August, yes?

24 A Uh-huh (sic).

1 Q Two dates, August 18<sup>th</sup> and August 19<sup>th</sup>, correct?

2 A Yes.

3 Q Fair enough to say, and I watched last night your testimony in  
4 Congress, is it my understanding correctly that you were the  
5 one, doctor, that you told the people in the city of Flint in  
6 August not to drink the water?

7 A Yes. We recommended that on our website.

8 Q In August of 2015?

9 A Yes.

10 Q Don't drink the water.

11 A That was our recommendation, yes.

12 Q Based on?

13 A Without, you know, taking extra flushing or filtering or  
14 something like that, yeah, based on our samples that we  
15 collected at that time. The logic was we knew Flint was not  
16 following federal control law.

17 Q Right.

18 A That they would be reasonably expected there would be a lead  
19 problem based on history and the science that's been going  
20 back for a couple thousand years at this point, and we also  
21 collected samples that confirmed lead was high at that point.  
22 They weren't final until mid-September but we'd seen enough to  
23 prove the obvious.

24 Q So in your paper that you publish sixteen single story homes

1 and businesses within Flint and four businesses within nearby  
2 Flint Township which maintained Detroit water. That was the  
3 first round of testing?

4 A Yes.

5 Q And, that was basically sixteen locations?

6 A Well, yeah, but multiple samples per location.

7 Q Oh, I understand. In those locations how did you pick them?

8 A We wanted to sample the same locations the city had been  
9 sampling in their monitoring. Those addresses were posted on  
10 the website so I personally collected those samples plus we  
11 wanted to sample from homes of residents who we thought had  
12 conditions highly likely to grow Legionella.

13 Q So you have to assume a few things in that. You have to assume  
14 that the city whatever they published on that website was  
15 actually factual.

16 A Yes.

17 Q Right?

18 A Right.

19 Q But you and I both know, well, I can't say that. You know that  
20 the, there was manipulation with regards to the Lead and  
21 Copper reports, don't you?

22 A I contend there was manipulation, yes.

23 Q So we can throw out the assumption that the places you checked  
24 may have been accurate to that of which the city tested, fair?

1 A You just lost me there.

2 Q Well --

3 A -- We published the information about where they tested on the  
4 website. We sampled the sites.

5 Q Right, but we don't even know if that's accurate? Fair?

6 A Well that would be a new one in my experience but I guess you  
7 can't trust everything. That's for sure.

8 Q You don't trust the city's reports because you thought they  
9 were manipulated?

10 A Yeah, but they are manipulated in a way that's consistent with  
11 other manipulations I seen and this would be a new one to  
12 falsify where you took samples but I'm open to new ways of  
13 manipulating data, yes.

14 Q Well you don't disagree that there was crimes committed in  
15 this case, correct?

16 A In relation to, yeah, I said from the start. We started our  
17 website because we felt an environmental crime was in  
18 progress.

19 Q You don't always know why criminals do criminal acts, fair?

20 MS. COBB: Your Honor, I have to, I don't think this  
21 goes with his knowledge to comment on this idea of criminal.

22 MR. FLOOD: Well, I'll move on.

23 BY MR. FLOOD:

24 Q The bottom line is you, you (sic) are assuming something that

1           there's a truth-teller out there in a place you already know  
2           has had criminal acts, fair?

3   A       Yes.

4   Q       And, the truth-teller being what you relied upon, you're not  
5           quite sure, you don't know whether or not that was good  
6           information, fair?

7   A       Now you lost me there.

8   Q       I am saying you don't know that the places that were listed on  
9           that website were actually accurate locations that they  
10          tested?

11   A       Well they were, as I said, when we were going to the Taco Bell  
12          the city was coming out so I mean the circumstances, they were  
13          like right behind us. It was just a total fluke but.

14   Q       That was just one location, right?

15   A       No, there was three locations.

16   Q       Three locations. So was that during the time where the E.coli  
17          was found?

18   A       No.

19   Q       It was a different time?

20   A       After that.

21   Q       So there were a hundred homes or a hundred locations on the  
22          website. I have the document if you want to see it of what  
23          they were supposed to test for Lead and Copper.

24   A       No.

1 Q Were you going to the --

2 A -- No. Where did this hundred come from? There was sixty-nine,  
3 seventy-one sites, they cut back to sixty-nine.

4 Q The first sample size was a hundred, correct?

5 A First sample was over a hundred. That was 2014 samples, yeah.

6 Q And, somewhere out of the blue there was a population issue  
7 and they decided to test only sixty, right?

8 A They decided to allow, they decided to change the number of  
9 allowable from a hundred to sixty at some point.

10 Q So the sixty-nine sites that were tested for the Lead and  
11 Copper Rule, is that the places you were going?

12 A No.

13 Q You were going to the, where the monitors were located?

14 A Yeah, these are the distribution monitoring sites. Totally  
15 different set of sample size.

16 Q And, do you know if there was any manipulation within those  
17 numbers as far as chlorine levels go or anything of that sort?

18 A Well that's why we were sampling. So some of our sampling is  
19 conducted in the same sites that the city claimed to sample  
20 and then by happenstance we proved that they were sampling  
21 there because they were going in the bathroom as we were  
22 coming out. So that was the point, was we wanted to say could  
23 the city be manipulating the chlorine results, the bacteria  
24 results, the DVP (sic) results. We wanted a sample as close to

1 the time that they were so that we could compare and we showed  
2 and we admitted on our website that all of their data was  
3 accurate in relation to DVP's (sic), chlorine levels, you  
4 know.

5 Q As a matter of fact some of the chlorine levels at four  
6 locations were at zero, correct?

7 A Just one.

8 Q Just one location was at zero?

9 A Yes.

10 Q The rest were .05 and less?

11 A No, they were higher.

12 Q So do you remember looking at the document that counsel showed  
13 you earlier as it relates to chlorine levels in four different  
14 months at certain locations?

15 A Yes.

16 Q And, you're saying at one location only it was at zero?

17 A On that day.

18 Q On the sample?

19 A They're taking samples every week or so, yeah.

20 Q By the way, when you test those sixteen samples, that's on  
21 that day. It doesn't give you something to go back in time,  
22 correct?

23 A It's a snapshot during what we thought was the optimally bad  
24 time or good time depending on your perspective to find

1 Legionella.

2 Q And, you did find in those testing sites, well, strike that.

3 During that timeframe did you find Legionella, not the one you

4 had mentioned but was it at that time?

5 A Yes.

6 Q You actually found bacteria, Legionella?

7 A Legionella species, yeah.

8 Q And, do you know what type?

9 A No. They were generally at low levels compared to other cities

10 as well.

11 Q You don't know what type they were?

12 A No.

13 Q It is your position that the Legionella outbreak in this town

14 was caused by the switch in the water source, correct?

15 A Yes, one of the key triggers for the outbreak was the switch

16 in the water source, yes.

17 Q And, you also contend that both Hurley Hospital and McLaren

18 Hospital they had high levels of Legionella?

19 A Yes.

20 Q In your water distribution expertise and, you know, water

21 facilities, do you know the difference between, and if you

22 don't, I appreciate it, but in your experience do you know the

23 difference between Sero type 6 and Sero type 1?

24 A Yes.



1 Q If someone were, do you know if whether or not a human being  
2 in a urine test can test positive for Sero type 6?

3 A Yes, it's, well it's my understanding --

4 Q -- I don't want to get into it then if that's not your  
5 expertise but you know there's a difference between Sero types  
6 1 and Sero type 6?

7 A Yes.

8 Q And, you test for those things in water systems?

9 A Now we do, yes.

10 Q Now you do, and what were you finding in Hurley Hospital?

11 A Well, we only looked at species and Sero group 1 and so we  
12 found relatively high levels.

13 Q Did you talk about finding high levels of Sero type 6?

14 A No, they weren't testing for it at that time.

15 Q I see.

16 A But it's part of the species. When you look for species you  
17 get everything plus pneumophila.

18 Q I got ya (sic). So I want to go back to your trust where we  
19 started. This gentleman, Mr. Scott, someone that works for the  
20 Department of Health and Human Services you worked with in the  
21 past, one time was trustworthy, now isn't. All of a sudden  
22 putting you off for information, correct?

23 A Well I wouldn't say he betrayed my trust at that point. I  
24 wasn't happy with the delays in the FOIA request so I felt

1 that was willfully being slid (sic) down.

2 Q I'm going to hand you what I've had marked as People's  
3 proposed Exhibit #85 and #86.

4 MS. COBB: I have them and there will be objections.

5 MR. FLOOD: Fine.

6 BY MR. FLOOD:

7 Q I want you to look at this document, PEX#85 and PEX#86 and see  
8 if you recognize them.

9 A Yes.

10 Q You recognize those?

11 A Yes.

12 Q And, how do you recognize them?

13 A Because I wrote them.

14 Q You wrote these?

15 A Right.

16 Q With your, that's your email, Marc Edwards?

17 A Yes.

18 Q And, you're writing them to Robert Scott and Doctor Mona  
19 Attisha?

20 A Yes.

21 Q And, is this what you talked about on direct examination when  
22 you were referring to your lack of trust as it relates to the  
23 FOIA?

24 A Oh, yes, well the anger.

1 Q As a matter of fact, this September 10, that's later on. You  
2 had to fill out, they made you fill out some forms a couple  
3 times, is that correct?

4 A Yeah.

5 Q Not only once but twice?

6 A Right.

7 Q To try to get what? What did you want to get?

8 A Data on the blood lead in Flint.

9 Q And, as you can see here --

10 MR. FLOOD: I'd move for the admission of both PEX#85  
11 and PEX#86.

12 MS. COBB: Your Honor, in keeping with these that  
13 we've gone all day these are hearsay. Statements of other  
14 people that are not here and you not letting those in today  
15 and I would just assume you'd be consistent about that. If you  
16 take that view then this would all be hearsay as well.

17 MR. FLOOD: Judge, I want to remind counsel that we  
18 had several documents admitted as it related to hearsay and  
19 emails. As a matter of fact the one here to Suzanne Cupal, who  
20 never testified.

21 MS. COBB: I don't believe those were objected to and  
22 I am objecting to these.

23 MR. FLOOD: Judge, he wrote them, he kept them in his  
24 ordinary course of business and they're his emails. It's not

1       like there's a foundational issue. They were his and he's  
2       writing these emails in response as he's already talked about  
3       and the door opened up on direct examination as it relates to  
4       the, to his frustrations with the Department of Health and  
5       Human Services.

6               THE COURT: The objection, what's --

7               MS. COBB: Your Honor, opening the door has nothing  
8       to do with hearsay and these do contain statements of others  
9       and not just him and they shouldn't be admitted.

10              THE COURT: So without looking at them there's other  
11       statements from other?

12              MS. COBB: Yes.

13              THE COURT: Persons in there?

14              MS. COBB: Yes, they're email chains.

15              MR. FLOOD: With him.

16              MS. COBB: And, Doctor Edwards is in there but there  
17       were a number of those that we attempted to admit this morning  
18       that were --

19              MR. FLOOD: -- Not with Doctor Edwards, his emails.

20              MS. COBB: There were.

21              MR. FLOOD: No. Give me one. Give me one (sic). Not  
22       with Doctor Edwards on there.

23              THE COURT: I'm trying to be fair to everybody. Were  
24       there ones this morning that we --

1 MR. FLOOD: Nothing with Doctor Edwards in writing an  
2 email. Judge, I'll tell you what I will do.

3 MS. COBB: I will show you --

4 MR. FLOOD: -- Is I will only put in Doctor Edwards  
5 statements.

6 THE COURT: That's great. If it's just his.

7 MR. FLOOD: I will leave everything else out.

8 MS. COBB: Was excluded because it had Doctor  
9 McElmurry's.

10 MR. FLOOD: No, you were impeaching somebody.

11 MS. COBB: No, I was not impeaching anybody.

12 MR. FLOOD: You're doing the old 608 move.

13 MS. COBB: That was excluded on hearsay.

14 MR. FLOOD: That was impeachment.

15 THE COURT: There was an issue with impeachment.  
16 Let's just, if you're just going to put his statements in.

17 MR. FLOOD: That's right.

18 THE COURT: That will be admitted just on.

19 MR. FLOOD: That's all I'm doing. Just what he  
20 writes.

21 THE COURT: Okay.

22 BY MR. FLOOD:

23 Q So, Doctor Edwards, on PEX#85, you write in subject matter to  
24 Robert Scott repeat of 2006 (sic) study request but for Flint

1 and Genesee and Detroit zip codes from January 2011, January  
2 1, 2011 to present. You write to him do you need anything else  
3 from me? Do you see that?

4 A Yes.

5 Q You get response, I don't want to get into the response, and  
6 then you write back after he responds, Doctor Edwards you  
7 write, yes, I think there is clearly and this is again the  
8 next day, September 11<sup>th</sup> so urgency to the situation. MDEQ has  
9 publicly stated that their blood lead records are showing that  
10 there is no public health concern for residents in Flint. Do  
11 you remember looking at the blood lead levels that were put  
12 out by the Michigan Department of Health and Human Services?

13 A I just read a statement that said that there was no problem.

14 Q And, you, Dr. Mona and you come to find that that's false,  
15 correct?

16 A Yes, in our analysis in mid-September, Mona's analysis, I  
17 don't know the --

18 Q -- And, you helped him (sic), right?

19 A Yes.

20 Q And, they lied, right? The Department of Health and Human  
21 Services published something that was not correct?

22 A Well in our later FOIA we found out sort of the background on  
23 that, yeah.

24 Q And --

1 A -- I think it's going a little bit far to say that was a lie.

2 Q Oh, they suppressed evidence? They suppressed Kristin Larter's  
3 (sic) report of the Short's (sic) report?

4 A I didn't see any sign that that was repressed. What I saw in  
5 our emails and we published on this at the time, that the  
6 right people were asking the right question at the right time  
7 and the right place. Is there an elevation in children's blood  
8 lead and emails that we got showed that a scientific study was  
9 done --

10 Q -- Well the scientific study is not a --

11 MS. COBB: Your Honor, can he please finish what he's  
12 trying to say?

13 MR. FLOOD: Well I'm in cross-examination.

14 MS. COBB: Well you don't interrupt on cross-  
15 examination.

16 MR. FLOOD: No, I asked a yes or no. I let him carry  
17 on. But you know what, just to speed things along here.

18 BY MR. FLOOD:

19 Q Doctor, you, you (sic) found people were asking questions.  
20 You thought --

21 MS. COBB: I still don't believe Doctor Edwards  
22 finished his statement so perhaps he can finish his answer?

23 MR. FLOOD: Go ahead, doc, Doctor Edwards.

24 BY MR. FLOOD:

1 A So a scientific study was done that found that there was an  
2 increase in the children's blood lead, however, it was  
3 considered by the scientists that that increase was seasonal  
4 and it was not much higher than what they'd observed in just  
5 very, very (sic) recent years so --

6 Q -- What doctors determined that?

7 MS. COBB: Your Honor --

8 BY MR. FLOOD:

9 Q Who determined that?

10 A That was written up in the emails that we found by FOIA.

11 Q So you didn't see all the emails that were released, did you?  
12 You just saw the ones that were in public documents?

13 A No. We did the FOIA. I saw the emails that we released on our  
14 FOIA.

15 Q Some of them had been blocked out with privileges, correct?

16 A I didn't see any. There might have been some redactions, yeah.  
17 In general at that time when we got those we were seeing the  
18 vast majority of what was in emails but I mean the bottom line  
19 was there might be new emails. I'm always open to new  
20 information but the emails I observed at the time, the  
21 scientists concluded that there was an elevation in the blood  
22 lead in summer of 2014 but that that elevation looked to be  
23 well within the realm of normal variation and with the benefit  
24 of even hindsight looking at that data that is not a



1 scientifically unjustifiable conclusion. Realize at the time  
2 that that study was done --

3 Q -- Yes.

4 A MDEQ was telling people there's nothing out of the ordinary  
5 happening in the Flint water system in relation to corrosion  
6 control. Now --

7 Q -- But you remember -- go ahead.

8 A So when I was writing these emails the burden of proof had  
9 shifted dramatically. At this point we knew there was no  
10 corrosion control in Flint. This is a year later. We had done  
11 a citywide sampling event that showed the lead in water was  
12 high. We had Leigh Ann Walters with her child had been lead  
13 poisoned from the water in early 2015, and at that point you  
14 can look at that same data with that new burden of proof and  
15 say as we did on our website in real time that was a missed  
16 opportunity. So I think it goes way too far to say that that  
17 was a lie. Reasonable scientists could and would look at that  
18 data and reach different conclusions. There is still people  
19 looking at the data today who are trying to make different  
20 conclusions about how bad the elevation in blood lead was in  
21 Flint's children. Other scientists are saying they don't even  
22 think it's the water. Frankly, I don't agree with that but the  
23 fact of the matter is that the elevation that occurred was not  
24 very high relative to the elevations that occurred in just

1 three, four years before. In fact it was low so I think it  
2 goes way, way (sic) far to say that that was a lie.

3 Q So you have a lot of assumptions. Did you interview anyone  
4 like Kristen Larter (sic)? Did you talk to her privately?

5 A No.

6 Q Did you talk to Nancy Pilot (sic) privately?

7 A No.

8 Q So you have a lot of assumptions. Did you know that Kristin  
9 Larter (sic) sent an email to the United States Justice  
10 Department saying that the truth had not come out? She was  
11 afraid.

12 A When was this?

13 Q You don't know that?

14 A When was the --

15 Q -- I'm asking you --

16 MS. COBB: Your Honor, it's totally improper throwing  
17 these types of -- if he's got something to show him, he can  
18 show it but he's testifying for Doctor Edwards.

19 MR. FLOOD: I'm asking --

20 THE WITNESS: I'm open to new sources of information.  
21 If there's emails that prove there's a lie here I'd love to  
22 see them.

23 MR. FLOOD: Bring up Kristin Larter's (sic) email.

24 BY MR. FLOOD:

1 Q So you didn't interview anyone, correct?

2 A No.

3 Q You don't know what type of report or science she used. Do you  
4 know was it Short's (sic) report and the other one, the first  
5 one you saw was just putting graphs together as far as the  
6 lead goes?

7 A There were some statistical analyses in the reports I saw.

8 Q So you wrote as we carry on, Doctor, in PEX#86, well, no,  
9 we're continuing PEX#85. The levels of lead in Flint water  
10 that we are finding in our water sampling are certainly in  
11 range that can cause childhood lead poisoning. Indeed, one  
12 child has already likely been lead poisoned from exposure to  
13 high lead in water. I think the fact that you already have  
14 other teams working on these records indicates of high level  
15 in interest in urgency. Congressional interest in the safety  
16 of the water is also very high and this will be an important  
17 issue in deciding options for treating the water in the weeks  
18 and months ahead. Best regards, Marc. Do you remember writing  
19 that?

20 A Yes.

21 Q And, it was after it?

22 A Yes.

23 Q And, then you carry on the following, that month. Going  
24 through back and forth trying to get your information. Do you

1 remember that?

2 A Yes. By that point I knew they weren't going to give it to me,  
3 so.

4 Q So you write in PEX#86, Doctor Mona Attisha, Robert Scott, and  
5 Jenny LaChance (sic). I understand that and I appreciate what  
6 you are doing. I also hope you can understand my frustration  
7 at seeing this data given to reporters in a relatively  
8 unprocessed, unscientific format used to support a claim that  
9 there is not a problem with lead in water in Flint, and worst  
10 of all seeing it used to refute the sound science that Mona  
11 did with her in-house data. I know you did not have anything  
12 to do with that but I strongly feel that what is happening is  
13 unethical. You're talking about the Department of Health and  
14 Human Services being unethical, correct?

15 A Yes.

16 Q I hope you send my message to whoever is abusing the data and  
17 the public trust in the science method in this way. I will be  
18 calling the state out on this abuse as long as it continues. I  
19 stand by my statements. This is the third rate and  
20 unscientific science that is being circulated by the state. So  
21 you're talking about their lead results that they put out is  
22 unscientific and third rate, correct?

23 A Yes.

24 Q And, then you go on and your department, the department that

1 the Director is in charge of here, your department should have  
2 expedited Mona's request to get access to the data. Why is  
3 that important to get Doctor Mona who is treating children?  
4 Why is it important to that have information expedited?

5 A Well, things were coming to a head here so you have to realize  
6 when did the burden of proof shift. The burden of proof  
7 shifted in 2015.

8 Q I don't even know what that means, the burden of proof. What  
9 do you mean by that?

10 A Well when you're looking at scientific analysis and you want  
11 to see if there is a change that occurred, of course there's  
12 the raw science that you do. The statistical testing, the  
13 analysis but then there is the interpretation of that data and  
14 that's where it went wrong back in 2014 when they did their  
15 first analysis. There was a slight elevation in the blood  
16 level that occurred but logically someone looked at it and  
17 wrote, at least in an email, correctly, that that elevation  
18 was not higher than what was normal in Flint just a few years  
19 before and that it could be attributed to things other than  
20 the water supply for example; and so, again, this debate is  
21 still going on. The elevation that occurred was not so high as  
22 to make that idea, you know, unjustifiable by a good, sound  
23 scientist, but in August what happened, in August we learned  
24 that the lead in water was high contrary to what MDEQ had been

1       telling everyone all along. We proved that. We proved that  
2       with Flint citizen so you now know that lead in water is high.  
3       You now know federal law is not being followed, and suddenly  
4       that spike that looked normal the year before, suddenly the  
5       interpretation given to that looks much less justifiable.

6   Q    I appreciate that. My question was, and if you could I was  
7       just asking, why is it important that someone help out Doctor  
8       Mona to expedite her getting results to help out kids? Was it  
9       helping out the kids that was important that you wanted to get  
10      --

11   A    -- Oh, yes.

12   Q    That's all I was asking.

13   A    We were --

14   Q    I appreciate the other stuff.

15   A    We felt the city of Flint was in an imminent and substantial  
16       endangerment. We felt that way throughout 2015 in terms of the  
17       lead.

18   Q    Could you say that one more time? You thought that the city of  
19       Flint, the citizens in this town, were in imminent threat and  
20       harm?

21   A    Imminent and substantial endangerment. I said many times we  
22       saw an environmental crime was in progress in relation to the  
23       lead issue.

24   Q    And, certain acts should have been followed?

1 A Yes.

2 Q Fair enough, so you should also tell the team that is  
3 analyzing the data that lead in water often peaks in the  
4 summer months and declines in the winter months. It is clear  
5 from their one-pager that they do not know the first thing  
6 about lead in water. Do you remember that?

7 A Yes.

8 Q And, it was accurate then, correct?

9 A Yes, it's accurate for most health departments.

10 Q And, then you continue on and you write Doctor Mona and Doctor  
11 Scott, I mean Robert Scott, again. Specifically to Doctor Mona  
12 you write, when you get the data let me know. Since you are  
13 involved and have apparently requested the data already  
14 independently I will not be bothering Robert further.  
15 However, I will be speaking out about the unethical behavior  
16 in the state in not sharing the data to date and their abusing  
17 of power to discredit the work you have done. The second they  
18 give you data, I will stop speaking out. Robert, I apologize  
19 to you because I know you did not have anything to do with it,  
20 but what is happening here is just wrong. You meant that,  
21 correct?

22 A Yes, I still mean it.

23 Q And, you still mean it?

24 A Yes.

1 Q And, the Department of Health and Human Services, the person  
2 here in Court today, Director Lyon, he's the one that directs  
3 this department, correct?

4 A Yes.

5 Q Now he writes out a statement and I'm going to pull up this  
6 Exhibit on the board as it relates to what you just wrote  
7 about back in September 25, 2015. Do you remember this email  
8 as it relates to your desire to get the lead reports and  
9 testing for children with lead poisoning?

10 A Where am I supposed to see this?

11 Q It's going to be, first I'm going to show you if you'd look  
12 around. Right behind you, Doctor, you can see this is  
13 September 28<sup>th</sup> Sue Moran to Nick Lyon and then you are going to  
14 see Nick Lyon underneath that.

15 MR. FLOOD: Number one, if you can pull out number  
16 one, I don't know if you can or can't.

17 BY MR. FLOOD:

18 Q Do you remember this, doctor?

19 A Yes.

20 Q I need an analysis of the Virginia Tech/Hurley data and their  
21 conclusions. I would like to make a strong statement with a  
22 demonstration of proof that lead blood levels seen are not out  
23 of the ordinary and are attributable to seasonal fluctuations.  
24 Geralyn is working on this for me. She needs someone in public



1 health who can work directly with her own immediate  
2 concern/questions. Sue, please get her a name immediately.  
3 Now, Doctor, when you read that do you work as an engineer,  
4 civil engineer, in trying to find out something do you work by  
5 trying to you first take your conclusion and then you try to  
6 fit the evidence into it or do you try to follow, you know,  
7 the Joe Friday, kind of Dragnet, just the facts and lead that  
8 to your conclusion?

9 A Well you first off in this case, they'd already done their  
10 study the year before. The study was done. A conclusion was  
11 reached. That conclusion was exactly what Mr. Lyon said. That  
12 the elevations were not that out of the ordinary. There was a  
13 seasonal fluctuation.

14 Q Do you know if Nick Lyon knew that statement? I thought you  
15 didn't talk to him.

16 A I read the emails. I read the emails of what a scientist  
17 concluded.

18 Q But that wasn't my question. You're assuming something. I just  
19 asked you did Nick Lyon know that it was already done?

20 A Well it seems to me he's referring to that prior study.

21 Q Where does he say that?

22 A Because he's using the exact words that were in that report.

23 MS. COBB: He's asking him to read an email to which  
24 he's not a party and interpret it. I think he should allow him

1 to interpret it if that's what he's going to ask him to do.

2 MR. FLOOD: No. I asked him if he follows his  
3 conclusion to try to put evidence into it. That's what I asked  
4 him.

5 MS. COBB: Well you're showing him an email, that's  
6 your theory that that's what Mr. Lyon was saying.

7 MR. FLOOD: But I haven't gotten --

8 MS. COBB: It's an assumption on your part.

9 MR. FLOOD: I'm going to ask him questions off the  
10 email. First one was, do you take a conclusion and put your  
11 evidence into it or, now, if you want to continue I mean so  
12 I'm going to go through this and ask him questions on it.

13 THE COURT: At this point the question is  
14 appropriate. You can go ahead and ask.

15 BY MR. FLOOD:

16 Q So in doing research I'm just asking a simple question, I will  
17 get to the other stuff in a moment, Doctor. Do you follow a  
18 theory of taking your evidence and trying to put your evidence  
19 to a fact? A conclusion? Or do you take a conclusion and say  
20 it must be X and then try to find evidence to fit into that?

21 A You know, you make a hypothesis, a hypothesis of possible  
22 conclusion and then you evaluate the strength of that  
23 hypothesis.

24 Q And, you --

1 A -- If it's true or not your try to prove or disprove it.

2 Q So you follow the facts?

3 A You follow the data. What does the data show.

4 Q And, in this you don't know here, I need an analysis of the

5 Virginia Tech/Hurley data and their conclusions. Do you

6 remember what the conclusion was at that time with Doctor

7 Mona?

8 A Well I mean the thing you got to remember here is a study was

9 done a year before on this very subject. A conclusion was

10 reached at that time.

11 Q Well let me ask you. You say a year before. The study wasn't

12 done until, it was done in July. What year are you talking

13 about? You say it was done in 2014?

14 A Well there was analysis done by Michigan Department of Health

15 and Human Services that we reported on that looked at the

16 blood lead elevation in 2014.

17 Q When did they do that?

18 A You can look on our website. I think it was probably it was

19 either late 2014, more likely early 2015.

20 Q It was July 28, 2015. Does that help you refresh your

21 recollection?

22 A So I have to check and see the exact date. A study was done.

23 Q Do you remember when Leigh Ann Walters, didn't she talk to you

24 about having to go up to Lansing on August 4, 2015?

1 A Right.

2 Q Do you remember that? And, she met with people from the  
3 Michigan Department of Health and Human Services and they had  
4 to jam in this report that was done by Nancy Peeler and Robert  
5 Scott ahead of time?

6 A No, that was not that. That's not what I remember. It was a  
7 report, the August 4<sup>th</sup> meeting was with MDEQ and they were  
8 talking about Miguel Del Toral's report.

9 Q You don't remember Nancy Peeler calling in? You weren't there,  
10 correct?

11 A I remember the August 4<sup>th</sup> meeting that you referred to and that  
12 was about MDEQ and Miguel Del Toral's.

13 Q Were you there?

14 A It was reported to me at the time.

15 Q Were you there?

16 A I was not there.

17 Q So you don't know if Nancy Peeler called into that meeting?

18 A I do not know if Nancy Peeler called into that meeting.

19 Q And, July 28, 2015 the report for lead poisoning in kids you  
20 don't, do you know if that was the date that Robert Scott and  
21 Nancy Peeler put that report together?

22 A That's not inconsistent with my memory, no.

23 Q Do you know that Robert Scott graduated with a degree in  
24 literature and wasn't even a --

1 MS. COBB: I object as to relevance. At this point  
2 are we impeaching someone not in this room? I'm not sure what  
3 is happening here.

4 MR. FLOOD: I'm asking him questions on cross-  
5 examination. He opined something and I'm asking him whether or  
6 not he has the information or is making assumptions.

7 MS. COBB: Well it still has to be relevant even on  
8 cross-examination and I don't know that Mr. Scott's  
9 qualifications at this point are really relevant.

10 THE COURT: The testimony at this point though is  
11 that he's relying on information. He testified that he's been  
12 relying on facts that were given to him. The question with  
13 regard to relevancy of this particular individual is relevant  
14 because if he's relying on just what that person is stating  
15 it's relevant. Question can be asked.

16 BY MR. FLOOD:

17 Q Do you know Robert Scott's qualifications to do the research  
18 on what lead poisoning was in children?

19 A No, I don't.

20 Q So you don't even know who did the report?

21 A I remember reading the names but I don't remember as I sit  
22 here. All's I know is a study was done on the blood lead from  
23 2014 and it was done before this statement, this email that's  
24 here.

1 Q That's the 28<sup>th</sup>.

2 A Pardon me?

3 Q This isn't September just shortly after you read that last  
4 email.

5 A Right, but the study, there was a study done to look at this  
6 issue well before then.

7 Q And, you just said to the Judge it helps you, your memory,  
8 that was in July 28<sup>th</sup> of 2014 or '15.

9 A It was not, that's not inconsistent.

10 Q And, the meeting that the Department of Environmental Quality  
11 and the Department of Health and Human Services on August 4<sup>th</sup>  
12 is meeting with the citizens of Flint to say that everything  
13 is okay. You knew about that, right?

14 A I knew that MDEQ participated at that meeting based on how it  
15 was reported to me. I did not know that anyone from Michigan  
16 Department of Health and Human Services was there or called  
17 in. I wouldn't be surprised if they did.

18 Q And, at that time in September of 2015 fair enough to say you  
19 don't trust the Department of Health and Human Services with  
20 the release of their information nor the Department of  
21 Environmental Quality?

22 A Well a few individuals.

23 Q I'm sorry.

24 A I had a few experiences with a few individuals from MDEQ both

1 secondhand and what was reported to me largely hearsay but  
2 proved to be true, and the lack of response to the FOIA, yeah.

3 Q And, you called them unethical.

4 A Called them unethical, yep (sic).

5 Q And --

6 MR. FLOOD: May I have a moment, Judge?

7 THE COURT: You may.

8 BY MR. FLOOD:

9 Q Do you remember, there's two things that I want to finish up  
10 with. Do you remember doing an interview with the New Yorker?  
11 New York Magazine? New York Times magazine in --

12 A -- Yeah, I remember many interviews.

13 Q Do you remember that? And, do you remember reading it and then  
14 ultimately making some changes to it and then did you agree  
15 with the article?

16 A Not really. There are parts I agreed with, parts I didn't  
17 agree with.

18 Q They got all your quotes right?

19 A Yes, I think so. Is this the New York Times magazine or the  
20 New Yorker?

21 Q I think it's the New York Times magazine.

22 A Okay, yes.

23 MS. COBB: Your Honor, I think we probably should  
24 know what it is.

1 MR. FLOOD: Yeah, it's the New York Times magazine.

2 BY MR. FLOOD:

3 Q So do you remember making statements in there about people  
4 taking showers and not taking showers?

5 A I don't remember that statement.

6 Q You were talking about hygiene. You talked about hygiene on  
7 direct examination with counsel asking you.

8 A If you want to read me quotes I will look at the quotes.

9 Q Okay, it's the New York Times magazine.

10 MS. COBB: Can I read it?

11 BY MR. FLOOD:

12 Q I'm going to hand you this article, see if you recognize it  
13 from the New York magazine, New York Times magazine and I have  
14 a highlighted portion back there.

15 MS. COBB: Your Honor, just for the record, what Mr.  
16 Flood is showing Doctor Edwards is short but it's a complaint  
17 by I guess a citizen of some sort to him and his response to  
18 it and I believe that when we were talking about this earlier  
19 on direct examination where I wanted to ask him about  
20 complaints he was getting from citizens due to improper  
21 messaging, the Court didn't allow it so, again, for  
22 consistency --

23 MR. FLOOD: Judge, it's not that but I don't mean to  
24 step on your words. It's not that. If we can approach because



1 I don't want to put it out in the public right now.

2 MS. COBB: Well we might as well just put it on the  
3 record.

4 MR. FLOOD: Alright. So Doctor Edwards and Doctor  
5 Mona are in a classroom in fourth grade here in Flint and they  
6 are going to lecture throughout places. The question is asked  
7 about --

8 MS. COBB: Is this addressing a legal issue?

9 MR. FLOOD: You just put out what I was going to do  
10 and I'm putting out the truth. You're going alternative  
11 facts.

12 THE COURT: Rather than, why don't I see you both?

13 (from 4:17 p.m., to 4:20 p.m., bench conference, off  
14 the record, all parties present)

15 BY MR. FLOOD:

16 Q I'm just going to ask you, do you recognize that article?

17 A Yes.

18 Q And, do you agree with the statements you made in that  
19 article?

20 A Yes.

21 THE COURT: The question, you heard the statements  
22 made? I got nothing.

23 MR. FLOOD: I know, I realize. I'm not going to put  
24 it in.

1 THE COURT: Okay.

2 MR. FLOOD: Judge, I just want to make sure that  
3 PEX#52 is admitted into evidence and I'm done.

4 THE COURT: I think counsel --

5 MS. COBB: What you just showed me is PEX#52 and it  
6 is admitted into evidence.

7 MR. FLOOD: I just wanted to make sure. No objection  
8 to that.

9 THE COURT: What I'm going to do is PEX#52 is  
10 admitted whether I got it here. I got to look for it.

11 MR. FLOOD: Right, and --

12 MS. COBB: Regarding Mr. McElmurry's testimony.

13 MR. FLOOD: As it relates to the New York Times  
14 magazine article, I would like to get that marked and entered  
15 only as it relates to what Doctor Edwards says in that article  
16 and I'm done.

17 MS. COBB: So we're going to take out twenty other  
18 pages and leave in a paragraph?

19 MR. FLOOD: It's a bench (sic), the Court can take  
20 notice of the statements only in quotations of what Doctor  
21 Edwards says.

22 MS. COBB: But I mean it's got a ton of other  
23 information in there about which there's been no testimony so  
24 I think it's really all hearsay.

1 MR. FLOOD: I'm agreeing with that.

2 MS. COBB: As far as --

3 MR. FLOOD: -- Fine. I trust you, Judge. I will  
4 redact it.

5 THE COURT: So --

6 MR. CHAMBERLAIN: Your Honor, I resent that remark.  
7 The implication is defense counsel doesn't trust the Court.  
8 The comment made is that's what's typically done in  
9 litigation. It's irrelevant stuff is excised.

10 MR. FLOOD: That's not true in a bench trial, Judge,  
11 nor in a preliminary exam.

12 MR. CHAMBERLAIN: This isn't a trial.

13 MR. FLOOD: I said or, disjunctive, preliminary exam.  
14 So that's why the Court can take it under notice as we do with  
15 many pieces of evidence so I resent that.

16 THE COURT: Really, truly up to, I'm trying to be  
17 civil with everybody. I don't mind reviewing it with the  
18 understanding that it's just, but if, if (sic) that's a  
19 concern I don't mind the two of you going through and crossing  
20 out what you don't want me to see.

21 MR. FLOOD: That's fine with me, Judge.

22 MS. COBB: We'll figure it out, your Honor.

23 MR. FLOOD: Thank you. I have no other questions.

24 THE COURT: But I guess just so that we're clear

1           though it will be, the New York Times article is going to be  
2           admitted with just his statements?

3                     MR. FLOOD: Correct.

4                     THE COURT: Mr. Chamberlain, I think you look kind of  
5           -- does that make sense?

6                     MR. CHAMBERLAIN: Yes.

7                     THE WITNESS: I'm actually confused. I'm confused now  
8           because how do you know? I mean I was just asked this quote.  
9           We didn't even talk about the quote. As long as it makes sense  
10          to you.

11                    THE COURT: You got to kind of bear with us on that,  
12          so.

13                                     REDIRECT EXAMINATION

14 BY MS. COBB:

15 Q       Doctor Edwards, I just have a very short list of things I want  
16       to ask you but Mr. Flood asked you a number of questions about  
17       the numbers and samples you took when you were sampling for  
18       Legionella and whether they were dispersed throughout the city  
19       and questions along those lines, right? I guess I just want to  
20       ask you is it fair to say that you were satisfied enough with  
21       the results of the sampling event showing no Legionella  
22       pneumophila in any of the homes or small buildings in Flint  
23       that you have completely shifted your research to look in  
24       other directions?

1 A Right. Our website we said we have to remain vigilant and, but  
2 it's clear our initial hypothesis was not accurate.

3 Q Did you feel that there would be any value in continuing to  
4 follow old ground by sampling more in different places?

5 A Well not the same ground. We had to look somewhere different  
6 to have brought us to the large buildings.

7 Q Now you said you recommended on your website after your boots  
8 on the ground in Flint not to drink the water. That was  
9 related to lead, correct?

10 A Yes.

11 Q It had nothing to do with Legionella?

12 A Yes.

13 Q Your frustration when, with the Michigan Department of Health  
14 and Human Services staff in September of 2015 was related to a  
15 slow FOIA request?

16 A Right.

17 Q And, did that ultimately get resolved?

18 A Yes, and let me just say, you know, in response to FOIA  
19 request, usually they take months.

20 Q Okay.

21 A I was particularly impatient on this FOIA request because  
22 statement had been made in the press that something showed the  
23 blood level is not a problem. That Mr. Wurfel had said that.  
24 So I was particularly impatient because, again, we felt this

1 imminent and substantial endangerment. Normally you can expect  
2 to wait three, four months for a FOIA. I was not going to show  
3 my normal patience at that time.

4 Q But it did get resolved and you did get the data that you  
5 needed?

6 A Doctor Mona, I knew she had the data, decided to work with her  
7 on that and from the time I wrote those nasty comments which I  
8 defend to this day, to the time that the State admitted there  
9 was a problem, it was probably just two weeks time so things  
10 were coming to a head and so ultimately whatever delay  
11 thankfully occurred, it did delay a response potentially as  
12 much, you know, a week or two, which you know, in the context  
13 of government agency responses is kind of a very short time in  
14 my experience.

15 Q So are you saying that once brought to the attention of  
16 Department of Health and Human Services scientific staff they  
17 were willing to re-evaluate their data and were open to  
18 different conclusions?

19 A That's my interpretation of Mr. Lyon's email. Is that we just  
20 did this study. We made a conclusion under one set of  
21 assumptions. Now suddenly the assumptions are changed. Are we  
22 still going to stand by those conclusions and if so, why not?  
23 This is the kind of email I would write. Scientists are not  
24 snowflakes. If my staff or my scientists had done that study I

1 would have asked them the exact same or other questions. We  
2 just did this study. We had this conclusion. We need to put  
3 that conclusion out there if we believe it. Well, obviously  
4 the burden of proof had shifted. Suddenly things were being  
5 interpreted differently but it's wrong to say that there was a  
6 lie or at least I could see in the analysis that was done at  
7 that time. On our website I characterized it as a missed  
8 opportunity. I did that upon my first viewing of those emails  
9 and I stand by that today. I see nothing in the emails that's  
10 been presented to me that's changed my opinion since I wrote  
11 it in real time.

12 Q Well when you make a public statement about matters relating  
13 to human health do you want to make a strong statement with a  
14 demonstration of proof?

15 A Yes.

16 Q So that's completely appropriate?

17 A I read Mr. Lyon's email as completely appropriate under the  
18 circumstances that a study had been done, a conclusion had  
19 been reached, new information was now available that made that  
20 tick up in the blood lead, which was not abnormal  
21 historically, even by the standards of recent history, to have  
22 that be interpreted in a different light and the State did so  
23 I think within a matter of a few days.

24 Q So within a matter of a few days being presented with facts

1           contrary to the results of their prior study, the State was  
2           willing to acknowledge that a different view of their data was  
3           warranted?

4   A       They did, yeah. When, you know, Doctor Wells, yeah, I mean  
5           it's very clear.

6   Q       Mr. Flood asked you whether the switch in the water source was  
7           a cause of the Legionella outbreak and you, your answer was,  
8           the switch in the water source was a trigger. What in your  
9           mind is the difference between a trigger and a cause?

10   A       Okay, so the joint commission standard if you will, since 2001  
11           is for hospitals to have a Legionella defense plan or a  
12           Legionella control plan and to follow, and if you have a good  
13           plan in place then your building likelihood of getting  
14           Legionella is almost independent of the water supply. That is  
15           to say as a general rule no matter how screwed up your water  
16           is within the range of screw ups that occur in America, right,  
17           that your building will prevent Legionella outbreaks from  
18           occurring and here's how you're going to do it, A, B, C, D,  
19           and E. So what happened was that because the water supply from  
20           Detroit was protecting buildings, large buildings all over  
21           Flint, this is my interpretation, many buildings that did not  
22           have an adequate Legionella control program were not  
23           witnessing the problem (sic). But when that disappeared  
24           certain buildings deficiencies in their plans were exposed. So



1 both things are true, both things are true that the outbreak  
2 was largely confined to a few buildings and the majority of  
3 the deaths, a lot of the disease and it's also true that  
4 there's not much evidence, in fact there's evidence to the  
5 contrary that people were contracting disease at higher than  
6 normal levels in their homes based on our sampling; and it's  
7 also true that the switch and failure to implement corrosion  
8 control was the triggering event that exposed these  
9 deficiencies in some large building, Legionella control  
10 points. All of those things I believe to be true.

11 Q But the, I want to make sure I understand. Buildings that had  
12 an adequate control plan in place were not affected by the  
13 water switch?

14 A Well I wouldn't say they were not affected but I would say  
15 they would be protected and the building occupants would be  
16 protected to a greater or lesser extent, depending on how good  
17 that plan was.

18 MS. COBB: That's all I have. Thank you.

19 THE COURT: I guess I have just one question for you.  
20 You just stated that key triggers for the outbreak were the  
21 water switch, right. One was largely confined with large  
22 buildings, right? The second one, maybe I missed it. I thought  
23 you said that Legionella contraction in residential homes went  
24 up.

1 THE WITNESS: No, that it did not. So I see no  
2 evidence that the incidence of Legionella contracted in homes  
3 in Flint was higher than what we expect to see nationally and  
4 to the contrary, our actual sample data as well as FACHEP's  
5 data show that if anything the Legionella levels in the Flint  
6 homes was lower, Legionella pneumophila and Legionella species  
7 were lower than what we typically found are elsewhere in the  
8 country.

9 THE COURT: That was consistent with testing?

10 THE WITNESS: Yes.

11 THE COURT: And, then of course the deficiencies in  
12 the corrosion control.

13 THE WITNESS: Right. So all three of those things can  
14 be true at the same time and I believe they were true at the  
15 same time.

16 THE COURT: Any other questions based on what I  
17 (sic)?

18 MS. COBB: No, thank you.

19 RE-CROSS-EXAMINATION

20 BY MR. FLOOD:

21 Q Do you have an explanation of why there were so many non-  
22 associations of Legionella victims with the hospitals?

23 A All the data that I have seen with one exception, suggest that  
24 a majority of the cases were associated with healthcare

1 facilities. That's consistent with conventional outbreak  
2 patterns.

3 Q I understand majority. There was actually by the data of the  
4 report you looked at, forty-five cases not associated with  
5 hospital care.

6 A Which report is that?

7 Q The final report that you have up there that I think --

8 A The FACHEP report?

9 Q No, Doctor, the report from the Michigan Department of Health  
10 and Human Services that was given to you earlier?

11 A Can you show me the specific line that speaks that?

12 Q As you are saying the majority of cases you think are hospital  
13 associated, what about the ones that are --

14 MS. COBB: May I approach him with, yeah, I have it.

15 MR. FLOOD: Yeah, great.

16 BY MR. FLOOD:

17 Q The ones that are not hospital-associated. What was that  
18 attributed to?

19 A Well those were relatively few in numbers. You never can  
20 account for all of them. There were quite a few cases of folks  
21 who thought to have ever been exposed to Flint water period.  
22 There were those in the hospital. The terms of those who were  
23 exposed to Flint water that were not healthcare-related, that  
24 number was relatively small.

1 Q So do you know if those matched the sputum samples matched any  
2 of those environmental samples?

3 A No, I don't. Not as I sit here, no. Yeah, so that's consistent  
4 with what I just told you. There's very few cases of people  
5 who have no possible exposure in healthcare they were exposed  
6 to Flint water.

7 Q There's a difference between healthcare-associated and  
8 healthcare-acquired, correct?

9 A Yes.

10 Q So you're not saying the great majority of them were  
11 healthcare acquired, right?

12 A Well I'm saying there was a majority so sixty percent have the  
13 potential healthcare exposure. This is what we typically  
14 expect and you've got others who -

15 Q -- Forty percent or so that are not.

16 A Eight of them are forty-four percent on the city of Flint  
17 water, yeah.

18 Q That's what I'm saying, forty-four percent are not healthcare-  
19 associated.

20 A Right.

21 Q How do you answer for --

22 MR. FLOOD: I have no other questions. Thank you.

23 MS. COBB: I'm done.

24 THE COURT: You can step down for me.

1 (at 4:38 p.m., witness excused)

2 (from 4:38 p.m. to 4:45 p.m. bench conference, off  
3 the record, all parties present)

4 THE COURT: Court will adjourn to Thursday, April 26<sup>th</sup>  
5 at 10:00 a.m.

6 (at 4:46 p.m., proceedings concluded)