

ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)
)
PROPOSED AMENDMENTS TO) No. R22-18
GROUNDWATER QUALITY)
35 ILL. ADM. CODE 620)

REPORT OF THE PROCEEDINGS held in the
above-entitled cause before Hearing Officer
VANESSA HORTON, taken by Raelene Stamm, CSR,
Certified Shorthand Reporter licensed by the State
of Illinois, 100 West Randolph Street, Chicago,
Illinois, on the 7th day of December, 2022,
commencing at the hour of 9:00 a.m.

Reported By: Raelene Stamm, CSR

License No.: 084-004445

1 APPEARANCES:

2
3 ILLINOIS POLLUTION CONTROL BOARD

4 MS. VANESSA HORTON, Hearing Officer

5 MS. BARBARA FLYNN CURRIE, Member

6 MS. CHLOE SALK, Attorney Advisor

7 MS. ESSENCE BROWN, Environmental Scientist

8 MR. ANAND RAO, Chief Environmental
9 Scientist

10
11 ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

12 MR. NICHOLAS KONDELIS, Attorney, via video

13 MS. STEFANIE DIERS, Attorney, via video

14
15 DYNEGY MIDWEST GENERATION/ 3M CORPORATION

16 MS. BINA JOSHI, Attorney

17 MR. DANIEL DEEB, Attorney

18
19 NATIONAL WASTE AND RECYCLING ASSOCIATION

20 MS. CLAIRE MANNING
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ALSO PRESENT:

- MS. SANDRA CAREY
- MS. MELINDA HAHN
- MS. LISA YOST
- MS. ROBYN PRUEITT
- MR. STEPHEN RISOTTO
- MR. THOMAS HILBERT
- MR. ERIC BALLENGER
- MR. NED BEECHER
- MR. RAY MCELHENY
- MS. SAM BILJAN

1 HEARING OFFICER HORTON: Good morning. It's
2 9 a.m. Welcome to this Illinois Pollution Control
3 Board hearing. My name is Vanessa Horton, and I am
4 the hearing officer for this rulemaking proceeding
5 entitled, In the Matter of Proposed Amendments to
6 Groundwater Quality, 35 Illinois, Administrative
7 Code 620. The board docket number for this
8 rulemaking is R22-18.

9 Also present today for the Board are Chair
10 of the Board, Barbara Flynn Currie, attorney
11 advisor to Member Gibson, Chloe Salk, Chief
12 Environmental Scientist Anand Rao, and
13 Environmental Scientist Essence Brown.

14 This hearing is governed by the Board's
15 procedural rules. All information that is relevant
16 and that is not repetitious or privileged will be
17 admitted into the record. Please bear in mind that
18 any questions posed today by the Board and its
19 staff are intended solely to help develop a clear
20 and complete record for the Board's decision and do
21 not reflect any decision on the proposal, testimony
22 or other questions.

23 For the sake of our court reporter, please
24 speak clearly and avoid speaking at the same time

1 as another person so that we can help produce a
2 clear transcript. If you are asking a question,
3 each time you do so please state your name and the
4 organization you represent prior to any questions
5 or statements today. Also, if talking about
6 sections of the rules, please spell out the section
7 letter such as 620 dot 101D as in dog. In
8 addition, please go slow when saying either the
9 full chemical name or its abbreviation.

10 Miss Court Reporter, please feel free to
11 stop me or anyone at any point if we are going too
12 fast, talking too softly or if you need something
13 repeated.

14 There is sign-in sheet at the door over
15 there for anyone who wants to sign up for public
16 comment. So if there are any members of the public
17 in person here today or in Springfield, please go
18 ahead and write your name on the list. As a
19 reminder, anyone can submit written public comments
20 on the Board's clerk's office online system. The
21 Board weighs oral and written public comments
22 equally.

23 One year ago today on December 7, 2021,
24 the Illinois Environmental Protection Agency

1 proposed the Board amend Part 620 of its
2 groundwater quality regulations. Our first hearing
3 was held on March 9, 2022. Our second was held on
4 June 21, 2022. This is our third hearing on
5 proposed rulemaking, and the focus of today's
6 hearing will be testimony from the participants'
7 witnesses.

8 Notice for this hearing was posted on
9 August 18 in both the Chicago Sun Times and The
10 State Journal-Register.

11 The Board received three sets of prefiled
12 questions from different participants, and in
13 addition, the Board filed its own set of prefiled
14 questions for today's witnesses.

15 As to the order of today's proceedings,
16 the order of witness testimony was decided at a
17 prehearing conference on September 19, but we have
18 two changes. So we'll call the following witnesses
19 in this order. First will be Sandra Carey on
20 screen from the UK, then Melinda Hahn, then Linda
21 Yost, then Robyn Prueitt, Stephen Risotto, Thomas
22 Hilbert, Eric Ballenger and Ned Beecher.

23 After being duly sworn in, witnesses will
24 be asked whether they would like to provide a short

1 summary of their testimony. Should they choose to
2 do so, that summary will be limited to 10 minutes.
3 Following any summary, I will ask those present
4 here if you have any follow-up questions for these
5 witnesses' written answers.

6 Should we finish with witness questioning
7 today, at the end of the hearing I'll ask if there
8 are any public comments from members of the public.

9 I anticipate taking a 10-minute break
10 around 10:30 a.m., and then breaking for an hour at
11 lunch from noon to 1:00, and another short
12 afternoon break around 3:00 p.m. We'll end today
13 at around 5:00 p.m. At that point we can discuss
14 where we are in the questions, and we'll come up
15 with a plan for tomorrow.

16 To begin, Miss Sandra Carey, I see that
17 you're on screen from the International Molybdenum
18 Association. And she filed a motion to be allowed
19 to participate in today's hearing via conference
20 call, so that motion was granted. When we start
21 with the witness testimony, I'll begin with you
22 first, Ms. Carey.

23 All right. So are there any questions
24 from anybody here in Springfield about the order of

1 today's proceedings?

2 All right. So as we go along, I'll be
3 entering witness testimony as exhibits as if read.
4 So we'll begin today -- we left our second hearing
5 on Exhibit 21, so today Exhibit 22 will be the
6 International Molybdenum Association's prefiled
7 testimony, and I'll also issue an updated exhibit
8 list at the end of this hearing.

9 (WHEREUPON, Exhibit No. 22 was
10 marked for identification.)

11 HEARING OFFICER HORTON: All right. So,
12 Ms. Carey, you are unmuted I see.

13 MS. CAREY: I am. Can you hear me?

14 HEARING OFFICER HORTON: Could the court
15 reporter please swear in this witness?

16 (WHEREUPON, the witness was
17 duly sworn.)

18 HEARING OFFICER HORTON: Ms. Carey, do you have
19 a summary of your testimony you would like to
20 present today? If not, that's fine.

21 MS. CAREY: I do have three, four minutes that
22 I would just like to take to give a summary, if
23 possible.

24 HEARING OFFICER HORTON: Wonderful. You can

1 begin.

2 MS. CAREY: Okay. So, first of all, thank you
3 for the opportunity to speak today, particularly
4 for the opportunity to participate via this Web Ex
5 conference call. It is much appreciated. With
6 respect to molybdenum, and we agree the accent is
7 moly, here at the International Molybdenum
8 Association we trust that all the detail of our
9 three written submissions will be taken into
10 account and given due consideration in this
11 Illinois rulemaking process.

12 Today I'd like to mention just four key
13 points. Firstly, much of our written submissions
14 are all aspects around the fact that the current
15 Illinois EPA assessment is based on the US IRIS
16 toxicology data set for molybdenum which hasn't
17 been updated in the last three decades, 30 years,
18 and is, therefore, wholly inadequate, outdated
19 basis for any accurate toxicity assessment now in
20 2022.

21 That's the newer outdatedness and the
22 EPA's Tier 1, 2, 3 data hierarchy rules, we assert
23 duly viewing through the lens of increasing
24 chemical management regulation globally in the

1 21st century, thanks to initiatives this has
2 generated swathes of more recent OECD protocol
3 compliant studies meaning studies conducted to
4 internationally agreed standards and protocols on
5 the whole matrix of human health endpoints.

6 These data sets are taken into account in
7 the publicly available US ATSDR Toxicological
8 Profile For Molybdenum published in 2020. Those
9 data are not in the 1992 IRIS data set.

10 The American Chemistry Council
11 representative today I understand will talk more
12 about EPA's Tier 1, 2, 3 system, so my remarks now
13 can please be considered also in the context that
14 they'll be sharing.

15 The next key point is the 2020 US ATSDR
16 moly tox profile is a government agency assessment.
17 That's very important. It's not an industry
18 assessment. It's a government agency one. ATSDR
19 minimal risk level values are screening values and
20 in themselves very precautionary. I give the
21 example that moly -- moly intermediate oral MRL
22 includes an uncertainty factor already of 300.
23 Also very relevant is the ATSDR profile state that
24 their MRLs can be as much as a hundred-fold lower

1 than the study no-observed-adverse-effect level.

2 You won't find that stated on Page 5 with the MRL
3 Table 1.1. It's somewhat buried on Page 152 in
4 Section A1, but it's there.

5 The next point is that in our November
6 written submission we highlighted that even the EPA
7 Office of Research and Development, the scientific
8 research arm of EPA which is responsible for IRIS,
9 explicitly publicly acknowledged its outdatedness
10 for many substances including moly by having added
11 in 2020 another data count to pointing IRIS towards
12 sources of more updated data.

13 So the final point I'd like to make is
14 about the human versus animal data hierarchy. The
15 key IRIS study for molybdenum is the 1961 Kovalsky
16 study based on human population intake of locally
17 grown molybdenum-rich vegetables in Armenia.

18 US ATSDR gives a good account of why it's a flawed
19 study, inadequate for regulation purposes, and so
20 I'm going to that. My point here is that Kovalsky
21 is not the only human study in existence nowadays.

22 There are several papers by the researcher
23 Judith Turland between 1995 to 1998, so again not
24 in the 1992 IRIS data set. Her research group

1 conducted studies in the USA using young male
2 volunteers dosing for 24 days up to 1,500
3 micrograms of moly a day concluding that number is
4 a safe level for molybdenum, which is after all a
5 vital central nutrient for human plants and
6 animals. And yet Illinois EPA are proposing just
7 19 micrograms for the groundwater ruling, the same
8 number as for silver which has a very different
9 toxicity profile and is not at all an essential
10 nutrient.

11 So taking these serious data access issues
12 into account or rather data nonaccess issues as
13 I've just outlined, our respectful petition to the
14 Illinois Pollution Control Board is to please defer
15 any ruling on molybdenum until such time as
16 Illinois EPA can undertake a toxicity assessment
17 about molybdenum that's not based on the IRIS
18 30-year outdated data set, especially when there is
19 a far more recent on-the-shelf assessment published
20 in 2020 already made by another US government
21 agency.

22 Thank you very much.

23 HEARING OFFICER HORTON: Thanks so much,
24 Ms. Carey.

1 Is there anyone here in Chicago who has a
2 follow-up question for Ms. Carey?

3 Anyone in Springfield with a follow-up
4 question for Ms. Carey?

5 MR. KONDELIS: Yes, Ms. Horton, we do.

6 HEARING OFFICER HORTON: Okay. If you could
7 state your name first for the court reporter.

8 MR. KONDELIS: Sure, Nick Kondelis,
9 K-o-n-d-e-l-i-s, attorney for Illinois EPA.

10 HEARING OFFICER HORTON: Go ahead.

11 BY MR. KONDELIS:

12 **Q. Miss Carey, you submitted some written**
13 **submissions in this case on or about November 22 of**
14 **2022; is that right?**

15 A. Yes. Correct.

16 **Q. Okay. I'm gonna draw your attention to**
17 **your first question on Page 1 of that document.**

18 **Are you familiar with that?**

19 A. Yes, I have it here.

20 **Q. Okay. And with regard to that first**
21 **question, does the United States EPA utilize the**
22 **IRIS molybdenum toxicity value when calculating**
23 **health-based screening levels through regional**
24 **screening levels?**

1 A. Are you asking me? We provided the
2 answer.

3 **Q. Yes. That's what I'm asking.**

4 A. When we gave the explanation about the
5 USEPA in its IRIS data set now having added this
6 additional table as an acknowledgment that the data
7 set that IRIS has is inadequate.

8 **Q. Well --**

9 A. I mean, you're asking me. I don't have --
10 I'm a bit reluctant because I'm not speaking for
11 USEPA. I'm speaking for IMOA.

12 **Q. Right, but my question is does the USEPA**
13 **use the IRIS molybdenum toxicity value when they**
14 **calculate health-based screening levels through**
15 **RSL?**

16 A. I believe that they do. I'm not overly
17 familiar with it, but I've looked at the RSL
18 levels, and they do -- they do have the IRIS data
19 in there.

20 **Q. Okay. That's my question.**

21 A. Okay.

22 **Q. Now, with regard to the second question in**
23 **your written submissions, do you see that question,**
24 **ma'am?**

1 A. Our toxicity values for the proposed PFAS
2 constituents available from USEPA Tier 1 or Tier 2
3 sources?

4 **Q. Correct.**

5 **Are the toxicity values for the proposed**
6 **PFAS constituents available from USEPA's Tier 1 or**
7 **Tier 2?**

8 A. Well, we're not focusing on PFAS, so I --
9 what is the relevance to molybdenum? You explain
10 to me.

11 **Q. Well, my question is with regard to the**
12 **PFAS constituents for USEPA Tier 1 or Tier 2.**

13 **Are those toxicity values in Tier 1 or**
14 **Tier 2? The answer is either yes or no.**

15 A. Well, you know the answer. You tell me.

16 **Q. I'm not the one testifying.**

17 HEARING OFFICER HORTON: This is Vanessa
18 Horton --

19 MS. CAREY: We're focused on molybdenum
20 substances.

21 HEARING OFFICER HORTON: You can you move on to
22 the next question, Mr. Kondelis.

23 MR. KONDELIS: All right.

24

1 BY MR. KONDELIS:

2 Q. With regard to your Question Number 3,
3 Ms. Carey, are you familiar with that?

4 A. Is it inhalation toxicity value RSC
5 available from the USEPA's Tier 1 or Tier 2
6 sources, yes.

7 Q. Okay. With regard to that question, was
8 the ATSDR inhalation reference concentration
9 selected because there was no inhalation toxicity
10 data available from USEPA Tier 1 or Tier 2 sources?

11 A. I believe so.

12 Q. Okay. Thank you.

13 With regard to Question Number 4 in your
14 written submissions, do you see that, ma'am?

15 A. Yes. Does USEPA consider the IRIS
16 reference dose to be an acceptable toxicity value
17 for calculating health-based screening levels, and
18 we replied that we can't, you know, respond on
19 behalf of the EPA.

20 Q. Do you know the answer to that question,
21 if you know?

22 A. I understand that IRIS uses the reference
23 dose, but it also acknowledges that it's 30 years
24 out of date.

1 MR. KONDELIS: That's all the questions I have
2 for Ms. Carey.

3 Thank you, ma'am.

4 MS. CAREY: Okay. Thank you very much.

5 HEARING OFFICER HORTON: Any further questions
6 here in Chicago?

7 Okay. Ms. Carey, thank you so much.
8 You're dismissed as a witness.

9 MS. CAREY: Okay. I can stay online for a
10 couple of hours until time difference means that
11 I'll need to drop off.

12 HEARING OFFICER HORTON: No problem. If you
13 just keep yourself muted, that'll be great.

14 MS. CAREY: Okay. I'll take myself off and
15 mute. Thank you very much.

16 (Witness excused.)

17 HEARING OFFICER HORTON: Okay. Our next
18 witness is Linda Hahn. Thank you. Have a seat
19 there. We'll see how it works with the court
20 reporter.

21 (WHEREUPON, the witness was
22 duly sworn.)

23 HEARING OFFICER HORTON: I will enter
24 Miss Hahn's prefiled written testimony as if read

1 as Exhibit 23.

2 (WHEREUPON, Exhibit No. 23 was
3 marked for identification.)

4 MS. JOSHI: Good morning. Bina Joshi on behalf
5 of the Dynegy parties. And if you don't mind, I
6 will do a screen share for Miss Hahn's slides.

7 HEARING OFFICER HORTON: Please go ahead.

8 Miss Hahn, do you have any prepared
9 summary of your testimony that you'd like to
10 present?

11 MS. HAHN: Yes, I do.

12 HEARING OFFICER HORTON: Okay. Go ahead.
13 You're limited to 10 minutes.

14 MS. HAHN: Thank you very much for the
15 opportunity to summarize my testimony here for you
16 today and answer questions. Just to give sort of a
17 brief overview of my comments before I even get
18 started on the slides, I wanted to let you know
19 that the two main points that I maintain is that
20 some of the proposed Class 1 groundwater standards,
21 in particular for cobalt and vanadium, are assessed
22 below typical background values for Illinois
23 groundwaters. Some Illinois --

24 HEARING OFFICER HORTON: Just one second. If

1 you could speak up just a little bit.

2 MS. HAHN: So the main points are that the
3 proposed groundwater standards for cobalt and
4 vanadium are below established background values
5 for certain Illinois groundwaters, also perhaps
6 below levels that laboratories can practically
7 quantify concentrations of cobalt and vanadium in
8 groundwater samples, and these issues have economic
9 and technical feasibility concerns.

10 So let me go to the slides so I can tell
11 you about my background and a little bit of my
12 perspective. I did undergraduate in --

13 (Reporter clarification.)

14 MS. HAHN: Background, I did my undergraduate
15 work in physics and math --

16 HEARING OFFICER HORTON: We're having trouble
17 hearing here, and I can tell the back is having
18 trouble. If you could --

19 THE WITNESS: Okay. I'll try.

20 So physics and math for undergraduate, and
21 environmental engineering for Ph.D. I've worked in
22 consulting for more than 25 years. My main focus
23 is site investigation, site remediation, statistics
24 of environmental data. And I've worked in many

1 different industries including industries related
2 to metals such as mining manufacturing and then
3 mineral processing.

4 And so my perspective here is as a person
5 who would investigate a site or who would remediate
6 a site and who would be a user of laboratory
7 services, not analytical chemist, but someone who
8 contracts with laboratories to get information
9 about my sites.

10 Before we get started on background, I
11 just wanted to discuss a little bit about the
12 methods of compliance with groundwater standards.
13 Groundwater samples are collected for metals
14 usually using the low flow techniques so that you
15 minimize the disturbance to the aquifer, and you
16 don't introduce additional solids which could
17 contain metals.

18 That procedure is particularly relevant
19 for inorganic analysis because if you get
20 additional solids into your groundwater samples
21 that aren't necessarily there within the aquifer or
22 would be transported within the aquifer, you can
23 overestimate the concentrations of inorganics in
24 your sample. So it's best to either collect a

1 very, very low flow sample or perhaps filter your
2 samples to remove excess solids from your samples.

3 For compliance purposes, the Illinois
4 Groundwater Protection Standards are compared to
5 unfiltered sample results, so total metals as
6 opposed to filtered metals. And total metals can
7 often have higher concentrations than a filtered
8 metal sample.

9 So one main point to make is that the
10 groundwater standards are enforceable standards, so
11 there's -- and that's irrespective of any
12 particular remediation program. And so from my
13 perspective if I have a sample that's above
14 standard, then I have to make a decision because
15 there's no requirement to remediate below
16 background, but I would have to make a
17 demonstration.

18 So there are certain actions, certain
19 costs associated with that condition of having
20 groundwater samples above a standard. So you would
21 have to demonstrate consistency with background
22 which involves insulation up to multiple wells,
23 multiple sampling, analysis, report preparation.
24 It can cost, you know, tens of thousands of dollars

1 for a property owner. Other potential actions are
2 remediation to the groundwater standards or
3 acceptance of a deed restriction which can reduce
4 property value.

5 Okay. So my concern is that with having
6 groundwater standards below background values as an
7 enforceable standard, that places the burden on the
8 regulated community on property owners to
9 demonstrate that that's not the case. And we have
10 data collected by US Geological Survey by parties
11 within the state of Illinois that show what the
12 natural background character and concentration of
13 metals in groundwater is, and we can use that
14 perhaps to calculate a background value that could
15 be used instead of the health-based value. Because
16 when the health-based value is less than
17 background, we don't remediate to that value. We
18 remediate to the background value.

19 So there is a similar process in Part 742
20 that IEPA used for soils, and that Part 742
21 provides the property owners, the applicants, with
22 background values for soils so that they can be
23 used when calculated health-based values are less
24 than background values. So that's what I'm

1 suggesting that the Board consider for groundwater
2 as well. To me it's an analogous situation.

3 So this is just an example, and the dots
4 are probably pretty hard to see for people. A
5 publication from the US Geological Survey of their
6 National Water Quality Assessment Program. The
7 purpose of that was to determine the character of
8 naturally occurring groundwater to assist local
9 municipalities, states, regions with management of
10 groundwater resources and decision-making regarding
11 groundwater resources.

12 And this line shows the concentrations of
13 cobalt above one microgram per liter across the
14 industry. So the yellow dots are samples that are
15 up above one microgram per liter. And just to
16 remind you, the proposed cobalt standard is
17 0.0012 milligrams per liter, so that's
18 1.2 micrograms per liter. So this graphic shows
19 that maybe 30 percent or so of the groundwater
20 samples collected in Illinois would exceed that
21 standard.

22 That publication that I took the graphic
23 from covered data through, I think, 2003, but the
24 USGS maintains a database of additional data. So I

1 downloaded that and calculated the percent of
2 groundwater samples that they're reporting above --
3 in Illinois above the proposed groundwater
4 standards for cobalt and vanadium. None of the
5 unfiltered sample results in the database had
6 detection limits below the proposed standards, so I
7 was unable to calculate a frequency of exceedances
8 for unfiltered samples. But for the filtered
9 samples, 24 percent of those groundwater samples in
10 the database exceeded the proposed Class 1
11 groundwater standard for cobalt and 55 percent of
12 those filtered groundwater samples exceeded the
13 proposed groundwater standard for vanadium which I
14 should mention was 0.00027 milligrams per liter, so
15 less than one microgram per liter or less than one
16 part per billion.

17 So what this means, you know, from a
18 30,000-foot viewpoint is that the proposed
19 standards would basically render many groundwaters
20 across a significant portion of Illinois to be
21 considered impacted or contaminated without further
22 action from property owners to prove otherwise.

23 So the second point is that the proposed
24 groundwater standards for cobalt and vanadium are

1 so low that to me based on my experience and based
2 on my discussions with the laboratory, I don't
3 believe we can confidently say that we can actually
4 detect those elements in groundwater at those
5 levels in order to determine compliance or to prove
6 compliance.

7 I've worked with a lot of metal site
8 across the state and in Indiana, and I very rarely
9 see detection limits above two micrograms per
10 liter. And we discussed laboratories. With
11 laboratories that Ramble works with and
12 laboratories I think we contacted expressed concern
13 that they couldn't meet reporting limits for method
14 detection limits in some instances for cobalt and
15 vanadium in groundwater samples as well. So it's
16 not determined that compliance determinations with
17 the proposed standards are technically feasible.

18 So in summary, what I'm -- what I suggest
19 to the Board is that they consider calculating some
20 form of background threshold value either for the
21 state as a whole or by regions. I think the
22 northern part of the state tends to have higher
23 metal concentrations in groundwaters or by
24 aquifers, that our aquifers probably have higher

1 concentrations of inorganics versus the upper end,
2 but something in order to avoid running afoul of
3 promulgating enforceable standards that are
4 naturally occurring and that are difficult to prove
5 compliance with.

6 Yeah. One final, final thought is that
7 since these are enforceable standards and they are
8 based on human health protection, we can look to
9 EPA in their promulgation of MCLs to consider how
10 it should be viewed. MCLs are health-based
11 standards, but they also take into consideration
12 cost and technical feasibility.

13 For example, arsenic has a health-based
14 level that's maybe a couple -- actually lower than
15 the actual MCL, but the MCL is promulgated because
16 of those costs and technical feasibility and
17 treatability issues. So that's what I'm suggesting
18 would be for cobalt and vanadium here.

19 HEARING OFFICER HORTON: Thank you.

20 Any questions here in Chicago? Follow-up
21 questions to Miss Hahn?

22 MR. RAO: I have one.

23 BY MR. RAO:

24 **Q. Good morning. I have a follow-up to the**

1 response that you had to the Board's Question
2 Number 1. I think you may have touched on this in
3 your summary, but you recommended that the Board
4 establish background concentrations for cobalt and
5 vanadium so that the burden on the regulated
6 community case of a site where they find a level
7 where the background of the standard can cause
8 problems for compliance.

9 Do you believe that it's better to have
10 that background established under the Board's TACO
11 rules rather than the groundwater standards?

12 A. Well, I believe that the Part 620
13 groundwater standards are enforceable standards
14 irrespective of a particular remediation program
15 like segregation program which TACO applies to or
16 CERCLA or RCRA. I'm not a lawyer, but I think that
17 those standards can be enforced outside of a
18 segregation program or --

19 Q. Yeah. I realize that enforceable
20 standards, but we do have a clause in the Part 620
21 standards that states if it's due to natural -- the
22 presence is because of the natural content of the
23 groundwater, then the standards won't apply. So
24 the context in which you view examples are usually

1 where a site remediation is going on, and they're
2 monitoring, and they would see these levels; and
3 that's where the burden falls on the regulated
4 entity to prove that it's background and not, you
5 know, the site causing the increase.

6 So if TACO has statewide backgrounds for
7 these constituents, then it becomes very easy when
8 it comes to, you know, making a determination
9 whether a site is causing the exceedance or new to
10 the background where it doesn't fall on the
11 regulated entities.

12 So my question was whether that should be
13 addressed in TACO rather than in groundwater
14 because these groundwater standards are supposed to
15 be health-based, especially the Class 1 standards,
16 and it doesn't make sense to have standards based
17 on background rather than health-based numbers.

18 A. Yeah, I understand your point. I think it
19 would be helpful if the background information
20 could be available at the same time that the
21 enforceable standards are promulgated; otherwise,
22 there will be a gap, and regulated parties will
23 have to spend the money to make those site specific
24 determinations.

1 MR. RAO: Thank you for the clarification.

2 MS. HAHN: Thank you.

3 HEARING OFFICER HORTON: Any questions in
4 Springfield for Miss Hahn?

5 MR. KONDELIS: Yes, Miss Horton.

6 HEARING OFFICER HORTON: Go ahead.

7 MR. KONDELIS: Thank you.

8 BY MR. KONDELIS:

9 Q. Good morning, Dr. Hahn.

10 A. Good morning.

11 Q. With regard to your testimony earlier
12 today, you talked about groundwater standards and
13 remediation and with regard to those groundwater
14 standards, aren't those for protection of public
15 health instead of remediation?

16 A. Yes. I understand the basis of the
17 Class 1 standard is protection of public health.

18 Q. Okay.

19 A. But --

20 Q. And are background concentrations --

21 MS. JOSHI: The witness wasn't finished
22 answering the question.

23 MR. KONDELIS: Oh, okay.

24 MS. HAHN: I'm sorry. Yes. I understand the

1 basis of the calculation of the Class 1 groundwater
2 standards is protection of human health; but as I
3 mentioned before, remediation or responses to those
4 types of situations never address contamination
5 below background. Its background is unavoidable
6 essentially. So to me it doesn't make sense to
7 promulgate standards that are known to be below
8 existing background concentrations.

9 BY MR. KONDELIS:

10 **Q. Well, speaking of background**
11 **concentrations, are background concentrations a**
12 **factor in setting Section 620 potable resource**
13 **standards for groundwater?**

14 MS. JOSHI: Objection to the extent it calls
15 for a legal conclusion.

16 HEARING OFFICER HORTON: You can answer.

17 MS. HAHN: Okay. Yeah. I'm not familiar
18 with -- I understand they're health-based, but
19 beyond that, I don't believe that background is
20 necessarily a factor in the calculation.

21 BY MR. KONDELIS:

22 **Q. Okay. Thank you.**

23 **I'm gonna turn your attention now to**
24 **answers to questions that you filed on or about**

1 **October 27, 2022.**

2 **Do you recall that, ma'am?**

3 A. Yes.

4 **Q. With regard to Questions 23 and 24, and**
5 **you touched on some of this in your remarks earlier**
6 **today, but do all areas of the state have the same**
7 **levels of background concentrations of**
8 **contaminants?**

9 A. I didn't look at the background data set
10 with respect to the spacial distribution.

11 (Reporter clarification.)

12 MS. HAHN: Can you please repeat your question?

13 BY MR. KONDELIS:

14 **Q. I said with regard to contaminants, do all**
15 **areas of the state have the same levels of**
16 **background concentration of contaminants?**

17 A. I think for all environmental data for all
18 media, groundwater and soil, there's natural
19 variability in the concentrations that you would
20 observe from area to area or time to time. So
21 those -- that variability needs to be taken into
22 account when you assess a background threshold
23 value.

24 **Q. So the answer to my question is no; is**

1 **that correct?**

2 A. I didn't look at spatial variability in
3 the background data, no.

4 **Q. Okay. Now, with regard to your**
5 **Question 28 in your answers that you filed, does**
6 **CERCLA and the other cleanup programs require**
7 **background concentrations on a site specific basis?**

8 A. No, I don't believe CERCLA requires
9 background assessment. They require remediation to
10 health-based levels when those health-based levels
11 are above background or remediation -- when those
12 health -- or remediation to background levels when
13 the calculated health-based levels are below
14 background concentrations.

15 **Q. And with regard to your Question**
16 **Number 30, do you see that, ma'am?**

17 A. Yes.

18 **Q. Okay. Were the samples analyzed?**

19 **With regard to that question, was that**
20 **analysis for total or dissolved solids?**

21 A. In the USGS report that I referenced,
22 those --

23 **Q. Yes.**

24 A. The USGS data were based on filtered

1 samples. I'm talking about --

2 Q. Do you know if those filtered samples were
3 total or dissolved?

4 A. Filtered samples are generally considered
5 to be representative of dissolved concentrations.

6 Q. Okay. Now in Question 31, in your answer
7 you talked about two laboratories, Pace Analytical
8 and Tech Lab, Inc.; is that correct?

9 A. Yes.

10 Q. What methods did you discuss with these
11 two laboratories when they mentioned that they
12 would have difficulty meeting the proposed
13 standards?

14 A. They mentioned EPA 20.8 and 1640. I
15 believe both of those methods are ICP-MS, that's
16 inductively coupled plasma mass spectrometry; and
17 those are, to my understanding, you know, the
18 current state-of-the-art methods to analyze trace
19 inorganics in water samples. And I believe those
20 are the methods that are incorporated by reference
21 in 620.

22 Q. But with regard to total metals, aren't --
23 isn't the total metal analysis used for
24 health-based samples?

1 A. I'm sorry. I'm not sure I understand your
2 question.

3 **Q. Well, for a health-based sample or a**
4 **health-based standard, isn't it appropriate to use**
5 **total metals as opposed to dissolved?**

6 A. Well, I think I might have had some
7 testimony in response to a Board question on this
8 matter. We collect groundwater samples for
9 different purposes. And if we're collecting a
10 sample from a private well that's used directly for
11 consumption, I think it makes sense to run a total
12 metals analysis.

13 If we're collecting a groundwater sample
14 for the purpose of determining whether the
15 groundwater is impacted above background or
16 groundwater standards, then it might make sense to
17 collect the filtered groundwater sample cause that
18 is believed to be more representative of the metals
19 that are actually mobile in the aquifer.

20 **Q. With regard to Question 15 in your**
21 **answers, that's specifically with regard to low**
22 **flow sampling, is the low flow sampling that you**
23 **discuss there the least destructive method of**
24 **sample collection in groundwater?**

1 A. Well, it's definitely considered to be a
2 method that reduces the turbidity of your grown
3 sample.

4 MR. KONDELIS: I have nothing further of
5 Dr. Hahn. Thanks, Miss Horton.

6 HEARING OFFICER HORTON: Thank you. Any
7 follow-up questions here in Chicago?

8 All right. Miss Hahn, you're dismissed.

9 THE WITNESS: Thank you.

10 (Witness excused.)

11 HEARING OFFICER HORTON: Next is Lisa Yost.

12 (WHEREUPON, the witness was
13 duly sworn.)

14 HEARING OFFICER HORTON: I'll enter in
15 Ms. Yost's prefiled testimony as Exhibit 24 as of
16 read.

17 (WHEREUPON, Exhibit No. 24 was
18 marked for identification.)

19 HEARING OFFICER HORTON: And would you like to
20 give a summary of your testimony?

21 MS. YOST: I do have a brief summary. Thank
22 you.

23 HEARING OFFICER HORTON: You'll be limited to
24 10 minutes.

1 MS. YOST: Okay. Thank you.

2 I appreciate the opportunity to speak
3 today. I will be addressing my comments to the
4 proposed standards for selenium, flourine and
5 molybdenum. But first I'd like to just briefly
6 overview my background.

7 I'm a board-certified toxicologist. I
8 graduated from the University of Michigan in 1980.
9 After graduating undergraduate in botany, I -- my
10 work in public health and human health risk
11 assessment has focused in large part on exposure
12 pathways related to food which are relevant here.
13 I also have had a number of situations where I've
14 delved deep into the toxicology supporting toxicity
15 values for various chemicals.

16 Next slide please. So -- oh, we're not
17 there yet.

18 HEARING OFFICER HORTON: There might be a lag.

19 MS. YOST: Should I plunge on or wait?

20 HEARING OFFICER HORTON: Yeah, I think so.
21 It'll catch up.

22 MS. YOST: So since everyone has the -- many
23 have the slides in hand already. So first
24 considering the proposed Class 1 and Class 2

1 standard of 0.02 milligrams per liter for selenium,
2 it's based on protection of forage crops irrigated
3 with groundwater. That standard in turn is cited
4 to a USEPA reference.

5 I believe that USEPA reference is not
6 representative of Illinois agriculture based on my
7 research. It has two basis. The first is the 0.02
8 has two bases in EPA 72. The first is for
9 continuous irrigation which Illinois EPA and I
10 agree don't occur in Illinois. The second is for
11 use on fine-grained or alkaline soils. And while
12 there are certain fine-grained soils, the soil in
13 Illinois is predominantly acidic or neutral.

14 And also in describing this standard in
15 the application to fine-grained alkaline soil, the
16 72 reference notes some uncertainty in the value
17 stating until greater information is obtained; and
18 as far as I know, I have not found anything that
19 indicates that that value has been updated by EPA.

20 Then thinking about what these 1972
21 reference relied on in setting up that standard,
22 it's a brief summary. It's really just, you know,
23 a half a column in their lengthy book. And the
24 locations that they cite in their references are

1 unlike Illinois agriculture, Oregon, Wyoming, New
2 Zealand and Denmark, and of course just small areas
3 within each of those geographies, with a focus on
4 range plants, so arid alkaline environments.

5 Illinois agricultural resources that I
6 reviewed instead -- instead of finding any
7 indication of a concern about selenium in Illinois
8 forage crops, I did see a number of references
9 indicating the need for supplementation of food for
10 animals.

11 Given those considerations, I would ask
12 the Board to consider maintaining the current
13 Class 1 and Class 2 standard of 0.05 milligrams per
14 liter for selenium which is consistent with the
15 MCL. It also is consistent with the livestock
16 watering recommendation in EPA 72 reference that
17 was relied on by IEPA.

18 The next slide, please. So thinking then
19 about fluoride, the proposed Class 1 and Class 2
20 standards for a two milligram per liter for
21 fluoride are based on tooth mottling in livestock
22 that would drink groundwater. This is a cosmetic
23 dental effect in livestock.

24 In the EPA 72 reference relied on, it

1 notes the cosmetic nature and also notes that, I've
2 kind of highlighted there, at least a
3 several-fold increase in concentration is required
4 to produce other injurious effects. So
5 underscoring that the endpoint they're looking at
6 is tooth mottling, not actual harm beyond that.

7 Modification of this standard to address a
8 cosmetic endpoint in livestock is -- to my mind
9 doesn't provide adequate benefit. I would ask that
10 the Board consider maintaining the current
11 4 million gram per liter Class 1 and Class 2
12 values. They're protective. They're consistent
13 with the enforceable MCL, and it would also be
14 protective of livestock health.

15 So considering molybdenum, and some of my
16 points we heard from Miss Carey here previously,
17 there are of course two standards for molybdenum.
18 The Class 1 standard I noted after filing this that
19 I had a stray extra zero. So the standard is of
20 course 0.019. That extra zero should not be there.
21 And it's based on the USEPA Integrated Risk
22 Information System or IRIS, I-R-I-S, 1992 toxicity
23 value which in turn what relied on a study in
24 people in Armenia by Kovalsky which was conducted

1 in 1961. It was a small study, and there are
2 issues identified in several subsequent analyses in
3 the ways that the controls were selected. For
4 example, there were only five controls for the
5 52 people. It wasn't clear they matched on the
6 relevant things that would need to be matched on to
7 make it a valid epidemiologic study, and there were
8 questions about the way key measurements were made
9 including the measurements of copper.

10 More current analyses including the Agency
11 For Toxic Substances and Disease Registry, or ATSDR
12 2020, and the European Chemical Agency, or ECHA,
13 analyses both rejected the Kovalsky, et al., study.
14 They also, as Miss Carey noted, evaluated
15 subsequent epidemiological evidence which is always
16 what they do. They look at all the relevant data,
17 the human health and animal data, in identifying
18 and filtering down to the best science. They then
19 relied on a study in rats by Murray, et al.

20 I have a table there that shows the
21 resulting health-based value which would come from
22 the use of either the USEPA RFT based on the
23 Kovalsky study and again the errant zero that
24 should be 0.019, and then if the ATSDR MRL were

1 instead used.

2 And the reason that I feel the use of the
3 ATSDR MRL, even though it's an intermediate value
4 would be appropriate here is that other evaluations
5 within the ECHA and in other locations based on the
6 National Toxicology Program Study in 1997, which
7 was a two-year study, they found no further effects
8 following chronic exposure as compared to the
9 13-week study.

10 So if that value from ATSDR were instead
11 applied, the resulting health-based value would be
12 0.2. I believe that would be a protective human
13 health-based standard. I understand that there's a
14 groundwater molybdenum standard of 0.1 in other
15 regulatory context, and the Board may wish to make
16 those two parallel and make those the same
17 standard.

18 The next slide, please.

19 So I'll go on. The molybdenum Class 2
20 standard as proposed is 0.05. This would be a new
21 standard, and like selenium it would be based on
22 protection of animals foraging on crops irrigated
23 with groundwater. I have similar concerns about
24 the basis for that standard. The studies used as a

1 basis which again come from the USEPA 1972 report
2 are not representative of Illinois agriculture.

3 Molybdenum toxicity occurs primarily in
4 the western United States due to naturally
5 occurring levels in soil and soil characteristics.
6 Molybdenum is much more readily absorbed in
7 alkaline soils, and alkaline soils are the minority
8 in Illinois. Illinois soils instead tend to be
9 mildly acidic or neutral, and in contrast the
10 higher salinity, highly mineralized soils and soils
11 with a higher PH are more common in western United
12 States.

13 So considering this available evidence
14 doesn't suggest the need for a standard to protect
15 against this endpoint in Illinois, and as
16 Miss Carey noted, of course molybdenum is also an
17 essential micronutrient for plants, animals people.

18 If a Class 2 standard for molybdenum is
19 viewed as essential, it should be set no lower than
20 the 0.1 standard consistent with other groundwater
21 regulatory context in Illinois, and you can see
22 there the -- you know better than I the location,
23 but that's what I had.

24 Thank you.

1 HEARING OFFICER HORTON: Okay. Great. Any
2 follow-up questions for Ms. Yost here in Chicago?

3 Any follow-up questions -- sorry, I think
4 I muted Springfield. Any follow-up questions from
5 Springfield for Ms. Yost?

6 MR. KONDELIS: Yes, I do have a few questions
7 for Dr. Yost.

8 BY MR. KONDELIS:

9 Q. Dr. Yost, you talked about Illinois soils
10 being primarily acidic in your remarks earlier
11 today; is that correct?

12 A. Neutral to acidic primarily, yes. And I'm
13 sorry to correct you. I don't have a Ph.D., so
14 just to be accurate. It's Ms. Yost. Thank you.

15 Q. Oh, okay.

16 A. Yeah. Hate to give it back, but . . .

17 Q. With regard to the data that you reviewed
18 to come to that conclusion, what was it that made
19 you come to that particular conclusion?

20 A. Yes. As I noted in the response to my --
21 some of the questions and also in my testimony, my
22 analysis was not exhaustive, but I did find, I
23 thought, a thorough summary of the soil types in
24 Illinois.

1 Let's see here, find that reference.
2 Yeah. It was a 2021 Illinois State Water Survey,
3 and it provided maps, and then it also provides a
4 verbal summary of those maps. I've summarized that
5 on Page 8 of my testimony.

6 **Q. Where is that on Page 8, ma'am?**

7 A. So under Section -- it's in the lower
8 quarter of the page. There's an indent with a
9 quote. It's after 2.2.2. I can read it, if that's
10 helpful.

11 **Q. Sure. Go ahead.**

12 **(Short interruption.)**

13 HEARING OFFICER HORTON: We'll pause. We're
14 having fire alarm in here.

15 (WHEREUPON, a short recess was
16 taken.)

17 HEARING OFFICER HORTON: We're back on the
18 record. I think we'll continue on.

19 I think we were left on Page 8 of your
20 testimony; is that correct?

21 MS. YOST: Yes. I guess we're not fleeing.

22 So on Page 8 under Section 2.2.2, I say,
23 exhaustive analysis of soils in Illinois is beyond
24 the scope of this expert report. However, data

1 reviewed indicate many agricultural soils in
2 Illinois have particle sizes that are relatively
3 fine textured, citing there that 2020 -- well, also
4 the fact that it's drummer silty loam, but the
5 soils are not predominantly neutral or alkaline.

6 Illinois State Water Survey 2021 provides
7 maps of soil types in Illinois indicating much of
8 the agricultural land is silty and states the
9 following regarding Illinois soils. Agricultural
10 soils in Illinois tend to acidify to PH values more
11 acidic than 6.5. This acidity is managed by adding
12 lime, carbonates of calcium and magnesium. Average
13 soil PH values vary from mildly alkaline to
14 strongly acid in extreme southern Illinois.

15 MR. KONDELIS: That's all I have. Thank you.

16 MS. YOST: Thank you.

17 HEARING OFFICER HORTON: Any further follow-up
18 questions in Chicago?

19 You're dismissed, Ms. Yost. Thank you.

20 MS. YOST: Thank you.

21 (Witness excused.)

22 HEARING OFFICER HORTON: Next is Robyn Prueitt.

23 Miss Prueitt, your refiled testimony will
24 be entered into the record as if read, and it will

1 be Exhibit 25.

2 (WHEREUPON, Exhibit No. 25 was
3 marked for identification.)

4 HEARING OFFICER HORTON: Court reporter, would
5 you please swear in the witness?

6 MR. DEEB: One clarification, does
7 Exhibit 25 -- Dan Deeb, counsel for 3M. Does
8 Exhibit 25 also include the exhibits that were
9 filed yesterday and Dr. Prueitt's responses to the
10 prefiled questions?

11 HEARING OFFICER HORTON: No. This would be
12 just the prefiled testimony. So if you would like
13 to enter those into the record, we certainly can.

14 MR. DEEB: I would, please.

15 HEARING OFFICER HORTON: Exhibit 26 will be the
16 exhibits from yesterday.

17 MR. DEEB: The answers, please.

18 HEARING OFFICER HORTON: The answers. So
19 Miss Prueitt's responses will be Exhibit 26.

20 (WHEREUPON, Exhibit No. 26 was
21 marked for identification.)

22 HEARING OFFICER HORTON: Exhibit 27?

23 MR. DEEB: Would be the exhibits that were
24 filed yesterday.

1 HEARING OFFICER HORTON: Yesterday's exhibits.

2 (WHEREUPON, Exhibit No. 27 was
3 marked for identification.)

4 MR. DEEB: Thank you.

5 HEARING OFFICER HORTON: No problem.

6 (WHEREUPON, the witness was
7 duly sworn.)

8 HEARING OFFICER HORTON: Okay. Miss Prueitt,
9 do you have a summary of your testimony you'd like
10 to give today?

11 MS. PRUEITT: Yes, I do.

12 HEARING OFFICER HORTON: Okay. You'll be
13 limited to 10 minutes.

14 THE WITNESS: Okay. Thank you for the
15 opportunity to speak here today. My name is
16 Dr. Robyn Prueitt. I'm a board-certified
17 toxicologist, and I've been consulting in the areas
18 of human health risk assessment and toxicology for
19 15 years.

20 My testimony focuses on the IEPA's use of
21 an inappropriate and unsound methodology to develop
22 proposed groundwater standards for six different
23 per- and polyfluoroalkyl substances or PFAS,
24 P-F-A-S, specifically with respect to the agency's

1 selection of toxicity values used in the
2 development of the proposed PFAS standards. State
3 and federal agencies should follow established
4 human health risk assessment practices in
5 developing toxicity values for use in the
6 derivation of regulatory standards such as
7 groundwater standards.

8 I understand that the Board has copies --
9 hard copies of my slides. So as shown on Slide 3,
10 these practices include reviewing all available
11 evidence to assess the weight of the evidence for a
12 substance to cause health effects, evaluating the
13 exposure levels at which those health effects are
14 observed, and choosing the adverse health effect at
15 the lowest tested exposure level from reliable
16 studies as a basis for driving the toxicity value.

17 IEPA did not follow these established
18 human health risk assessment practices in
19 developing the toxicity values for use in deriving
20 the proposed PFAS standards currently at issue.
21 Instead, IEPA followed its own process of choosing
22 toxicity values developed by other agencies using a
23 rigid hierarchy and failing to critically evaluate
24 the toxicity evidence underlying the selected

1 toxicity values.

2 To the extent that IEPA wishes to rely on
3 toxicity values derived by other agencies, IEPA
4 should first conduct an independent evaluation of
5 the scientific rigor and appropriateness of the
6 available toxicity values to ensure that the most
7 scientifically supported toxicity values are chosen
8 as the bases for the proposed PFAS groundwater
9 standards.

10 IEPA has not done that. Their failure to
11 engage in such an evaluation resulted in proposed
12 PFAS standards that are technically infeasible.
13 They're overly conservative, unreliable and
14 inappropriate as enforceable groundwater standards.

15 On Slide 4, the toxicity values for the
16 six PFAS compounds were rigidly selected by IEPA
17 according to the USEPA screening level hierarchy
18 which provides a listing of several sources of
19 toxicity values in a preferred order. This
20 hierarchy is not intended to be used for choosing a
21 toxicity value as the basis for an enforceable
22 groundwater standard, and it's not appropriate to
23 use it for this purpose. Without a careful
24 evaluation of the available toxicity values to

1 ensure that standard practices were used in their
2 derivation and that the values are based on
3 appropriate health endpoints.

4 In fact, USEPA specifically states in its
5 own guidance that users of the screening level
6 hierarchy are to carefully review the bases for the
7 toxicity values. Rather, USEPA's hierarchy is
8 intended for use in selecting toxicity values for
9 the derivation of regional screening levels, or
10 RSLs, which are generic screening levels for the
11 initial evaluation of contaminated sites that are
12 used to determine when -- which substances detected
13 at a site warrant further investigation. RSLs are
14 not intended to be legally enforceable standards,
15 but instead are guidance values used for screening
16 purposes.

17 IEPA did not properly consider whether the
18 hierarchy it used is appropriate to use and, if so,
19 how it is applied. A critical review of all
20 available toxicity values would be most appropriate
21 if IEPA does not intend to follow established human
22 health risk assessment practices to derive its own
23 toxicity values. Instead, the process that IEPA
24 has used to select toxicity values until it's

1 blindly following what other agencies have done and
2 ignoring any issues related to the underlying
3 studies and the methods used to derive the toxicity
4 values or the appropriateness of their use in the
5 development of legally binding groundwater
6 standards.

7 Earlier this year in prefiled answers to
8 questions about the toxicity values that IEPA chose
9 to use for developing its proposed standards, IEPA
10 simply directed the public commenters to the
11 specific agencies that derived the toxicity values
12 rather than evaluating the issues with toxicity
13 values that were brought up. By doing so, IEPA
14 assumed no responsibilities for ensuring that the
15 toxicity values it chose are based on sound science
16 and appropriate methodologies.

17 IEPA is not required to adhere to the
18 USEPA screening level hierarchy so strictly. In
19 fact, IEPA seemed to concede that it can deviate
20 from the hierarchy when it stated in its prefiled
21 that the agency prefers toxicity values to be based
22 on the most recent data. IEPA stated that it chose
23 the ATSDR minimal risk level or MRL for PFOS,
24 P-F-O-S, because ATSDR relies on more recent

1 toxicity studies than the USEPA Office of Water's
2 PFOS toxicity value derived in 2016. Just because
3 a study is published somewhat more recently,
4 however, does not necessarily mean it is more
5 scientifically sound or a better choice for an
6 endpoint on which to derive a toxicity value.

7 With regard to Slide 5, in addition, IEPA
8 did not critically evaluate the options within the
9 USEPA screening level hierarchy to determine
10 whether there could be more appropriate toxicity
11 values for a specific substance lower in the
12 hierarchy. The hierarchy was updated earlier this
13 year to include USEPA Office of Water toxicity
14 values immediately after the ATSDR MRLs and before
15 the California OEHHA, O-E-H-H-A, toxicity values.

16 By choosing the ATSDR MRLs solely because
17 it's one or two places higher in the hierarchy than
18 other available toxicity values without evaluating
19 the science behind it and comparing it to other
20 toxicity values, IEPA has not undertaken the
21 scientific diligence required to select the most
22 appropriate value.

23 Moreover, there are multiple reasons why
24 selecting ATSDR's MRLs for PFAS are the basis

1 for -- as the basis for IEPA's groundwater
2 standards was scientifically inappropriate
3 including the ATSDR only considered studies with
4 animal strains that had pharmacokinetic model
5 parameters available for predicting serum
6 concentrations of PFAS in the animals from the
7 administered PFAS doses.

8 This approach limits the number of studies
9 and endpoints available for consideration as a
10 basis for the MRLs, and the possibility exists that
11 some of the studies that were not considered could
12 have evaluated more scientifically supportive and
13 relevant endpoints than the studies that used
14 rodent strains with pharmacokinetic parameters.

15 Some of the studies not considered by
16 ATSDR actually measured serum PFAS concentrations
17 in the animals eliminating the need for estimation
18 of serum concentrations using pharmacokinetic
19 modeling altogether. And other agencies, such as
20 USEPA, do not limit the studies considered as the
21 basis for PFAS toxicity values to those using
22 animal strains for which pharmacokinetic parameters
23 are available.

24 In calculating the proposed PFAS standards

1 based on noncancer effects, IEPA incorporated a
2 default relative source contribution, or RSC, of
3 20 percent and stated that the data on PFAS
4 exposure are insufficient to deviate from this
5 default value. The default 20 percent RSC value
6 for the six PFAS is not scientifically supportive
7 and is overly stringent. A higher and less
8 stringent RSC value can be determined and used if
9 information on exposure to this specific chemical
10 of interest is known which is the case for most of
11 the six PFAS. Several other states including
12 Michigan and Minnesota have used this methodology
13 to estimate higher RSC values for several PFAS.

14 There are many issues with the available
15 toxicity values chosen by IEPA for the six PFAS as
16 outlined in my prefiled testimony, and the process
17 that IEPA has followed in selecting toxicity values
18 does not allow for the evaluation of these issues.
19 If IEPA wants to ensure that it has chosen the most
20 scientifically supported toxicity values as the
21 bases for its proposed PFAS groundwater standards,
22 it should not blindly follow the USEPA's screening
23 level hierarchy to choose toxicity values and
24 should instead conduct an independent evaluation of

1 the scientific rigor and appropriateness of each
2 toxicity value.

3 Thank you.

4 HEARING OFFICER HORTON: Okay. Any follow-up
5 questions to Dr. Prueitt here in Chicago?

6 MR. RAO: I have a couple.

7 HEARING OFFICER HORTON: Okay, Mr. Rao.

8 BY MR. RAO:

9 Q. Good morning.

10 A. Good morning.

11 Q. I have a question regarding your response
12 to Question Number 7. Basically you have raised
13 several issues concerning IEPA's selection of
14 toxicity values, and you talk about several studies
15 that they could have considered. I want to know if
16 you have any specific recommendations about
17 alternative toxicity values that may be considered
18 for the proposed PFAS and, if so, if you can
19 supplement with supporting documentation into the
20 record.

21 A. So I was engaged to discuss the merits of
22 the IEPA's proposal here and not to specifically
23 identify or choose a toxicity value. So I have not
24 done that type of analysis to recommend -- to

1 choose a value to recommend to the Board.

2 Q. Okay. Also in response to Board's
3 Question 9A regarding PFOS, you state that value of
4 0.4 milligrams per kilogram per day is more
5 scientifically supported no-observed-adverse-effect
6 level, or NOEL, than the value used by IEPA, the
7 ATSDR value of 08.1 milligram per kilogram per day.

8 Are you aware of any other states or USEPA
9 that relied on the NOEL of 0.4 milligram per
10 kilogram per day to derive standards of guidance
11 level for PFOS?

12 A. Again, I'm not aware. I haven't evaluated
13 all of the various values since that was not what I
14 was engaged to do here.

15 MR. RAO: Thank you. That's all I have.

16 HEARING OFFICER HORTON: Thank you.

17 In Springfield, any follow-up questions
18 for Dr. Prueitt?

19 MR. KONDELIS: Yes, Miss Horton.

20 HEARING OFFICER HORTON: Okay. Go ahead.

21 MR. KONDELIS: Thank you.

22 BY MR. KONDELIS:

23 Q. Dr. Prueitt, earlier in your testimony
24 today you mentioned several times that IEPA quote,

1 **unquote, blindly follows the practices of other**
2 **agencies; is that right?**

3 A. I stated that they blindly followed the
4 USEPA's screening level hierarchy.

5 **Q. Okay. So are you saying today that the**
6 **United States EPA's basis for selecting toxicity**
7 **values is not an acceptable practice?**

8 A. I'm here to only talk about the merits of
9 IEPA's process. So what EPA -- what the USEPA does
10 is not relevant here. Their practice of using the
11 hierarchy was developed by USEPA for use
12 specifically in identifying toxicity values for
13 regional screening levels, and that's not what
14 we're talking about here.

15 **Q. Are regional screening levels health-based**
16 **screening levels?**

17 A. Regional screening levels are health-based
18 values, but they are simply guidance values used
19 for screening purposes, and they are not legally
20 enforceable standards like the IEPA's proposed
21 groundwater standards.

22 **Q. Are you aware that Illinois EPA has relied**
23 **on the United States EPA's toxicity hierarchy since**
24 **2008?**

1 A. I'm not aware of when IEPA started relying
2 on this hierarchy, but that -- regardless of that
3 it's still inappropriate to use the hierarchy to
4 identify toxicity value without evaluating the
5 scientific rigor and appropriateness of the values.

6 **Q. Okay. And those concerns you're talking**
7 **about today, did you submit them to ATSDR at any**
8 **point?**

9 A. I was not engaged to provide comments to
10 ATSDR at that time.

11 **Q. Do you know if the ATSDR toxicity values,**
12 **were those values peer reviewed; and were there**
13 **opportunities for public comment for those values,**
14 **if you know?**

15 A. I do know that the process for ATSDR's
16 MRLs does include a peer review and a public
17 comment period, so -- but that does not mean that
18 all of the peer-reviewed comments or the public
19 comments were incorporated into the final
20 evaluation.

21 **Q. Are those peer-reviewed -- the**
22 **peer-reviewed data and the public comments, if you**
23 **know, is ATSDR required to use those in formulating**
24 **their toxicity assessment, if you know?**

1 MR. DEEB: Objection as to the extent it's
2 calling for a legal conclusion as to an ATSDR
3 requirement. Are you referring to a scientific
4 methodology or a legal requirement?

5 MR. KONDELIS: I'm referring to the processes
6 that ATSDR uses.

7 BY MR. KONDELIS:

8 **Q. Are they required to follow the public**
9 **comments?**

10 A. I know that they are to consider them, but
11 I have never seen any documentation that they are
12 required to incorporate every public comment into
13 their final evaluation because they may not agree
14 with it or there may be other reasons why they
15 don't wish to do that.

16 **Q. Well, if ATSDR doesn't incorporate public**
17 **comments into their toxicity assessments, does that**
18 **mean they don't agree with those public comments**
19 **necessarily?**

20 A. I don't know the answer to that. I don't
21 know what the -- what ATSDR's thoughts are about
22 that on any given evaluation. So I can't answer
23 that.

24 **Q. But if ATSDR agrees with those public**

1 **comments, does that automatically mean they get**
2 **incorporated into the promulgation of the toxicity**
3 **values?**

4 A. Again, I don't know their thought process
5 and their specific protocols for that, so I can't
6 answer that.

7 MR. KONDELIS: I have nothing further of
8 Dr. Prueitt.

9 HEARING OFFICER HORTON: Okay. Any further
10 follow-up questions here in Chicago?

11 All right. You're dismissed. Thank you.

12 MS. PRUEITT: Thank you.

13 (Witness excused.)

14 HEARING OFFICER HORTON: Right now we're at
15 10:22. We can start with Mr. Risotto, and then
16 we'll break at around 10:30.

17 Mr. Risotto, if you're ready.

18 MR. RISOTTO: Good morning. I always hate to
19 be just before somebody's break, but I'll try and
20 be efficient.

21 MR. RAO: Take all the time you want.

22 MR. RISOTTO: Okay. Thank you.

23 HEARING OFFICER HORTON: Let's just get
24 started. So first I will enter your prefiled

1 testimony as if read into the record as Exhibit 28.

2 (WHEREUPON, Exhibit No. 28 was
3 marked for identification.)

4 HEARING OFFICER HORTON: Miss Court Reporter,
5 if you could swear in the witness.

6 (WHEREUPON, the witness was
7 duly sworn.)

8 HEARING OFFICER HORTON: Do you have a summary
9 that you'd like to --

10 MR. RISOTTO: Yes, I do.

11 HEARING OFFICER HORTON: Okay.

12 MR. RISOTTO: And hopefully -- we provided
13 slides earlier this week. Hopefully you have them,
14 but I think I can share them as well. You're
15 testing my -- here we are. Let's do that. Look at
16 that, fabulous. All right.

17 So ACC has provided a wealth of
18 information in this process. So on the specifics
19 of the proposed standards for various substances,
20 particularly the polyfluoroalkyl substances. So I
21 won't dig into that. What I'd like to do is step
22 back and talk about the hierarchy that Dr. Prueitt
23 mentioned and that has been discussed several times
24 in these proceedings.

1 So sort of going back to that hierarchy
2 which is -- it dates back to the late 1990s, but
3 the EPA's Superfund office updated in 2003. It
4 sets three tiers of toxicity values -- of existing
5 toxicity values. As we've heard, Tier 1 is USEPA's
6 IRIS numbers. Tier 2 are provisional toxicity
7 values developed by the Superfund office when
8 there's need for a value, and there isn't an IRIS
9 value. And then Tier 3 is sort of other toxicity
10 values.

11 And the 2003 guidance talks about --
12 mentions, too, the AR3, ATSDR as we've talked
13 about, California EPA, and then a USEPA assessment
14 process or database that hasn't been updated since
15 the late '90s so is no longer kind of relevant in
16 this context. But it also says equally of value
17 are other values that have been peer reviewed,
18 available to the public, and transparent.

19 So within that Tier 3, at least according
20 to EPA's guidance, there isn't a hierarchy that
21 ATSDR is ahead of anybody else that -- or behind
22 anyone else that is, you know, that should be a
23 consideration of all the available values that meet
24 these criteria.

1 Now sort of going back to the original
2 guidance from USEPA, I'm sorry, in 1993, they
3 recognize, first of all, a couple things Superfund.
4 First, IRIS as has been mentioned are health-based
5 values. They are used as target levels for cleanup
6 at contaminated sites, Superfund sites. They are
7 not necessarily the value that is achieved. There
8 is a site specific value based on the IRIS value,
9 but that takes into considerations the --
10 consideration the parameters of that individual
11 site. That may include the feasibility. You know,
12 can we get to that health-based level. If you
13 can't get there, then it doesn't make sense to set
14 it below achievable level. There may be other
15 characteristics we heard about, background levels,
16 et cetera. It just may not be possible to get to
17 that IRIS value from practical level.

18 The other thing is the Superfund office
19 indicated that these IRIS values will, you know,
20 have a shelf life. If you look at the IRIS
21 database, you'll see that many of the values has
22 been as we discussed date back to the 1990s. And
23 it's not necessarily that older is worse.
24 Certainly, you know, at my age, you know, I think

1 we get better with age, but there is the
2 possibility of getting new information available
3 that needs to be considered. So and they recognize
4 this, and this guidance says that, you know, it's
5 not the only source of data. You know, you should
6 look at more recent, credible, relevant data and
7 use your best scientific judgment in their
8 guidance.

9 So that's sort of the point that
10 Dr. Prueitt was trying to make and that we at ACC
11 make is that, yes, IRIS is a good place to start;
12 but you want to look beyond that to see is there
13 more recent data available that should be taken
14 into consideration, and you've heard at least one
15 or two examples where that is the case.

16 Now, you know, relevant to that issue for
17 the Tier 2 values, and this was drawn from IEPA
18 testimony back in 2008 when they established that
19 when they sort of recognized the hierarchy, they
20 said, hey, you know, EPA retires these toxicity
21 values after a certain period of time. EPA
22 recognizes that these values have a shelf life. So
23 what do we do with this value if EPA has said it's
24 no longer relevant, and you can see they decided to

1 continue using it even though EPA says, you know,
2 it probably needs to be updated. IEPA has said,
3 well, we're gonna continue to use it until there's
4 another value. So there is a shelf life to these
5 values, and, you know, as more information becomes
6 available as it often does, it needs to be
7 incorporated.

8 Now on to Tier 3, again, this is sort of
9 any other values that have met those criteria, peer
10 reviewed, transparent and open for stakeholder
11 input, you know, EPA recognized. EPA doesn't
12 provide any guidance on which one to use. So we're
13 gonna use the lowest value which from a
14 precautionary point of view is maybe entirely
15 appropriate, but it doesn't necessarily say it's
16 the best science. It says it's the lowest. And
17 that to our mind has been identified is not
18 necessarily the best public policy to incorporate.

19 So I kind of shift now to the values that
20 have been established and, you know, that we've
21 talked a bit I think at previous hearings on the
22 feasibility of, you know, where the methodology can
23 get us in terms of detection levels. We are now
24 down to the part per trillion level. I can

1 remember when part per million was pretty -- seemed
2 pretty low. We're down, what, you know, several,
3 you know, orders of magnitude below that.

4 And, you know, I call your attention --
5 and I'm not an expert on detection methods, and
6 even if I was, I wouldn't expect you to believe me.
7 So I wanted to pull out this slide from Federal EPA
8 talking about health advisories that they -- that
9 they issued earlier this year relative to four of
10 the PFAS that are included in the IEPA proposal.
11 And, you know, I want to talk about the column on
12 the right, the column in the middle, the health
13 advisory -- the actual health advisory level.

14 I could bore you with hours as to why we
15 disagree with those numbers, but I want to focus on
16 the right side which is -- and this was presented
17 to water utilities back this summer saying these
18 are the minimum reporting levels that -- for these
19 substances, for PFOA and PFOS, four parts per
20 trillion.

21 Now, you'll know note that the proposed
22 groundwater standard for PFOA is in the Illinois
23 EPA proposal is two. So they are going below what
24 the level that EPA is suggesting is the minimum,

1 that reporting level. And we can talk to exactly
2 what that means. In the case of PFOS, the proposed
3 standard is seven. We're at four. So you're
4 getting to the point where you're getting very
5 close to what EPA feels is a reliable minimal level
6 for reporting.

7 And that's all. I'm happy to answer any
8 questions.

9 HEARING OFFICER HORTON: Okay. And then sorry
10 to cut you off, but we'll take our break now, and
11 then we'll start up with questions after a
12 10-minute break. So we'll be back here at 10:43.

13 (WHEREUPON, a short recess was
14 taken.)

15 HEARING OFFICER HORTON: Okay. We're back on
16 the record.

17 Just before we begin Mr. Risotto,
18 Miss Joshi has asked to enter some exhibits into
19 the records.

20 MS. JOSHI: So, yeah, Bina Joshi on behalf of
21 the Dynegy parties. First, I'd just like to
22 request that the prefiled responses of Melinda Hahn
23 and Lisa Yost be entered into the record as
24 exhibits which I believe would be Exhibits 29 and

1 30, if I have that correct.

2 HEARING OFFICER HORTON: Yes, so prefiled
3 response of Miss Hahn will be 29, and prefiled
4 response of Ms. Yost will be 30.

5 (WHEREUPON, Exhibit Nos. 29 and
6 30 were marked for
7 identification.)

8 MS. JOSHI: Thank you. And then also assuming
9 if there are no objections, we'd like to request to
10 file a corrected version of Ms. Yost's exhibit from
11 today which was filed as Dynegy's Exhibit B to this
12 third hearing, simply making a correction to the
13 typo that she referenced on the one slide during
14 her testimony today.

15 HEARING OFFICER HORTON: That's fine.

16 MS. JOSHI: Thank you.

17 HEARING OFFICER HORTON: Okay. We'll move on
18 to questions to Mr. Risotto. Any questions here in
19 Chicago?

20 MS. BROWN: Yes.

21 HEARING OFFICER HORTON: Miss Brown.

22 BY MS. BROWN:

23 **Q. To Board Question Number 40, please**
24 **comment on wether MRLs for other PFAS constituents**

1 should also be based on daily exposure to the
2 pregnant female to protect children between the age
3 of zero to six years. If so, do you have any
4 recommendations of daily exposure values for
5 pregnant females that could be considered for the
6 proposed PFAS constituents?

7 A. Yes. And I'd have to go back and look at
8 the specifics, but several of the standards are
9 based on laboratory animal studies, reports of
10 developmental effects, effects of sort of in utero
11 exposure. In those cases the relevant exposures to
12 the -- is to the dam, to the pregnant female, and
13 should be -- that should be used as the basis for
14 exposure. EPA's exposure handbook, which was I
15 think updated in 2019, has a value for a pregnant
16 female, and I think we provided it in our prefile
17 in our response to questions, but we can certainly
18 get that to you if necessary.

19 Q. Okay. And with respect to Question 40A,
20 in your response you indicate it would be more
21 appropriate to develop MRLs for PFOS and --

22 (Reporter clarification.)

23
24 BY MS. BROWN:

1 **Q. Based on daily exposure to the pregnant**
2 **female rather than exposure to the child after**
3 **birth, are you aware of any studies for PFOS and**
4 **PFNA relating to daily exposure to pregnant females**
5 **that could be used to derived MRLs to protect**
6 **children between the ages of zero to six?**

7 A. Well, there are a number -- certainly for
8 PFOS there is a wealth of information. I suspect
9 it's not the case with PFNA, but with PFOS there is
10 a wealth of information that it looked at in utero
11 as well as sort of lactational exposures. But
12 those have not been selected as the key study for
13 the basis of the value. So there are data
14 available, but again they are not the relevant
15 health endpoint that is being used to set the
16 standard. So it depends a bit on what endpoint
17 you're focusing on.

18 **Q. Can you clarify? So are you saying**
19 **like -- never mind. I think I understand.**

20 A. Okay.

21 MR. RAO: Can I follow up?

22 MR. RISOTTO: Sure.

23 BY MR. RAO:

24 **Q. You said it depends on the endpoint --**

1 A. Right.

2 **Q. -- being considered, are you aware of any**
3 **other states which have specific endpoints that you**
4 **think are scientifically supportive?**

5 A. Yeah. You asked that question of
6 Dr. Prueitt, so I've prepared my answer. I would
7 say sort of -- you know, and I think it's reflected
8 in our testimony. We don't think that the data are
9 sufficient for two of these substances, PFNA and
10 PFHxS, to make -- to set an appropriate value.

11 If you look at the values that have been
12 set, in many cases it's, you know, let's just set
13 one standard for a whole bunch of substances. In
14 other cases it includes a lot of uncertainty
15 factors cause there's a significant amount of
16 information that's not available. So it's not
17 clear to us that there's enough data for those two
18 substances to set a value.

19 For the other substances, you know, and
20 we've sort of indicated I think in our testimony
21 which studies we think are better, you know, better
22 support of value. I couldn't give you, you know,
23 the specific number. You know, it would depend
24 again on what you -- how you then interpret that

1 value in terms of drinking water standard, but we
2 think there are studies for the other substances
3 that should be used but have not gone to the point
4 of saying this is the value you should use.

5 And I think that's -- I think we've
6 reflected that in our comments in terms of which
7 one -- which studies we think are better supported
8 or, you know, more appropriate for looking at human
9 health effects.

10 Q. I also had a question regarding one of the
11 slides that you had.

12 A. Yes.

13 Q. It's the summary of the four PFAS --

14 A. Yes.

15 Q. -- advisories.

16 And you testified that some of the
17 proposed standards are about a minimum reporting
18 level.

19 A. Right.

20 Q. So my question is, are you recommending
21 that the standards be set at the reporting level or
22 when it comes to enforcement of the standard we
23 consider the reporting level?

24 A. When it comes to -- I would say that the

1 value, the proposed standard which, you know, is
2 sort of an enforceable standard should not be set
3 lower than the reporting level cause you're not
4 gonna get a reliable value, a reliable measurement.
5 Whether they should be set at the reporting level
6 or not is, I guess, ultimately the decision of
7 IEPA; but when it comes to sort of enforcing at the
8 individual site, it's got to depend on the local
9 parameters.

10 If you can't achieve a level based on
11 those, you know, those health advisors at EPA has
12 proposed for PFOA and PFAS, we can't get to those
13 numbers. Those are way below the technology. So
14 clearly they could not be set. Those are more
15 aspirational values. So it depends on the
16 specifics of the site in terms of what the most
17 appropriate value is using whatever that standard
18 is as the target, if that makes sense.

19 MR. RAO: Thank you. That's all I have.

20 HEARING OFFICER HORTON: Okay. Any questions
21 to Mr. Risotto from Springfield.

22 MR. KONDELIS: Yes, Ms. Horton.

23 HEARING OFFICER HORTON: Go ahead.

24 MR. KONDELIS: Thank you.

1 BY MR. KONDELIS:

2 Q. Mr. Risotto, you filed some prefilled
3 answers to both Board questions and Illinois EPA
4 questions in connection with this case; is that
5 right?

6 A. Yes, I did.

7 Q. Okay. I'm gonna direct your attention to
8 Page 4 of your filing, Question 2.

9 Do you see that, sir?

10 A. Give me a sec. I will get there. Page 4,
11 okay, I'm there.

12 Q. The question was, are products containing
13 PFOA, PFOS or other PFAS present in homes and
14 businesses in Illinois that allow for exposure to
15 PFAS?

16 A. Yes.

17 Q. Is that right?

18 A. That's the question.

19 Q. Correct.

20 And your answer states, quote, in part for
21 the six PFAS for which IEPA has proposed
22 groundwater standards, exposure and product present
23 in homes and businesses is likely to be minimal,
24 unquote.

1 **Is that what you wrote?**

2 A. Yes.

3 **Q. What is your basis for that conclusion?**

4 **What data did you rely on?**

5 A. Okay. So for four of the substances,
6 PFOA, PFOS, PFHxS and PFNA, none of those four have
7 been manufactured in the US, Europe or Japan for at
8 least a decade. So they are no longer in
9 manufacture, available for use in products.

10 For a fifth substance, the HFPO-DA, it is
11 used as a processing aid in the production of
12 fluoropolymers. It is not used in the production
13 of consumer or commercial products.

14 The sixth substance, PFBS, there is the
15 possibility of that being used in consumer and
16 commercial products, but our understanding is that
17 for the most part the market has moved away from
18 the use of that product.

19 **Q. Okay. So goods and products that come in**
20 **from China, for example, which you haven't**
21 **mentioned, are not subject to these regulations,**
22 **are not part of your discussion, right?**

23 A. EP -- Federal EPA has issued a number of
24 significant new use rules that preclude the import

1 of substances or products containing. The most
2 recently in 2020 which should shut the door on any
3 import of these legacy materials, those first four
4 I mentioned, in products into the US. You know,
5 we -- you know, I cannot guarantee that nothing is
6 getting into the US containing these products, but
7 EPA has tried to make it really hard to do that.

8 **Q. Okay. But that being the case, according**
9 **to your testimony, that doesn't apply to any goods**
10 **manufactured, for example, in China and then coming**
11 **to the United States before the date of -- you**
12 **mentioned 2020; is that right?**

13 A. That's a possibility. I have no, you
14 know, specific knowledge.

15 **Q. But 2020 was the year you mentioned?**

16 A. 2020 is when the most recent significant
17 new -- the most recent prohibition was put in
18 place. I think the original prohibition dates back
19 to the early 2000s. So they have been shutting the
20 door on these substances on a regular basis for the
21 last 20 years.

22 **Q. Now, with regard to Method 533 and 537.1?**

23 A. Right.

24 **Q. Are there differences in reporting levels**

1 **there?**

2 A. Yes, there are. Actually, and I've
3 included it in -- we included it in our response to
4 comments. The values that are presented in the
5 methods themselves are the LCMRL, the lowest
6 concentration minimum reporting limit, which EPA
7 says is not a minimum reporting limit. It is
8 essentially a prediction of what the minimum
9 reporting level is. So at least within the methods
10 themselves, they do not indicate what the actual
11 minimum reporting level is, which is why we
12 presented what EPA presented to the water utilities
13 back this summer.

14 **Q. Can the 537.1 minimum reporting levels be**
15 **met? Can they be achieved?**

16 A. Which -- what -- the LCMRL, is that what
17 you're referring to? Cause I don't know what the
18 minimum reporting levels are -- what EPA says they
19 are for 537.1. I only know what they have said is
20 the -- will be used for their data collection for
21 UCMR5.

22 **Q. Can they meet the two mammogram standard?**

23 A. Using what method?

24 **Q. The 537.1.**

1 A. There is -- again, they indicate the LCMRL
2 which they specifically say is not the minimum
3 reporting level. So I do not know what labs can
4 meet, but EPA has said we do not expect labs to
5 meet below four in a reporting level.

6 **Q. USEPA says that?**

7 A. USEPA says that on the slide that I
8 presented, yes.

9 **Q. And were those comments from USEPA, was**
10 **that for method 533 or 537.1?**

11 A. They are -- for this data collection
12 that'll start next year, they are recommending use
13 of method 533. So, now, I do want to point out
14 that both 533 and 537.1 are for finished drinking
15 water, not for groundwater. The EPA method for
16 groundwater 1633 is still draft. We have submitted
17 a number of comments expressing concerns, so it's
18 not -- it's not clear that these levels are
19 appropriate for groundwater. They are being used
20 for finished drinking water.

21 **Q. But 537.1 is appropriate for potable**
22 **groundwater, right?**

23 A. The sampling occurs out of the tap, as I
24 understand it, or out of the source once it has

1 come to the -- to the blending facility. I don't
2 think it means pulling it out of the ground and
3 sampling it.

4 **Q. Does that happen, pulling it out of the**
5 **ground and do sampling using 537.1?**

6 A. I honestly do not know. I'm not an expert
7 on the sampling method. I just know what I've read
8 about how these methods are used.

9 **Q. Are you aware that Illinois EPA has, in**
10 **fact, used groundwater sampling using method 537.1?**

11 A. I am not aware of that you have, but I
12 will say there are lots of adaptations of these
13 methods being done by laboratories throughout the
14 country. That doesn't mean the results are
15 reliable. We strongly urge all laboratories to use
16 EPA validated methods. An adaptation of one of
17 these methods is not validated by EPA.

18 **Q. 537.1 is a validated method, however,**
19 **correct?**

20 A. Yes, it is. But the collection of the
21 samples, how those samples are stored and treated
22 is also part of the validation method that is not
23 included in 537.1 for sampling of groundwater.

24 MR. KONDELIS: I have nothing else. Thank you.

1 HEARING OFFICER HORTON: Okay. Any further
2 follow-up questions here in Chicago?

3 All right. Thank you, Mr. Risotto.
4 You're dismissed.

5 MR. RISOTTO: Thank you.

6 (Witness excused.)

7 HEARING OFFICER HORTON: Mr. Thomas Hilbert.

8 MS. MANNING: May we have both of them sit
9 here?

10 HEARING OFFICER HORTON: Yes. We've got both
11 Mr. Thomas Hilbert and Eric Ballenger. I will
12 enter Mr. Hilbert's prefiled testimony as
13 Exhibit 31 as if read.

14 (WHEREUPON, Exhibit No. 31 was
15 marked for identification.)

16 HEARING OFFICER HORTON: And then
17 Mr. Ballenger's will be 32.

18 (WHEREUPON, Exhibit No. 32 was
19 marked for identification.)

20 MS. MANNING: Good morning Claire Manning for
21 the NWRA. If we could, Mr. Hilbert was gonna give
22 a short statement, then Mr. Ballenger a short
23 statement, and then both of them open up to
24 questions.

1 HEARING OFFICER HORTON: Sounds great.

2 MS. MANNING: Thank you.

3 HEARING OFFICER HORTON: Miss Court Reporter,
4 will you please swear in both witnesses.

5 (WHEREUPON, the witness was
6 duly sworn.)

7 HEARING OFFICER HORTON: All right.

8 MR. HILBERT: Thank you. Good morning,
9 everybody. My name is Tom Hilbert, and I don't
10 know what else I need to say in the way of
11 introductions. So I'm just gonna hop right in.

12 The primary concern that we have with the
13 proposed groundwater standards is really limited to
14 the extremely low maximum contaminant levels for
15 PFAS constituents. I'm gonna use the word PFAS.
16 We all heard the various different PFAS compounds
17 described. It really has to do with the
18 feasibility and economic impact reviews that may or
19 may not have been done.

20 So with respect to feasibility, I think we
21 just heard a pretty good testimony from
22 Mr. Risotto. There currently is not -- I'm not
23 aware that there is a USEPA approved laboratory
24 method that can reliably detect PFAS at the levels

1 proposed. The only USEPA approved method for
2 nondrinking water, which I understand might be
3 method 8327 -- -

4 (Reporter clarification.)

5 MR. HILBERT: Okay. Sorry. I may actually at
6 some point default because I've got a medical issue
7 with the back of my throat, and it's struggling a
8 little bit to speak.

9 But there's a method 8327 which is
10 specifically a method for nondrinking water
11 standards, but that has reporting limit well above
12 the proposed MCLs in the proposed 620 standards.
13 So we have concern about whether or not the methods
14 will allow us to test at the levels proposed.

15 We also have concerns that the impact on
16 municipal landfills' compliance with the regulatory
17 code remains unknown. We believe that very few, if
18 any, landfills will be able to pass required
19 groundwater impact assessment, which is a
20 performance assessment on landfill designs, without
21 expensive and unnecessary design standards or
22 costly contingent remediation plans.

23 We have discussed the resolutions to this
24 concern with the Illinois EPA, but they're not

1 finalized and would likely require a rulemaking to
2 change the 811 rules. So that remains in our
3 opinion a concern on whether or not landfills would
4 even be able to comply with the proposed standards
5 as they are currently proposed.

6 We've heard this in testimony earlier
7 today. There is no reliable data on background
8 concentrations in shallow groundwater. The
9 Illinois EPA did test community water supplies
10 throughout the state, many of which rely on
11 groundwater, but they're typically served by deep
12 wells isolated from surface impacts such as PFAS.
13 So there's a risk that significant areas of the
14 state groundwater may not be compliant with the
15 proposed standards.

16 There will be interrelated liability
17 concerns between essential services such as
18 landfills and wastewater treatment plants that have
19 not been considered. PFAS is in landfill leachate.
20 I think we can accept that as a given. There's
21 been a lot of studies testing for PFAS in landfill
22 leachate. We know it exists.

23 But we also know that landfills actually
24 sequester a significant amount of the PFAS that is

1 present in the waste stream received by the
2 landfill and very little of it ends up in the
3 leachate, but it's still present in the leachate.
4 In fact, we know, and you're gonna hear this from
5 Mr. Ballenger, wastewater treatment plants have
6 already begun to refuse land leachates in Illinois.
7 So, I mean, it remains a significant concern.

8 The wastewater treatment biosolid land
9 application program poses a liability concern that
10 will cause wastewater treatment plants to let the
11 landfill disposal as a safer alternative than land
12 application. Landfills have limits on the amount
13 of biosolids that they can accept relative to other
14 dryer waste materials and may choose to refuse
15 PFAS-containing material like biosolids to reduce
16 leachate concentrations. More consideration needs
17 to be given to how the proposed standards will
18 impact the relationship between landfills and other
19 essential services.

20 With respect to economic impacts, there
21 really was no reliable study of the economic
22 impacts of the proposed standards for PFAS. It's
23 clear that there are real and significant economic
24 impacts associated with the proposed standards. I

1 will let my testimony speak to the details of that.

2 The cost of leachate management will
3 impose a significant burden on landfills that could
4 result in significant compliance issues, lack of
5 time to develop an alternative leachate disposal.
6 So if the groundwater standards are proposed today
7 and we're forced into doing some type of leachate
8 treatment, that takes time, takes design studies,
9 takes time to build it, takes time to permit it;
10 and that really hasn't been considered with the
11 proposed standards.

12 The cost of complying or inability to
13 comply with the regulatory requirements have not
14 been assessed. GIA, groundwater impact assessment
15 failures in the immediate groundwater compliance
16 concerns remain undefined. The cost of replacing
17 groundwater monitoring -- and all of this, by the
18 way, is with respect to economic impacts. The cost
19 of replacing groundwater monitoring equipment in
20 wells is not defined. Although a lesser concern,
21 it is still important to the industry to have an
22 understanding of statewide economic impact of the
23 additional monitoring cost for adding PFAS at the
24 proposed maximum contaminant levels, in particular,

1 the cost of remonitoring resulting from failure to
2 meet the proposed maximum contaminant level in the
3 lab reporting limit.

4 So it's not uncommon when you're testing
5 for compounds at the very lower level of laboratory
6 reporting limit to have lab results that just can't
7 meet that limit, and so all of a sudden you've got
8 a report that says this is the lowest we can have
9 it or we can report on it, which is above the
10 groundwater quality standard. That's gonna cause
11 us to remonitor.

12 The economic impacts to businesses and
13 government in Illinois could be significant and
14 justify a comprehensive and planned approach to
15 understanding the impacts to all the various
16 affected entities. We should avoid a hasty
17 imposition of standards at such extremely low
18 levels with classic compounds that is with us in
19 all aspects of our life to the point where the
20 geometric mean, not the average, the geometric mean
21 of blood concentration of the US population in 2018
22 was approaching a thousand-fold higher than the
23 proposed PFOS concentration we're looking at for
24 groundwater.

1 So, in closing, we appreciate and we do
2 support the Illinois EPA towards the goal of
3 developing groundwater quality standards for PFAS;
4 however, we would suggest that the most appropriate
5 starting point would be develop an MCL for drinking
6 water until the impacts of regulating groundwater
7 quality at the levels proposed have undergone
8 further review.

9 Therefore, we would ask the Board not to
10 act on the proposed rulemaking until more
11 information is available and presented for further
12 review.

13 HEARING OFFICER HORTON: Okay. Thank you,
14 Mr. Hilbert. And then we have Mr. Ballenger.

15 MR. BALLENGER: Yeah. Good morning. My name
16 is Eric Ballenger, and I'm a senior hydrogeologist
17 with Republic Services which was previously Allied
18 Waste, have been working in the industry for over
19 25 years. In fact, I think back in 1996, that's
20 when I started, was about the time the Board had
21 adopted its new landfill regulations in 814. A lot
22 of my responsibilities include environmental
23 compliance with highlighting groundwater with
24 closed, operating facilities in the state, as well

1 as some Superfund facilities. I have multistate
2 responsibilities, but I would say a majority of my
3 work has been done in the state of Illinois.

4 Like Tom, I'm speaking on behalf of my
5 company on NWRA's PFAS committee. There are --
6 while those of us on the committee work for the
7 five major waste companies operating in Illinois,
8 we may have different corporate structure
9 philosophies, but we are all aligned on our
10 position in this rulemaking. My colleagues and I
11 respect both the IEPA and the Board, and we have
12 worked with them on many different situations and
13 for many years. We understand what the -- what
14 your roles are. We understand our responsibilities
15 to effectively monitor our landfills, and we
16 understand that PFAS is going to be one of the
17 concerns and one of the things we will need to
18 monitor.

19 Our concern here is that the IEPA is
20 moving too fast and putting together these
21 extremely conservative limits without having a full
22 understanding of how it affects the industry's
23 ability to effectively monitor our landfills. We
24 are used to monitoring in the parts per million and

1 parts per billion. We've never yet gone to the
2 parts per trillion. And especially with the
3 ubiquitous nature of PFAS which has been identified
4 not only in groundwater in soils, in many products
5 that we have used throughout our lifetime and even
6 in some instances rainwater, there is a concern
7 that we have not identified what background
8 concentrations are even in landfills or even in
9 shallow soils, shallow groundwater, like Tom has
10 identified.

11 We believe that this is a game changer on
12 how we will be able to effectively monitor our
13 facilities. It needs to be understood that a lot
14 of the products that are currently used or have
15 been used to monitor landfills including pumps,
16 Teflon tubing, even ball check valves and pumps for
17 groundwater wells and leachate wells, also how labs
18 have products potentially in their laboratories
19 that will have PFAS in them, this could very much
20 effect how we monitor what our background levels
21 would be.

22 So those are all big concerns of ours, and
23 I just want to say I appreciate what the Board is
24 doing today, and I'll certainly try to answer any

1 follow-up questions.

2 HEARING OFFICER HORTON: Thanks very much.

3 Any follow-up questions for these two
4 witnesses here in Chicago?

5 MR. RAO: Yes.

6 HEARING OFFICER HORTON: Okay. Mr. Rao.

7 BY MR. RAO:

8 Q. I have a few questions for both
9 Mr. Hilbert and Ballenger.

10 Mr. Hilbert, in response to Board's
11 Question Number 32A, we had asked about whether the
12 proposed PFAS standards applied to landfills. You
13 had indicated that you think that under Part 811
14 the proposed Class 1 PFAS standards would apply to
15 landfills. And my question is under the landfill
16 rule under Section 811, 320A, the landfills are
17 subject to a background standard and not Part 620
18 standards.

19 Could you clarify why you think Class 1
20 PFAS standards that have been proposed by EPA would
21 apply to landfills?

22 A. Well, I think there's references within
23 Part 811 of the regulatory code that specifically
24 point to testing for compounds that are expected to

1 be in leachate; and, therefore, if they are present
2 in leachate, we would then have to develop a
3 background standard within our groundwater
4 monitoring program for that compound.

5 You know, I've heard questions from you.
6 I think relate to -- it's a good question. You
7 know, if our groundwater monitoring standard is
8 really a background standard and not necessarily a
9 Part 620 MCL, you know, what's the concern. Well,
10 the concern is that it's not always easily defined.
11 You know, so if you have a background standard and,
12 say, it's above the 620 standard. I'll just use 10
13 as a number. And it shows up in a downgradient
14 monitoring well, there's always a question on
15 whether or not it's attributable to the landfill.

16 **Q. That's the whole purpose of the background**
17 **standard, right?**

18 A. Yeah.

19 **Q. To establish background, and it takes a**
20 **backseat to background standard?**

21 A. Yeah.

22 **Q. Then the landfill is responsible, right?**

23 A. Yeah, but groundwater quality by its
24 nature is pretty variable. You know, and even for

1 impacts from manmade substances, you can see quite
2 a variation in concentration levels within a pretty
3 small geographic area. And so it's good to have
4 background standard, but it isn't always -- it's
5 not the be all and end all of defining groundwater
6 quality.

7 We have a lot of problems with going into
8 assessment monitoring for our downgradient wells
9 because the groundwater characteristics at that
10 location are different than the groundwater
11 characteristics in the wells for which we've
12 developed background standards for.

13 **Q. But my question was, is it an automatic if**
14 **the agency's proposed standards that are opted by**
15 **the Board, that would become applicable to**
16 **landfills?**

17 A. Yeah. I think the simple answer is yes.
18 If by adding --

19 **Q. Can you explain the basis?**

20 A. -- PFAS to 620 standards, it will be
21 applicable to landfills.

22 (Reporter clarification.)

23 BY MR. RAO:

24 **Q. Can you explain the basis for that,**

1 **please?**

2 A. The basis for my saying yes?

3 **Q. Yeah.**

4 A. I'm gonna go to 32B. You know, and the
5 answer wasn't quite as emphatic as a yes; but in
6 there I stated it's unclear whether the presence of
7 PFAS in leachate would automatically trigger
8 groundwater monitoring based on the presence of
9 PFAS. 35-811.319(a)2A is a regulatory code linking
10 groundwater monitoring to the presence of a
11 constituent leachate, but that particular reference
12 only applies to inorganic constituents.

13 However, 811.319(a)3A requires organics
14 monitoring to include constituents listed in
15 40 CFR 141.4, which if you look is unregulated
16 contaminant rule, and PFAS are listed within --
17 currently listed within 408 CFR 141.4.

18 **Q. The specific provision that you are**
19 **referring to, in the Board rules it's limited to**
20 **only 51 organic chemicals that were listed in the**
21 **unregulated rule way back when the Board allowed**
22 **the standards. So under the current rules the PFAS**
23 **is not part of the 51 chemicals. So unless the**
24 **Board opens up the landfill regulations to amend**

1 the rules, PFAS will not be part of the list of 51
2 chemicals.

3 So do you think, you know, PFAS would
4 become applicable to landfills only if the Board
5 opens up Part 811 to amend those rules?

6 MR. RAO: I don't know if this kind of touches
7 on legal language, but, Miss Manning, if you want
8 to get back to us on it.

9 MR. HILBERT: Ultimately the answer to that
10 question relies on the Illinois EPA because they
11 have some discretionary jurisdiction on how they
12 apply, you know, whether or not something gets
13 written into a permit in the groundwater monitoring
14 program.

15 And I'm gonna ask Eric to help me out here
16 in backing this up because I believe he's a little
17 bit more familiar with that than I am. But at a
18 minimum it's my understanding if it's present in
19 the leachate, and we expect it to be in the
20 leachate, we would have to monitor it in the
21 leachate; and, therefore, we would have to
22 establish a background quality standard for it.
23 And whether or not we have to monitor it for it on
24 a routine basis, I don't think I can answer that

1 question today.

2 MS. MANNING: And since you invited me to make
3 a response, Mr. Rao, I will. I would suggest that
4 legally the concern is that as soon as these
5 standards are put into the Part 620 standards, that
6 they will ultimately become part of the landfills
7 permit and permit obligations as enforceable
8 standards. And that's their concern because
9 they -- you know, they just think that, you know,
10 as enforceable standards they are uncertain that
11 they could even meet those standards at the levels
12 that are being proposed. And I think that's the
13 concern that they have.

14 And I did ask a question to the agency in
15 one of the hearings as to whether that was their
16 intention, and my understanding was the answer was
17 yes, that that was their intention. They were
18 going to put these into landfill permits as
19 enforceable standards. And I know that Eric may
20 have some information on this as well.

21 MR. BALLENGER: Yeah, and on top of that, it's
22 not -- we also have a concern obviously with the
23 pre-Subtitle D facilities under the 807 rules. And
24 it is my understanding that once PFAS is added,

1 that will have to be added to groundwater
2 monitoring programs for the pre-Subtitle D
3 facilities. And that is even potentially more of a
4 concern because of the age of the facilities, also
5 the age and the type of pumping products that we
6 have used in those older facilities, and for
7 facilities that are very close to ending its
8 postclosure care period under the current rules,
9 adding potentially PFAS in the parts per trillion
10 could certainly open up those facilities to more
11 scrutiny, more trying to identify what the
12 potential sources of PFAS be whether it be
13 background or such.

14 So I think, you know, regardless of 811 or
15 807, it still really is the same concern. There
16 hasn't been enough studies done on how this will
17 affect our ability to monitor effectively and the
18 associated costs.

19 BY MR. RAO:

20 **Q. When Part 620 was adopted, you know, there**
21 **was the same concerns expressed by some of the**
22 **landfill operators about those standards that were**
23 **adopted, and the Board had kind of an exemption by**
24 **putting some of these facilities in Class 4 where**

1 **Class 1 standards don't apply.**

2 **Do you think that some kind of a carve out**
3 **in the present rulemaking would address some of the**
4 **concerns here raised and whether those concerns**
5 **could be addressed in a separate rulemaking in**
6 **landfills?**

7 **MR. BALLENGER:** Are you referring to classes of
8 groundwater, particularly when you say Class 4

9 **BY MR. RAO:**

10 **Q. Yeah. There's a section in Class 4,**
11 **Part 620, Class 1 and Class 2 standards do not**
12 **apply to Part 811 landfills?**

13 **A.** I think it certainly potentially could be
14 helpful if rules -- if those were opened up and
15 discussed. You know, currently, you know, with
16 807 sites with the older facilities, we don't have,
17 for instance, the zone of attenuation ability at
18 those facilities. We're kind of held to a
19 different standard. And if -- and most of the time
20 where especially when it's in regards to organics,
21 the -- we are set -- it's been basic practice to
22 set the organic standards at the lowest level that
23 can be detected, where most of the time nondetected
24 obviously hopefully, and held with those standards

1 regardless of the type of water bearing unit,
2 whether it's -- whether it could be considered
3 Class 2 or Class 3, it's always basically been the
4 practice that's considered Class 1, so . . .

5 MR. RAO: Okay. Thank you for those answers,
6 Mr. Ballenger.

7 BY MR. RAO:

8 Q. Mr. Hilbert, in response to Question 36,
9 you know, you had provided some cost figures that,
10 you know, based on the Vermont study you had
11 indicated that the cost impact may be around -- may
12 range between 2 to 16 million dollars without
13 including that annual operating cost.

14 I just want to know if the capital cost
15 estimates, whether they represent an incremental
16 cost for treating PFAS in landfill leachate or
17 generally represent treating the leachate for all
18 constituents that you're monitoring for.

19 A. It's a good question. It's an interesting
20 question. And, you know, the -- just as a point of
21 clarification, when I initially referenced the cost
22 impacts from having to treat leachate for PFAS
23 based on the Vermont study, it was really based on
24 the letter from the NWRA sent. And I hadn't really

1 looked at the attachment to that letter. My
2 follow-up was looking at the attachment to the
3 letter; but I have since looked at it, and I think,
4 you know, we don't really know as we sit here what
5 those costs are gonna be.

6 If we to start treating leachate for PFAS
7 down to some unknown level because we don't
8 actually have a defined standard unless a
9 wastewater treatment plant sets a pretreatment
10 limit, but what we do know is if we have to
11 discharge it to like a surface water and treat it
12 to surface water standards or potentially even to a
13 wastewater treatment plan, in order to treat the
14 PFAS we may have to treat other components of the
15 leachate down to levels to where we can actually
16 have an impact on the PFAS.

17 So there's other components within the
18 leachate that would interfere with our ability to
19 treat specifically for PFAS. I mean, granular
20 activated carbon is a classic example. There's a
21 lot of substances in leachate that will bind
22 granular activated --

23 (Reporter clarification.)

24 MR. HILBERT: Sorry. So I -- you know, we just

1 know that the costs are gonna be significant.
2 They're really not defined and may very well be
3 site specific depending on their situation with how
4 they need to manage their leachate.

5 BY MR. RAO:

6 **Q. A couple clarifying questions for**
7 **Mr. Ballenger. In response to Question 34C, you**
8 **had given us a definition of green fields in sites**
9 **where potentially landfills could be -- is that --**

10 A. That's correct, yeah. It's basically a
11 brand new facility, not current -- what we refer to
12 as green field is a brand new facility not
13 currently attached to an older facility, you know,
14 wouldn't share a permit with an older facility, you
15 know, a brand new, permitted facility.

16 **Q. So does NWRA have a list of potential**
17 **green field that would be affected by the proposed**
18 **PFAS or it can be a site where a landfill can be --**

19 A. I think it was a general statement about
20 any future monitoring of those particular
21 facilities and how they're -- yes.

22 **Q. Okay. And in response to Question 30A,**
23 **you had stated that Bloomington Normal Water**
24 **Reclamation Plant indicated that they will cease**

1 **accepting leachate from McClean County landfills**
2 **after January 2023.**

3 **Do you know if they cited any specific**
4 **concerns regarding the proposed PFAS standards as a**
5 **reason for not accepting the leachate?**

6 A. They basically -- and this not only
7 affects this facility, it affects another facility
8 by another company. They've shut us both off
9 basically as of January 1. They had not stated a
10 specific standard. They understood that standards
11 were being addressed. Maybe they have actually
12 read the rulemaking that was being put forth and
13 felt that we were a potential source of PFAS to
14 their facility; and, therefore, in order to
15 eliminate the potential source without any --
16 actually seeing any data or doing any testing or
17 doing any testing on their own, they have said they
18 no longer will accept our leachate for treatment as
19 of January 1.

20 MR. RAO: That's all I have.

21 HEARING OFFICER HORTON: Okay.

22
23 BY MS. VAN WIE:

24 **Q. I think this is for Mr. Hilbert, but --**

1 and I apologize. I haven't read everything, so if
2 this was somewhere, I apologize. But in looking at
3 the numbers that you're proposing in light of the
4 Vermont study, was that just looking at carbon
5 filtering as a method of removal or was it looking
6 at different processes?

7 A. I'd have to dig into the Vermont study
8 which I do have, but my understanding it was a
9 whole suite of different removal options.

10 Q. Okay.

11 A. And not just activated carbon.

12 MS. VAN WIE: Okay. Thank you.

13 HEARING OFFICER HORTON: Okay. Any questions
14 in Springfield for these two witnesses?

15 MR. KONDELIS: Yes, Miss Horton. Thank you.

16 HEARING OFFICER HORTON: Go ahead.

17 BY MR. KONDELIS:

18 Q. These are for Mr. Hilbert.

19 Is potable water drinking water, sir?

20 A. I don't know if I'm gonna be able to
21 answer that question as I sit here. I don't know.
22 I haven't read the definition of potable water
23 recently, but I would consider it drinking water,
24 yes.

1 **Q. Okay. And earlier today you talked about**
2 **nonpotable analyses for analyzing --**

3 A. That was probably --

4 **Q. -- and --**

5 A. I'm sorry. Go ahead.

6 **Q. You mentioned nonpotable analyses earlier**
7 **in your remarks today, and with regard to those**
8 **techniques, the nonpotable ones, are those**
9 **appropriate to analyze potable resource**
10 **groundwater?**

11 A. Yeah. Can I just clarify what I was
12 referring to previously? I was referring to the
13 groundwater and not finished drinking water. So
14 the methods that I'm aware of are approved for
15 finished drinking water and not groundwater or
16 other nongroundwater media. So I think I just
17 misstated the term.

18 **Q. Okay. So I guess I'm just looking for an**
19 **answer to my question.**

20 **Is it appropriate to use a nonpotable**
21 **technique to analyze potable water?**

22 MS. MANNING: Do you understand the question?

23 MR. HILBERT: I do understand the question.
24 That's really a question for you guys to answer.

1 My general sense of it is that you would not -- let
2 me make sure I understand the question again.

3 You're asking whether or not a nonpotable water
4 sampling or water analytical method is appropriate
5 for a potable water method?

6 BY MR. KONDELIS:

7 **Q. Correct.**

8 A. In general, I would say no. I mean, there
9 are methods developed for two different media.

10 **Q. So a USEPA method such as 1633, does that**
11 **analyze potable water?**

12 A. That method is under development for
13 sampling nondrinking water media. So, I mean, you
14 know, there's -- I'm getting a little confused
15 between, you know, what you're referring to as
16 potable versus drinking water.

17 **Q. Okay. USEPA has validated two methods for**
18 **potable water, 533 and 537.1, correct?**

19 A. That's my understanding. I'm not
20 intimately familiar with those two methods.

21 I do have a question, though, with respect
22 to your question of me. So when you're referring
23 to potable, are you referring to drinking water or
24 groundwater? Cause groundwater can be potable

1 which means that it's suitable for use as a
2 drinking water, but, you know, the methods were
3 developed for drinking water which, you know, in my
4 limited understanding of that methodology would be
5 for finished drinking water from a community water
6 supply.

7 **Q. Okay. You talked about the landfill**
8 **requirements; is that correct? Earlier?**

9 A. I don't understand the question.

10 **Q. Well, did you talk about the landfill**
11 **requirements like in Section 811?**

12 A. Yeah. Dr. Rao asked me a question about
13 811 standards, yes.

14 **Q. Right. Do those landfill requirements**
15 **that were mentioned have anything to do with**
16 **setting potable resource standards for groundwater?**

17 A. No, no. I mean, they are --

18 MR. KONDELIS: I don't have anything else.

19 MR. HILBERT: -- rules do not set Part 620
20 rules, but the 620 rules have an impact on the
21 811 -- facilities that operate under the 811 rules,
22 and that's what our concern is.

23 MR. KONDELIS: Nothing further. Thank you.

24 HEARING OFFICER HORTON: Okay. Any further

1 follow-up questions for these two witnesses?

2 All right. You're dismissed. Thank you
3 very much.

4 (Witnesses excused.)

5 HEARING OFFICER HORTON: Next is Mr. Ned
6 Beecher. Just to start, I'll enter in your
7 prefiled testimony as of read as Exhibit 33.

8 (WHEREUPON, Exhibit No. 33 was
9 marked for identification.)

10 (WHEREUPON, the witness was
11 duly sworn.)

12 HEARING OFFICER HORTON: And, Mr. Beecher, do
13 you have any summary of your testimony that you'd
14 like to present for us?

15 MR. BEECHER: I do have a summary, and I've
16 provided, I believe, in slides that everybody has a
17 copy of hopefully.

18 HEARING OFFICER HORTON: I think we all do,
19 yeah. Please proceed.

20 MR. BEECHER: Thank you for the opportunity to
21 present and to speak today as well as to provide
22 input to the process here regarding the Part 620
23 groundwater standards.

24 I'm going to go over the high points of

1 the information we've been provided in testimony.
2 I want to note that I am an outsider to some degree
3 from the state of Illinois, and I'm trying to bring
4 kind of a national perspective, a perspective based
5 on working throughout the United States on the PFAS
6 issue related to biosolids and wastewater in
7 particular; but having been involved in several
8 discussions in different states trying to provide
9 information and lessons learned from those other
10 states, all of which are the ones I've been
11 involved with, are wrestling with this question of
12 how to regulate PFAS which is so ubiquitous, it's
13 important to note that many states are -- have
14 looked at the issue, are grappling with it, but are
15 not setting standards at this point. The majority
16 states are waiting to see what USEPA does and kind
17 of learning and following -- learning from what
18 others -- other states are doing.

19 So in addition to some of the concerns
20 you've heard already -- and we have grave concerns,
21 the PFAS coalition with whom I am working and for
22 whom i am speaking, we have concerns about things
23 that have been brought up already today about the
24 toxicity standards, how those are set, how the

1 numeric values proposed in the Part 620 revisions
2 for PFAS were derived.

3 I think the bottom line is that there is a
4 lot of debate still worldwide about what the
5 appropriate drinking water standards are,
6 health-based, risk-based standards are for PFAS.
7 And some of what's proposed here, the PFOS and PFOA
8 levels proposed in these groundwater standards, are
9 amongst the lowest in the world. I come from an
10 area in New England where some of the standards
11 that have been set are basically the lowest in the
12 world for groundwater and drinking water, and I
13 think it's important to recognize that many other
14 jurisdictions including, for example, the World
15 Health Organization has just come out with a
16 report, have very different levels, guidance values
17 and screening values and standards proposed that
18 are considerably higher in number than here.

19 So leave it to say that there's a lot of
20 debate still about the toxicity and the appropriate
21 values. I'm not a toxicologist, so I can't really
22 get into those details, but I'll leave it at that.
23 So key points we make in our testimony, not just
24 mine, but in prior testimony by Fred Andes here for

1 the PFAS coalition is that setting drinking water
2 standards first is what most states do. So setting
3 MCLs is common.

4 IEPA has maybe done groundwater standards
5 first for other things, but in this case we
6 strongly believe that it is important to do the
7 MCL -- the drinking water standards first because
8 it takes into account feasibility costs and
9 impacts. It appears IEPA is going forward with the
10 groundwater standards cause they don't have to do
11 that in this process.

12 It's also -- so it's important to
13 understand the impacts on other programs which IEPA
14 is involved in and which are important in society
15 such as wastewater treatment, waste management as
16 we've just heard. You know, what are the impacts
17 on landfills? Landfilling waste, managing waste
18 and managing wastewater are not optional activities
19 for society. These are all things done for the
20 public health and for the public good.

21 So these people who are involved in those
22 are not bad people. They're not -- they're trying
23 to do the right environmental thing, and so the
24 calls we are making for evaluation of the impacts

1 and the costs and the feasibility around the
2 PFAS -- setting PFAS standards are important to
3 listen to.

4 There are other examples of states that
5 have rushed forward. As I mentioned in my
6 testimony, Maine is one example, other states in
7 New England. And now they are in a conundrum where
8 they have very low groundwater standards; but they
9 can't really enforce them, and they know that.
10 When we talk to the agency personnel, they're like,
11 what can we do; we don't know where to turn because
12 we've set such low standards that we don't know
13 whether we can enforce or not enforce. How do they
14 deal with that? So we urge Illinois EPA to avoid
15 getting into that kind of conundrum.

16 Liability is a concern. You've heard from
17 the waste management folks, and the wastewater
18 treatment facilities also have that. My area of
19 expertise, biosolids, we have that concern about
20 liability regarding the CERCLA proposal that USEPA
21 has put forward for PFOA and PFOS. A farmer who's
22 used biosolids in the past may end up having some
23 traces of PFOA or PFOS in their soil, are they
24 suddenly a responsible party and have to pay for

1 cleanup? These are real questions, and so the
2 liability thing needs to be sort of considered.

3 Again, as you've made point of, you know,
4 the 620 groundwater standards aren't -- you know,
5 they can stand alone, and they don't necessarily
6 define how those standards are going to be used.
7 There's subsequent IEPA actions that would then
8 draw them into leachate standards or cite them
9 regarding soil or groundwater standards around
10 biosolids.

11 But the reality is once you set a standard
12 in something like the groundwater levels, you set
13 that two parts per trillion PFOA standard in the
14 groundwater numbers. That becomes an expectation
15 not only for regulators, but for the regulated
16 parties as well as for public as a whole. You
17 can't then set a MCL at 40 or something like that.
18 It just -- it wouldn't pass muster. It wouldn't
19 pass a laughability test.

20 So once these numbers are set at 2 and 7.7
21 for PFOA and PFOS, that sets expectations; and
22 those will become if not immediately or if not
23 intended by IEPA at this point, at some point those
24 numbers will be cited and will become de facto

1 standards. And certainly people will begin to make
2 decisions currently. The regulated community will
3 make decisions based on the fact that those are
4 there.

5 We need to understand background levels.
6 We've heard that from other folks already today.
7 IEPA has some sense of the background levels from
8 the community water systems testing that has been
9 done, but there's a lot more that could be done.
10 One of the things I point to in one of the slides
11 here is about background levels. So looking at
12 Slide 6 on Page 3 of the hand -- my Page 3 of
13 handout. Anyway, setting limits of background
14 levels, this is a study done in Massachusetts on
15 Cape Cod looking at a neighborhood specifically
16 where there are no known PFAS sources from industry
17 or dumping or firefighting foam use.

18 And basically the home septic systems are
19 putting out PFAS because we use these in so many
20 different ways. They're putting out PFAS at levels
21 that are pretty close to the proposed standards
22 here in -- at the 620 levels, even above. So
23 drinking water wells in that neighborhood are
24 affected by neighbors and their own septic systems

1 at levels that are pretty similar to the proposed
2 standards for PFOA and PFOS and the Part 620 limit.
3 So, again, you're setting limits at background
4 levels where homeowners might become liable. You
5 know, somebody could sue their neighbor to say you
6 affected my well at above the groundwater limit.
7 Do we want to have, you know, set up that kind of
8 thing or at least we want to be aware if we're
9 setting it up, that we are setting it up that way.

10 So our recommendation is to remove the
11 PFAS standards from the current proposed 620
12 revisions. Give it more time. Let's do a
13 stakeholder process, you know, bring in all these
14 different kinds of expertise to evaluate. I think
15 IEPA has to look also how at their bigger sort of
16 more global evaluation of how PFAS fits into all of
17 the regulatory and environmental programs they
18 have.

19 Is it the most important issue to be
20 tackling? At what level should they be tackling
21 it? How big a threat is it? And is it worth PFAS
22 destroying other important programs such as the
23 management of wastewater and waste? Is it
24 important enough that you need to disrupt and drive

1 up the cost of those other programs? I think it's
2 important to answer those kinds of questions.

3 I think that's it for what I have as an
4 introduction. I welcome any questions.

5 HEARING OFFICER HORTON: Any questions here in
6 Chicago to Mr. Beecher?

7 Any questions in Springfield to
8 Mr. Beecher?

9 MR. KONDELIS: Yes, just a few.

10 HEARING OFFICER HORTON: Go ahead.

11 MR. KONDELIS: Thank you.

12 BY MR. KONDELIS:

13 **Q. With regard to USEPA method 1633,**
14 **Mr. Beecher, does that method analyze potable water**
15 **samples?**

16 A. I'm not an expert on 1633, though I have
17 read it through and have followed the development
18 of analytical methods by USEPA over the last five
19 years. It is intended for nonpotable, and it
20 states clearly in its introduction for nonpotable
21 water and solid media.

22 **Q. So is it appropriate to use a nonpotable**
23 **method such as 1633 to analyze potable water**
24 **resources?**

1 A. I'll repeat -- I mean, I think I'll be
2 repeating what others have said which is that
3 method is intended for nonpotable water as it
4 states, and groundwater, if you're referring to
5 ground -- if you're thinking about groundwater in
6 particular, is I think considered nonpotable and
7 would be appropriately analyzed through 1633 rather
8 than 537.1 or 533.

9 **Q. What are Class 1 standards called?**

10 A. I don't know what you're referring to,
11 Class 1.

12 **Q. The Class 1 standards.**

13 A. Under -- is that under IEPA --

14 **Q. In Section 620, in Section 620.**

15 A. Right. I'm not an expert. I don't --
16 totally familiar with part 620, so I don't have the
17 answer to that.

18 **Q. Are they called potable resource standards**
19 **in 620, if you know?**

20 A. I don't know, but that's something that
21 clearly IEPA knows and can sort out.

22 MR. KONDELIS: Nothing further.

23 HEARING OFFICER HORTON: Okay. If there's no
24 further follow-up questions here in Chicago, you're

1 dismissed, Mr. Beecher. Thank you very much.

2 MR. BEECHER: Thank you.

3 (Witness excused.)

4 HEARING OFFICER HORTON: We'll now move on to
5 public comments. I know here in Chicago we have
6 two members of the public who wish to offer
7 comments.

8 Springfield, are there any members of the
9 public?

10 MR. KONDELIS: No.

11 HEARING OFFICER HORTON: Okay. Thank you.

12 MR. KONDELIS: No, there are not, Miss Horton.

13 HEARING OFFICER HORTON: Okay. Let me grab the
14 sheet. Okay. We have two members of the public
15 here to provide public comments, and I'll let you
16 say your names and spell them for the court
17 reporter, and then you can proceed whoever wants to
18 go first.

19 MR. MCELHENY: Okay. So my name is Ray
20 Mcelheny, R-a-y, last name M-c-e-l-h-e-n-y.

21 MS. BILJAN: And my name is Sam Biljan, S-a-m,
22 B-i-l-j-a-n.

23 HEARING OFFICER HORTON: Go ahead.

24 MR. MCELHENY: Okay. So we both live in

1 Crestwood, Illinois. We've lived there for a
2 couple years. I was originally from Michigan, but
3 my wife has lived in the south side of Chicago
4 essentially her whole life. We're here today
5 trying to advocate for the groundwater standards
6 for PFAS. We would love to see even stricter
7 standards, but the standards that are proposed are
8 at least a start. So we definitely are advocating
9 for that today.

10 I do have a few notes. If the Illinois
11 Pollution Control Board would consider the public
12 comments that have been submitted on this issue,
13 there's about 20 public comments for every aspect
14 of these proposed regulations. Almost all of them
15 are regarding PFAS, and almost all of those either
16 support the proposal or are actually asking for
17 stricter guidelines.

18 There are submissions that are for
19 numerous people. I believe one of the submissions
20 has 10 people from St. Jude. So neither my wife,
21 nor myself are paid to be here. I have a feeling
22 quite a few people in this room are, and there's
23 nothing wrong with that. I mean, why would you
24 want to be here? It's like we're in a closet. The

1 carpet's terrible. The lighting's terrible. It's
2 pretty miserable, so I understand it's not a
3 judgment that people are paid to be here.

4 But the reason why we're here is actually
5 in a very big way exactly what the previous speaker
6 was talking about, just for the reverse reason. So
7 unfortunately I do have to make the comment. I
8 think it's a bit Orwellian that a group that's
9 called the Coalition For the Regulation of PFAS,
10 the only actions you can see across the country are
11 them precisely trying not to regulate PFAS. Every
12 single state you see them involved in anything,
13 that is their sole goal.

14 We would like to see PFAS regulated, and
15 specifically we understand that the standards today
16 are going to affect what will be acceptable in the
17 future when there is an MCL set. So if they get to
18 advocate for let's not have the standard, it's not
19 important, then it's going to be a much harder
20 fight to protect municipal drinking water. So this
21 is a first step, and that's why we're here today.

22 Sam, anything you want to add?

23 MS. BILJAN: Well, I think you said it
24 really well. I am not gonna kind of rehash

1 everything you just said, but all I have written
2 down here is that I'm deeply convinced in the
3 science behind the USEPA's health advisory that
4 says PFAS chemicals in our water are unsafe with
5 the potential to impact many people. And this
6 health advisory actually says the threshold should
7 be even lower to levels that cannot currently even
8 be detected.

9 We know that groundwater directly impacts
10 drinking water, contaminating aquifers and wells.
11 And with that in mind, I urge you as a concerned
12 citizen who has drunk from many wells in Illinois
13 to please adopt this -- these groundwater standards
14 now. Thank you.

15 HEARING OFFICER HORTON: Thank you both so
16 much.

17 I would like to go off the record for a
18 moment.

19 (WHEREUPON, a short recess was
20 taken.)

21 HEARING OFFICER HORTON: Okay. While we were
22 off the record, we discussed posthearing filings.
23 So we've come up with this schedule. Illinois EPA
24 will file their outstanding responses and errata

1 sheets on December 16. All participants will file
2 any follow-up questions to IEPA on January 6 based
3 on those outstanding responses. January 20, IEPA's
4 answers to those questions will be due, and then
5 February 17 will be the date for all participants
6 to file posthearing briefs with the Board.

7 Okay. Are there any other matters that
8 need to be discussed at this time?

9 All right. Hearing none, I would like to
10 thank everybody for participating today, and the
11 third hearing is adjourned.

12 (WHEREUPON, the proceedings were
13 adjourned at 12:00 p.m.)

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1 RAELENE STAMM being first duly sworn, on
2 oath says that she is a court reporter doing
3 business in the City of Chicago; and that she
4 reported in shorthand the proceedings of said
5 hearing, and that the foregoing is a true and
6 correct transcript of her shorthand notes so taken
7 as aforesaid, and contains the proceedings given at
8 said hearing.

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Certified Shorthand Reporter

<p style="text-align: center;">A</p> <p>a.m 1:17 4:2 7:10 A1 11:4 abbreviation 5:9 ability 88:23 96:17 97:17 99:18 able 82:18 83:4 89:12 102:20 above-entitled 1:12 absorbed 42:6 ACC 61:17 64:10 accent 9:6 accept 83:20 84:13 101:18 acceptable 16:16 57:7 118:16 acceptance 22:3 accepting 101:1,5 access 12:11 account 9:10 10:6 11:18 12:12 31:22 109:8 accurate 9:19 43:14 achievable 63:14 achieve 73:10 achieved 63:7 77:15 acid 45:14 acidic 37:13 42:9 43:10,12 45:11 acidify 45:10 acidity 45:11 acknowledged 11:9 acknowledges 16:23 acknowledgment 14:6 act 87:10 action 24:22 actions 21:18 22:1 111:7 118:10</p>	<p>activated 99:20 99:22 102:11 activities 109:18 actual 26:15 39:6 66:13 77:10 adaptation 79:16 adaptations 79:12 add 118:22 added 11:10 14:5 95:24 96:1 adding 45:11 85:23 92:18 96:9 addition 5:8 6:13 52:7 107:19 additional 14:6 20:16,20 23:24 85:23 address 30:4 39:7 97:3 addressed 28:13 97:5 101:11 addressing 36:3 adequate 39:9 adhere 51:17 adjourned 120:11 120:13 ADM 1:8 administered 53:7 Administrative 4:6 admitted 4:17 adopt 119:13 adopted 87:21 96:20,23 adverse 48:14 advisor 2:6 4:11 advisories 66:8 72:15 advisors 73:11 advisory 66:13,13 119:3,6 advocate 117:5 118:18 advocating 117:8</p>	<p>affect 96:17 118:16 aforsaid 121:7 afoul 26:2 afternoon 7:12 age 63:24 64:1 69:2 96:4,5 agencies 48:3,22 49:3 51:1,11 53:19 57:2 agency 2:11 5:24 10:16,18 12:21 40:10,12 51:21 95:14 110:10 agency's 47:24 92:14 ages 70:6 ago 5:23 agree 9:6 37:10 59:13,18 agreed 10:4 agrees 59:24 agricultural 38:5 45:1,8,9 agriculture 37:6 38:1 42:2 ahead 5:18 13:10 18:7,12 29:6 44:11 56:20 62:21 73:23 102:16 103:5 114:10 116:23 aid 75:11 al 40:13,19 alarm 44:14 aligned 88:9 alkaline 37:11,15 38:4 42:7,7 45:5 45:13 Allied 87:17 allow 54:18 74:14 82:14 allowed 7:18 93:21 alternative 55:17</p>	<p>84:11 85:5 altogether 53:19 amend 6:1 93:24 94:5 Amendments 1:6 4:5 American 10:10 amount 71:15 83:24 84:12 analogous 23:2 analyses 40:2,10 40:13 103:2,6 analysis 20:19 21:23 32:20 33:23 34:12 43:22 44:23 55:24 analytical 20:7 33:7 104:4 114:18 analyze 33:18 103:9,21 104:11 114:14,23 analyzed 32:18 115:7 analyzing 103:2 Anand 2:8 4:12 Andes 108:24 animal 11:14 40:17 53:4,22 69:9 animals 12:6 38:10 41:22 42:17 53:6,17 annual 98:13 answer 14:2 15:14 15:15 16:20 18:16 30:16 31:24 33:6 59:20,22 60:6 67:7 71:6 74:20 89:24 92:17 93:5 94:9,24 95:16 102:21 103:19,24 114:2</p>	<p>115:17 answering 29:22 answers 7:5 30:24 32:5 34:21 46:17,18 51:7 74:3 98:5 120:4 anticipate 7:9 anybody 7:24 62:21 Anyway 112:13 apologize 102:1,2 APPEARANCES 2:1 appears 109:9 applicable 92:15 92:21 94:4 applicants 22:21 application 37:15 84:9,12 applied 41:11 50:19 90:12 applies 27:15 93:12 apply 27:23 76:9 90:14,21 94:12 97:1,12 appreciate 36:2 87:1 89:23 appreciated 9:5 approach 53:8 86:14 approaching 86:22 appropriate 34:4 41:4 49:22 50:3 50:18,20 51:16 52:10,22 65:15 69:21 71:10 72:8 73:17 78:19,21 87:4 103:9,20 104:4 108:5,20 114:22 appropriately 115:7 appropriateness</p>
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