

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)
)
PETITION OF MIDWEST GENERATION, LLC,) AS 21-1
FOR AN ADJUSTED STANDARD FROM)
35 ILL. ADM. CODE 854.740(a) AND)
FINDING OF INAPPLICABILITY OF)
35 ILL. ADM. CODE,

REPORT OF THE PROCEEDINGS held in the
above-entitled cause before Hearing Officer
BRADLEY P. HALLORAN, called by the Illinois
Pollution Control Board, taken by Raelene Stamm,
CSR, for the State of Illinois, Will County Office
Building, 302 North Chicago, Street, 2nd Floor,
Joliet, Illinois, on the 29th day of June, 2022,
commencing at the hour of 9:00 a.m.

Reported By: Raelene Stamm, CSR

License No.: 084-004445

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I N D E X

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NUMBER	MARKED	ADMITTED
Midwest Generation Exhibit		
No. 38	76	

1 HEARING OFFICER HALLORAN: Good morning,
2 everybody. Today is June 29, 2022. We're
3 continuing this hearing, Adjusted Standard 21-1,
4 from yesterday. And Miss Gale has her, I believe,
5 final witness up, Mr. Dehlin. She's continuing her
6 cross of him or, excuse me, her direct of him, but
7 first we want to take care of some housekeeping
8 matters.

9 Miss Gale?

10 MS. GALE: Yes. There are a couple exhibits
11 that I need to label. When Mr. Gnat was
12 testifying, he talked about the second quarter 2021
13 CCR rule groundwater results which were Tab 2 in
14 the binder in front of you. Those will be
15 Exhibit 32.

16 Then Exhibit 33 are the third quarter 2021
17 compliance commitment agreement groundwater results
18 discussed by Mr. Gnat.

19 And Exhibit 34 is Mr. Maxwell's CV.

20 Exhibit 35 is Tom Dehlin's CV.

21 HEARING OFFICER HALLORAN: I'm sorry?

22 MS. GALE: Tom Dehlin's CV.

23 HEARING OFFICER HALLORAN: All right.

24 Mr. Dehlin, you're still under oath, but

1 just to confirm, the court reporter will swear you
2 in.

3 (WHEREUPON, the witness was
4 duly sworn.)

5 THOMAS DEHLIN,
6 called as a witness herein, having been first duly
7 sworn, was examined and testified as follows:

8 DIRECT EXAMINATION

9 BY MS. GALE:

10 Q. Good morning.

11 A. Good morning.

12 Q. I'd like to turn in your binder to
13 Exhibit D which is your December 2, 2021, report,
14 and it's Exhibit D of the Illinois EPA's
15 recommendation.

16 Generally speaking, what did this report
17 address?

18 A. This report addressed the -- whether
19 material that was on the access ramp in Pond 2, if
20 that surfacing material was reused, is fill
21 material or placed under the HDPE geomembrane liner
22 when the pond was relined in 2008.

23 Q. Okay. And what did you conclude?
24 What did you find?

1 A. I concluded that they did not reuse that
2 material.

3 **Q. By they, you mean who?**

4 A. Brieser Construction, the contractor that
5 was responsible for relining the pond.

6 **Q. What did this use instead?**

7 A. They used new surfacing material. I
8 believe it was that course aggregate material that
9 I had discussed yesterday and then sand underneath
10 that.

11 **Q. And the course aggregate came from off**
12 **site, right?**

13 A. Correct.

14 **Q. And what -- did they have to deal with the**
15 **Poz-O-Pac as well?**

16 A. Yes. They would have had to -- when
17 removing that surfacing material -- cause that
18 surface -- the original surfacing material was
19 placed on the original Poz-O-Pac liner, they would
20 have encountered the Poz-O-Pac, which they did.

21 **Q. And what did they do with the Poz-O-Pac?**

22 A. They left it in place.

23 **Q. Great. Thank you very much.**

24 **Next I want to turn to Exhibit 2 of your**

1 report. I'm sorry, Exhibit 2 in your binder.

2 Excuse me. It would be Exhibit 2 of Midwest Gen's
3 original petition.

4 A. Okay.

5 Q. This is the affidavit of Mr. Dave Nielsen,
6 right?

7 A. Correct.

8 Q. Who is he?

9 A. Dave Nielsen is a colleague of mine. I
10 worked with him in various CCR applications since I
11 started working in August of 2015. So personally I
12 find him to be a mentor of mine. He's been with
13 Sargent and Lundy since 2008 and has over 30 years
14 of experience in geotechnical applications.

15 Q. And did you review this affidavit in
16 support of your testimony today?

17 A. I did.

18 Q. Did you assist in the preparation of this
19 affidavit?

20 A. I did.

21 Q. Okay. And turn to Exhibit 3 which is the
22 next tab.

23 A. Okay.

24 Q. What's -- this is the expert report of

1 **Dave Nielsen, right?**

2 A. Correct.

3 **Q. Did you review this report in support of**
4 **your testimony today?**

5 A. I did.

6 **Q. Did you also assist in the preparation of**
7 **this report?**

8 A. I did.

9 **Q. Okay. So, Mr. Dehlin, we now have the**
10 **subgrade prepared in Pond 2.**

11 **What was installed in Pond 2?**

12 A. After the subgrade was prepared, the first
13 thing that was placed was a nonwoven geotextile
14 fabric. The lower fabric, it was 16 ounces per
15 square yard, and that was meant to provide
16 additional cushion or protection for the HDPE
17 geomembrane liner that was then installed over
18 that. That liner was 60 mill, thick HDPE, which is
19 industry standard, white, textured liner.

20 And then over that liner on the floor of
21 the pond was installed a 12-ounce per square yard
22 nonwoven geotextile fabric that was meant to
23 provide protection for the granular protective
24 layers that were placed over that so that those

1 materials would not pose a risk to the HDPE
2 geomembrane liner. So above that 12-ounce
3 per square yard nonwoven was 12 inches of sand
4 material and then 6 inches of course aggregate
5 material, both of which were obtained off site.

6 **Q. So, Mr. Dehlin, what are geomembrane**
7 **liners like HDPE?**

8 A. They're relatively, I would say,
9 effectively impermeable plastic liners used in a
10 variety of waste containment applications. That
11 impermeability is the primary reason they're used
12 in waste containment to provide separation from the
13 waste that's being stored, whether that be on a
14 permanent or temporary basis, to avoid it from
15 leaking into the groundwater.

16 **Q. So you said a variety of waste**
17 **containment. Can you give me some examples of**
18 **where you used other than --**

19 A. Sure. Municipal solid waste landfills,
20 hazardous landfills, other industrial landfills
21 including CCR landfills. They've also been used in
22 hazardous waste surface impoundments, so a variety
23 of waste applications.

24 **Q. Mr. Dehlin, you have in front of you**

1 **Exhibit A, Miss Hunt's affidavit. Will you turn to**
2 **Paragraph 29, please?**

3 A. Okay.

4 Q. Okay. And in Paragraph 29 she states,
5 HDPE liners that overlies soils with gravel are
6 likely to sustain perforations due to overburden
7 stress, and she cites to recommendation, Exhibit I.

8 Mr. Dehlin, did you review Agency's
9 Exhibit I?

10 A. I did.

11 Q. What is it?

12 A. It is a study that shows the effects of
13 HDPE liners being in contact with gravelly soils and
14 the likelihood that they could sustain perforations
15 or even be punctured.

16 Q. Is that study applicable to how the HDPE
17 liner was installed at Pond 2?

18 A. I do not think it is because of the
19 presence of the two nonwoven geotextile fabrics
20 that I discussed earlier.

21 Q. And those two geotextile fabrics, I guess
22 in a laymen's terms, they sandwich the HDPE liner,
23 right?

24 A. Yes.

1 **Q. Okay. And do you -- did you review any**
2 **studies to support that conclusion?**

3 A. I did. There's a textbook that I
4 personally use when designing geosynthetics. It's
5 called, Designing With Geosynthetics. It's by
6 Dr. Robert Corner. He founded the geosynthetic
7 institute. Their specifications out of the
8 Geosynthetic Research Institute, which is part of
9 that organization, is very commonly used when
10 specifying geomembrane materials. So I find his
11 textbook to be useful when looking at different
12 applications of geosynthetics.

13 **Q. And that study was attached to your**
14 **March 2022 report as Attachment 12, right?**

15 A. Yes. That's correct.

16 **Q. So based upon that study and the presence**
17 **of geotextile on both sides of the HDPE liner in**
18 **Pond 2, what is your opinion of the condition of**
19 **the HDPE liner in Pond 2?**

20 A. I believe it's highly unlikely that the
21 HDPE liner in Pond 2 has suffered perforations
22 significant enough to compromise the integrity
23 based on this figure that's shown in Attachment 12.
24 If you look at the figure, the HDPE thickness we're

1 looking at here is 1.5 millimeters. That's
2 comparable to 60 mill HDPE. And you'll note that
3 by providing geotextile on both sides, you're
4 getting about twice as much protection as if the
5 HDPE was just left alone in an application like
6 this.

7 Q. Great.

8 Can you turn to Miss Hunt's affidavit and
9 look at Paragraph 30, please?

10 A. Yes.

11 Q. Okay. Please read it to yourself, and
12 then I will ask you some questions about it.

13 A. Okay.

14 Q. So, generally speaking, here she's stating
15 that exposure to the elements can cause wear and
16 tear on an HDPE liner.

17 What is your response to that?

18 A. While that is true and known, Pond 2, for
19 the most part, that liner was not exposed to
20 UV degradation. The pond was generally full
21 outside of the times where they would excavate
22 material from it to recover that storage capacity
23 and then place it back into use. But for the most
24 part, the water level was about 2 feet lower than

1 the crest elevation throughout the operation of the
2 pond.

3 So other than that 2 feet that would have
4 been exposed for maintaining freeboard, so
5 sufficient height from the operating water level to
6 the crest elevation, the rest of the liner would
7 not have had direct exposure to sunlight.

8 **Q. About the liner in Pond 2, what color is**
9 **it?**

10 A. It is white.

11 **Q. Is that also important in your analysis?**

12 A. It is important.

13 **Q. Can you tell me why?**

14 A. Yes. In general I think we understand
15 that black attracts more heat than white does.
16 When you go outside on a really hot day, you want
17 to wear lighter colors so you don't overheat.
18 Similar application applies when it comes to
19 geomembrane liners. They're going to remain
20 cooler. They're not going to attract as much UV,
21 and therefore, their degradation rate, I'll refer
22 to it, under UV is much slower than it is for a
23 black liner. And the same has actually been found
24 in a study that I attached in my March 2022 letter.

1 Let me find that attachment.

2 But that study also found the same concept
3 was applicable when looking at textured liners
4 versus smooth liners. Not as much of a decrease in
5 degradation rate, but still a notable decrease.
6 And given that the Pond 2 liner at -- or the Pond 2
7 liner is white and textured, it's not going to have
8 the same degradation rate under UV as a black
9 smooth geomembrane liner would.

10 **Q. Are you looking to Attachment 8 of your**
11 **March report and Attachment 9?**

12 A. Yes. Specifically Attachment 9 is what I
13 was looking for here. I apologize, Attachment 10
14 as well.

15 **Q. Attachment 10?**

16 A. Yes.

17 **Q. And those are the two studies that you're**
18 **relying upon in your analysis?**

19 A. Yes.

20 **Q. So based upon that information in those**
21 **studies, in your opinion is the HDPE liner in**
22 **Pond 2 compromised by either punctures or**
23 **UV damage?**

24 A. No.

1 **Q. I think you also analyzed the life span of**
2 **an HDPE liner, correct?**

3 A. Yes.

4 **Q. And that was based upon a geosynthetic**
5 **white paper?**

6 A. Yes. That's correct.

7 **Q. Is that Attachment 8? Oh, no. That's**
8 **Attachment 7.**

9 A. Yes. That's correct.

10 **Q. So what was the minimum additional**
11 **life span? I think you calculated minimum**
12 **additional life span for Pond 2 at Joliet 29?**

13 A. Yes. I forget the exact number, so let me
14 go back to my report so I can get the exact amount
15 of years. So per this white paper, a HDPE
16 geomembrane that is black conforming to GRI's,
17 Geosynthetic Research Institute's, GM13 standard
18 specification, which is the specification that was
19 used to specify the geomembrane material installed
20 at Pond 2, is estimated to have a life span greater
21 than 36 years.

22 **Q. You said it was black, though, right?**

23 A. Yes.

24 **Q. So here we have a white HDPE liner?**

1 A. Correct.

2 **Q. So based upon it being white compared to**
3 **black, what do you think?**

4 A. I think this 36-year estimate is very
5 conservative based on the studies that have been
6 done showing the benefits of having a white liner
7 as opposed to a black liner when looking at UV
8 degradation.

9 **Q. Let's turn to Miss Hunt's affidavit,**
10 **Paragraph 32.**

11 A. Okay.

12 **Q. So here she says, visual inspections do**
13 **not provide adequate verification of competence**
14 **where the synthetic liner is the only barrier**
15 **between the water within the impoundment and**
16 **contaminated subsoils and groundwater.**

17 **Mr. Dehlin, do visual inspections provide**
18 **adequate verification of competence?**

19 A. I do believe they provide adequate
20 verification of competence when it comes to the
21 geomembrane liner. These liner materials when
22 they're manufactured are tested by the
23 manufacturers to show or to demonstrate that they
24 meet the various mechanical property requirements

1 and physical property requirements that are
2 originally specified.

3 And so when these are being delivered and
4 installed, not only are the rolls when they're
5 being delivered to the site being visually
6 inspected to make sure there's no damage; but as
7 the liners are being installed and unrolled and
8 placed in panels, there's constant visual
9 inspection to ensure that these aren't damaged.

10 And I believe a similar process when
11 you're excavating material off of it and walking it
12 down very thoroughly, that you would be able to
13 find rips, tears, things of that nature after the
14 material's been removed prior to it being
15 repurposed for, in this case, a low volume waste
16 pond.

17 **Q. Mr. Dehlin, in your opinion other than**
18 **visual inspections, do any sort of sampling and the**
19 **wipe test I guess we will be discussing later, does**
20 **any other analysis need to be done on the Pond 2**
21 **HDPE liner to confirm that it's competent?**

22 A. No, no. I do not think so.

23 **Q. So I'm sorry for skipping around. I lost**
24 **track, but let's turn back to Exhibit 3,**

1 **Mr. Nielson's report.**

2 A. Okay.

3 **Q. So what was the purpose of this report?**

4 A. The purpose of this report was to
5 demonstrate that it is possible to reuse
6 polyethylene liners, in this case, a high density
7 polyethylene liner, that was previously used for
8 lining a CCR surface impoundment to be used for a
9 low volume waste pond.

10 **Q. And what's a low volume waste pond?**

11 A. A low volume waste pond, as the name
12 suggests, stores low volume waste. Low volume
13 waste can be a variety of different process waste
14 waters for a power plant. One is stormwater which
15 was referenced in yesterday's testimony as the
16 primary purpose this would be reused for the RO
17 system. Wash was also referenced and other variety
18 of things like cooling tower blow down is another
19 one.

20 **Q. So and this is only because I needed this**
21 **explained to me, so perhaps others do.**

22 **When it's low volume waste pond, it**
23 **doesn't mean low water volume; it means low waste**
24 **volume, correct?**

1 A. Correct.

2 Q. Yeah. Just in case -- that confused me.

3 And you and Mr. Nielsen conclude that the
4 geomembrane liner can be decontaminated. What's
5 your basis for that conclusion?

6 A. So we determined that it could be
7 decontaminated because we haven't found much
8 evidence that HDPE liners -- I should say we
9 haven't found any evidence that HDPE liners could
10 be contaminated from the CCR constituents that they
11 have in this case been holding for would have been
12 from '08 to 2019, so about 11 years.

13 Q. Actually, I want -- I think this is a good
14 opportunity for a Board question.

15 A. Yes.

16 Q. It's Board Question Number 17. I'll read
17 it into the record.

18 On Page 4 you state, my research has not
19 found any evidence that geomembrane liners such as
20 HDPE become contaminated with waste products that
21 are present in CCR. Question 17A, please elaborate
22 on the research you conducted to investigate the
23 potential contamination of geomembrane liners like
24 HDPE line -- like the HDPE liner in Pond 2.

1 A. So when preparing the expert testimony, we
2 relied on the digital library that's available on
3 the American Society of Civil Engineers website.
4 ASCE is an organization that civil engineers can
5 join, and like most professional organizations, it
6 is used for collaborating, sharing ideas and of
7 course networking. The ASCE library has a lot of
8 publications, research papers in all different
9 areas of civil engineering.

10 So we went into this database and searched
11 a couple key phrases that we were looking to see
12 where there's either been decontamination of HDPE
13 geomembrane by heavy metals in CCR. So by heavy
14 metals referring to arsenic, lead, the ones that we
15 test for in groundwater monitoring applications.
16 And we also looked at reuse of polyethylene liners.
17 Those were the two broad searches that we did.

18 It returned, I think, something over
19 several hundred, several hundred papers. And,
20 fortunately, the way that the library is set up,
21 you can see the title of the paper in an abstract.
22 So we scanned through those and at that time did
23 not find anything that looked -- did not find
24 anything that would have provided evidence that

1 HDPE geomembrane liners would become contaminated
2 with the heavy metals found in CCR applications.

3 **Q. Okay. So Question 17B, submit into the**
4 **record relevant studies you found regarding**
5 **contamination of geomembranes.**

6 A. Yes. So since then, and this is the
7 couple studies that I would like to introduce into
8 the record that aren't necessarily with respect to
9 the contamination of geomembranes, but how HDPE
10 geomembrane is very resistant to the chemical
11 constituents that are found in CCR and how they're
12 unlikely to permeate into the geomembrane liner
13 thus contaminating the liner.

14 **Q. So why don't you give me an opportunity to**
15 **hand these out?**

16 A. Sure.

17 **Q. So, Mr. Dehlin, let's start talking about**
18 **first Exhibit 36 which at the top has fungi?**

19 A. Yes. So Exhibit 36 is another excerpt
20 from the textbook that I referenced earlier,
21 Dr. Corner's Designing With Geosynthetics. This is
22 from Chapter 5, Designing With Geomembranes. We're
23 not going to discuss the fungi portion of it at the
24 top of Page 460 here, but we will start with the

1 subtitle, Chemical. This is looking at the
2 chemical resistance properties of various
3 geomembranes. Specifically we're gonna look at
4 Table 5.8, which is titled, General Chemical
5 Resistance Guidelines of Some Commonly Used
6 Geomembranes.

7 So in addition to HDPE, there's three
8 other geomembrane types listed here, but we'll
9 focus on the HDPE. I'm gonna read the paragraph
10 above the table which provides context for what
11 this table shows. The chemical resistance of a
12 geomembrane, vis-a-vis the substance, it is meant
13 to contain is always important and often it is the
14 foremost aspect of the design process. For
15 example, in domestic waste or hazardous waste
16 containment, the plum will interface directly with
17 the geomembrane. Thus the geomembrane's resistance
18 must be assured for the life of the facility. This
19 situation has long been recognized, and resin
20 producers and manufacturers have evaluated many
21 situations. This has resulted in various chemical
22 resistance charts such as Table 5.8.

23 And then when you look at Table 5.8 for
24 geomembrane type under HDPE, looking at two

1 different operating conditions, 38 degrees Celsius
2 and 70 degrees Celsius, you will see there are
3 various checkmarks for different chemicals that are
4 evaluated on the left-hand side of the table. The
5 checkmarks per the footnote at the end of the table
6 say -- represents generally good resistance. When
7 you look at heavy metals, you see that indeed HDPE
8 geomembrane has generally good resistance.

9 **Q. All right.**

10 A. The other piece of this that I would like
11 to look at here is Page 463 and Page 464. So
12 Page 463 at the top shows Figure 513. The figure
13 is titled, Immersion Behavior of HDPE Samples to
14 Landfill Leachate at 50 Degrees Celsius Up to
15 120 Days. So this sample of HDPE geomembrane liner
16 was immersed in landfill leachate for 120 days, and
17 they tracked the change in properties --

18 **Q. Okay.**

19 A. -- at various points, so 30 days, 60 days,
20 90 days, 120 days.

21 The top graph in the figure shows changes
22 in physical properties. The bottom graph in the
23 figure shows changes in mechanical properties.
24 You'll notice there's not a distinct trend, and

1 that's notable. As Dr. Corner states, starting on
2 Page 462, and I'll read this into the record.

3 The curves presented are the type often
4 seen in that changes in the physical properties are
5 significantly less than the changes in mechanical
6 properties, and no consistent trend is established,
7 either a uniform increase or decrease.

8 He then continues, if the geomembrane is
9 reactive to the leachate, we expect uniform
10 behavioral changes, and the changes at the higher
11 temperature to be greater than those at the lower
12 temperature. With no discernible trend to indicate
13 a reaction and hence degradation of the
14 geomembrane, it may be concluded that the scatter
15 results from inherent variation in the materials
16 and the test methods themselves.

17 And then finally I just want to conclude
18 with -- at the top paragraph of Page 464. While
19 there are no established rules on allowable
20 variation from the original test properties, it is
21 clear that polyethylene will be more resistant to
22 more -- to most organic solvents and aggressive
23 chemicals than will other common geomembrane
24 polymers. Furthermore, the higher the density, the

1 better the chemical resistance. Thus, high density
2 polyethylene HDPE geomembranes are the material of
3 choice for most landfill liners.

4 **Q. Okay. So that's an excerpt from that**
5 **textbook you talk about, right?**

6 A. Yes.

7 **Q. And then you have Exhibit 37?**

8 A. Yes. So Exhibit 37 is a paper that we
9 found that was published in Geotextiles and
10 Geomembranes, Volume 19 in 2001, Pages 329 through
11 357 of that publication. The title of this paper
12 is, Migration of Dilute Aqueous Organic Pollutants
13 Through HDPE Geomembranes. So the previous exhibit
14 that we just reviewed gives, I think, some good
15 foundational background of why HDPE is most
16 commonly used in landfills and surface impoundments
17 through a variety of waste applications. It's
18 superior chemical resistance to a variety of
19 different waste constituents.

20 This paper while it looked at aqueous
21 organic pollutants through HDPE geomembranes, in
22 here we're concerned with heavy metals, inorganics.
23 It does provide some good background information on
24 testing that has been done to the date of the

1 publication of this paper with respect to the
2 permeation or the, I guess, infiltration of heavy
3 metals into a geomembrane liner.

4 Specifically, if you could please flip to
5 Page 332 of this report, the top of that page is
6 Section 2.2, Factors Affecting Contaminant
7 Migration Through Geomembrane, and I'm going to
8 read. I apologize. This is a lengthy paragraph,
9 but I would like to read it into the record because
10 I think it demonstrates what we're looking at here
11 in Pond 2 with respect to heavy metals being able
12 to permeate into the geomembrane.

13 **Q. Which paragraph?**

14 A. The first paragraph under Section 2.2 that
15 starts, although the well-known principle.

16 Although the well-known principle
17 solubility discussed in terms of polarity, like
18 dissolves like, generally holds for polymers as
19 well. Its application to the diffusion and
20 permeation parameters are more complex due to the
21 kinetic nature of the transport process. However,
22 it has been shown that in most polymer penetrant
23 systems like a geomembrane, both diffusion and
24 permeation coefficients exhibit a general increase

1 with similarities between components.

2 So what the authors are saying here is
3 the -- an HDPE geomembrane is going to be most
4 susceptible to chemicals permeating through it and
5 contaminating it if it has a similar composition as
6 the HDPE geomembranes. This is -- generally
7 hydrocarbons are primary contaminate of concern
8 when looking at degradation of HDPE.

9 **Q. And is that because -- why is that?**

10 A. It --

11 **Q. Why --**

12 A. It's the base material. So the HDPE resin
13 is made from petroleum products. So hydrocarbons
14 are alike, so hence the reason that they're the
15 constituent concern when looking at HDPE whether
16 it's applicable. And you have to evaluate whether
17 it can withstand hydrocarbon penetration for those
18 specific types of applications, but that's not
19 applicable for Pond 2 here.

20 So they continue later in the paragraph.
21 This has been confirmed by Row, et al., 1996, which
22 studied diffusion of organic pollutants through
23 HDPE geomembranes and observed that some organic
24 compounds have migrated at much lower rates than

1 the chlorinated solvents examined.

2 And then the final sentence here, only
3 negligible penetration of the heavy metal ions, in
4 which here they note cadmium, lead, zinc, from
5 concentrated acid solutions was found. And he
6 references a study by Holzner in August 1995.
7 After four years of testing, so that HDPE
8 geomembranes may be seen as virtually ideal
9 barriers for heavy metals.

10 So based on this conclusion, the heavy
11 metals that are present CCR are expected to have a
12 negligible penetration into the HDPE geomembrane
13 liner at Pond 2. Therefore, I do not believe
14 outside of decontaminating the surface, removing
15 the CCR material, washing it down, there's a
16 concern of heavy metals penetrating into the
17 geomembrane liner and thereby contaminating it.

18 **Q. I want to put a finer point on it. That**
19 **last sentence, they make that conclusion, the**
20 **negligible penetration from concentrated acid**
21 **solutions when concentrated acid solutions were**
22 **found?**

23 A. Correct.

24 **Q. Is CCR concentrated acid solution?**

1 A. No, it is not.

2 **Q. Okay. So based upon that, what is the**
3 **likelihood in a nonacidic situation for a metal --**
4 **heavy metals to penetrate the HDPE?**

5 A. So this found negligible penetration from
6 concentrated acid solutions. So in a
7 nonconcentrated acid solution like CCR, less than
8 negligible is the best way I can answer that.

9 **Q. Thank you.**

10 **Mr. Dehlin, we talked about your research,**
11 **and your research has -- or in your experience, has**
12 **a geomembrane been successfully decontaminated and**
13 **reused?**

14 A. We haven't explicitly dealt with the
15 decontamination of a pond that was previously lined
16 with geomembrane and CCR applications. We have
17 been involved in several projects where CCR ponds
18 were closed by removal or the ashes removed and
19 subgrade was decontaminated. That generally
20 involved taking out a nominal thickness of the soil
21 to confirm it was decontaminate and then visual
22 inspection.

23 **Q. Can you turn to Attachment C of Exhibit 3?**

24 A. Yes.

1 **Q. Isn't this an example of a decontamination**
2 **of a geomembrane liner?**

3 A. Yes. I do apologize. I was speaking from
4 personal experience.

5 **Q. Right.**

6 A. This was not a project that we were
7 involved with, but this was an example of a project
8 that we found in our research where a geomembrane
9 liner that had previously been used for leachate.
10 A portion of it was then repurposed for clean
11 rainwater and was found to be in good condition
12 after 25 years of service.

13 **Q. So, Mr. Dehlin, how would you**
14 **decontaminate a HDPE liner?**

15 A. So similar to how the plant has previously
16 cleaned liners after being used is pressure wash it
17 in a systemic, methodical manner. And then based
18 on what I've seen in my research, I think that
19 would be sufficient. However, if further
20 demonstration is required to show that it is
21 decontaminated, there are other methods that are
22 available. One would be a wipe test that you
23 alluded to and that we included in the expert
24 opinion that Dave Nielsen signed.

1 **Q. But if the liner had to be removed instead**
2 **of being reused and decontaminated and reused, what**
3 **would be the process?**

4 A. If we instructed a contractor to go in and
5 close Pond 2 in accordance with the existing
6 Illinois CCR Rule Standards under Part 845, they
7 would have to take out the granular protective
8 layers. They would have to take out the HDPE
9 geomembrane liner. They would have to take out the
10 Poz-O-Pac liner underneath the HDPE to get to the
11 natural earth and subgrade materials that we
12 discussed yesterday.

13 In that process the demolition contractor
14 is going to likely go in with an excavator and take
15 it all out. These -- it's important to note these
16 liners are seamed, so it is one continuous piece of
17 material. So even though they came to the site in
18 rolls, it's not practical to just roll it back up
19 and take it off site. It's all gonna come out.
20 It's all gonna come out with an excavator likely,
21 not a contractor.

22 What's important to note for Pond 2 is the
23 granular protective layers above the HDPE
24 geomembrane liner that the operators drove

1 equipment on and used to take CCR material out of
2 the ponds so that they weren't driving directly
3 over the HDPE geomembrane liner, that was exposed
4 to CCR waste water. So it is highly likely that
5 that material is contaminated with CCR
6 constituents.

7 It is very likely in the event of all this
8 excavation work that some of that material could
9 make it into the earth and subgrade through the
10 demolition process, in which case not only are we
11 taking out all those layers I mentioned, but there
12 would have to be additional excavation. We
13 estimated about 6 inches based on our experience of
14 material that would also have to come out to really
15 confirm visually that the subgrade has been
16 decontaminated.

17 **Q. I want to turn to Board Question Number 4.**

18 **A. Okay.**

19 **Q. I'll read it, and then you can respond.**

20 **Board Question Number 4, Midwest**

21 **Generation states, "during the demolition Pond 2,**
22 **CCR would have escape from the basins when the**
23 **liner is removed, thus requiring excavation of the**
24 **HDPE liner, the Poz-O-Pac liner beneath, and**

1 approximately 6 inches of soil below the liner."

2 Petition at 16 to 17.

3 Please explain why CCR would escape from
4 the basin during demolition of Pond 2 when the
5 liner is removed if the CCR is removed for
6 beneficial use prior to demolition?

7 A. So the answer that I just gave is our
8 response to this question. It's not CCR, per se.
9 It's CCR contaminated soils that we're concerned
10 with here.

11 Q. Great.

12 And your concern is it's the contamination
13 from the demolition process?

14 A. Yes.

15 Q. I'm gonna turn to Board Question Number 6.

16 A. Okay.

17 Q. Midwest Generation states some CCR that
18 was left in Pond 2 to maintain the integrity of the
19 liner would be removed using a multistep process,
20 Petition at 20. How much CCR was left in place?
21 Where will this CCR be disposed? Is there a
22 fugitive dust plan in place for Pond 2 to address
23 dust issues during removal?

24 I guess the first question, how much CCR

1 **was left in place?**

2 A. The -- to my knowledge, no, I'll call it
3 free CCR was left in place. It's CCR constituents
4 that may have percolated through the protective
5 warning layers in that sand cushion layer. I
6 believe that number was estimated to be around the
7 4,000 cubic yards of protective warning layer
8 material. That's not 4,000 cubic yards of CCR
9 that's left. It's just material on top of the
10 liner that would have to be removed.

11 **Q. And the next question, where will this CCR**
12 **be disposed?**

13 A. The material above the existing HDPE
14 geomembrane liner will be disposed in an off-site
15 landfill to be determined after the permit's
16 received and contractor returns bids and designates
17 what landfill is going to be able to receive this
18 material.

19 **Q. And then third question, is there a**
20 **fugitive dust plan in place for Pond 2 to address**
21 **dust issue during removal?**

22 A. Yes. There is a CCR fugitive dust plan in
23 place in Pond 2 and has been since the federal CCR
24 rule became effective in October 2015.

1 **Q. And that would be effective during the**
2 **removal process, right?**

3 A. Right.

4 **Q. Mr. Dehlin, we're talking about the**
5 **removal of waste if we have to do a full removal of**
6 **the liner. Approximately how much waste including**
7 **the liner would be sent to a landfill?**

8 A. So we estimated that in the expert
9 opinion.

10 **Q. In Exhibit 2, actually.**

11 A. Yes. Oh, I apologize, in the affidavit.

12 So as Mr. Dave Nielsen states in his
13 affidavit, specifically Paragraph 6, the total
14 volume of liner and underlining Poz-O-Pac soil
15 removed from Pond 2 would be approximately
16 8,700 cubic yards that would have to be removed
17 from the pond and hauled off site to a landfill.

18 **Q. And once removed, what would Midwest**
19 **Generation -- I'm sorry. I skipped a question.**

20 **And how -- approximately how much would it**
21 **cost to remove and dispose the liner and said**
22 **material?**

23 A. We estimated the labor cost to be
24 \$1,117,291.

1 **Q. And, Mr. Dehlin, did you also estimate the**
2 **cost to remove the ancillary equipment?**

3 A. It is not in the affidavit, but, yes, I
4 have since estimated the costs that would be
5 required to remove and replace the ancillary
6 equipment.

7 **Q. Do you remember what that number is?**

8 A. Yes. It's approximately \$70,000 to
9 demolish the concrete inlet structure which is --
10 there's a concrete distribution trough that the
11 waste is fed into, and then there's a concrete
12 apron along the side slope of the pond that it goes
13 down to get to the bottom of the pond. And then on
14 the opposite end at the outlet, there's an outlet
15 concrete structure. So that approximately \$70,000
16 covers demolition of both of those structures.

17 **Q. Would the number 72,815 be more**
18 **representative of --**

19 A. Yes, yes.

20 **Q. And when you say remove, that also**
21 **includes the disposal costs, right?**

22 A. Yes. That includes demolishing at the
23 site and bringing it to a landfill.

24 **Q. Okay. So once we remove the liner and the**

1 ancillary equipment, what would Midwest Generation
2 have to do to be able to use the pond as a low
3 volume waste pond?

4 A. They would then have to install a new HDPE
5 geomembrane liner as well as replace the concrete
6 structures they just demolished.

7 Q. And the new HDPE liner, would that be
8 different than the current liner?

9 A. It would be the same, would be that
10 60 mill white HDPE geomembrane liner.

11 Q. And approximately how much would it cost
12 to reline the pond with the same liner?

13 A. We estimated that it would cost
14 approximately \$160,772 for the geomembrane liner.

15 Q. Did you also subsequently calculate the
16 cost to add in the ancillary equipment?

17 A. Yes. The concrete structures, admittedly
18 a lot of concrete, would cost approximately
19 \$360,000.

20 Q. Very good.

21 I want to turn to Board Question
22 Number 12.

23 A. Okay.

24 Q. On Page 16 of the February 4, 2022,

1 recommendation, the agency states Midwest
2 Generation is required to present alternative
3 compliance methods. Please comment on whether
4 Midwest Generation intends to submit information on
5 alternative compliance methods and their costs.

6 Mr. Dehlin, what were the alternative
7 compliance methods and the costs that we presented?

8 A. The alternative compliance -- and this
9 alternative compliance to the standard for closure
10 by removal, we take out all the liners and
11 ancillary equipment and replace it, and so
12 alternative compliance methods refers to what we
13 would do instead.

14 The primary -- the cost we looked at here
15 would be the cost to clean the liner as we just
16 discussed, washing down in that systematic manner;
17 and then if it was required to demonstrate
18 decontamination, we suggested wipe samples as being
19 one option that would be available to do -- to
20 perform that demonstration.

21 Q. And just to remind us all, what was the
22 approximate cost to clean and conduct the
23 confirmatory samples of Pond 2?

24 A. Approximately \$36,000.

1 Q. Okay. I want to turn to, and only because
2 I meant to do it earlier and I missed it,
3 Board Question Number 9.

4 A. Okay.

5 Q. Midwest Generation contends that if Pond 2
6 were to be contained or constructed with CCR any
7 releases of the primary CCR indicators would have
8 been detected in the previous 10 years of
9 groundwater monitoring. Midwest Gen Response at
10 2 to 3. But Midwest Generation has also stated
11 that Pond 2 contains CCR up to 2019, Petition at
12 19. Excuse me, Petition at 9.

13 Please clarify the statements for
14 consistency.

15 A. So my understanding of Midwest
16 Generation's contention here is looking at whether
17 Pond 2 was constructed with CCR or its embankments
18 otherwise contained CCR. I think that's what the
19 contains refers to here. In general, the
20 contention is the CCR that was placed in Pond 2 was
21 placed over a liner, originally that Poz-O-Pac
22 liner, and now presently at least since up to 2019
23 an HDPE geomembrane liner. So hopefully that
24 provides clarification.

1 Q. Okay. I want to turn to Board Question
2 Number 16, please.

3 A. Okay.

4 Q. On Page 3, you state -- and this is
5 questions for Mr. Dave Nielsen and his expert
6 opinion, and so these are questions to you, sir,
7 about the expert opinion, Exhibit 3, attached to
8 Midwest Gen's petition.

9 A. Okay.

10 Q. So on Page 3, you state, "the reuse of
11 geomembrane liners from CCR surface impoundments
12 that are properly decontaminated and undamaged can
13 enhance the protection of health and the
14 environment when they are repurposed for non-CCR
15 impoundments, including low volume waste ponds."

16 Question 16A, please comment on whether
17 you have worked on projects involving the
18 decontamination and reuse of geomembrane liners in
19 CCR surface impoundments which are subject to
20 regulations like the Board rules under Part 845.

21 A. So in our experience we have not worked on
22 projects involving the decontamination of reuse
23 geomembrane liners that are subject to regulations
24 like the Board rules. For the most part, the

1 projects that we've worked on are in states that
2 either have adopted the federal CCR rule by
3 reference or just the federal CCR rule is the
4 regulations that are meant to follow.

5 And a lot of the projects that we've
6 worked on have been on unlined CCR surface
7 impoundments, so no liner was present that needed
8 to be decontaminated. It was just a process of it
9 was a closure by removal or a retrofit taking CCR
10 material that was there out and then
11 decontaminating the subgrade usually by the removal
12 of material that it was on, and then visually
13 confirming that there was no CCR material that was
14 left.

15 MR. RAO: May I ask a follow-up?

16 MS. GALE: Of course.

17 THE WITNESS: Yes.

18 MR. RAO: You're familiar with how Midwest
19 Generation has used Ponds 1 and 3?

20 THE WITNESS: Yes.

21 MR. RAO: So do you consider those ponds to be
22 repurposed from what they were intended to be
23 earlier when they were used -- I think at least one
24 of the ponds was used for containing CCR, Pond 1,

1 if I'm right.

2 MS. GALE: You are right.

3 MR. RAO: So would you consider that pond to
4 now be repurposed for storing processed water?

5 THE WITNESS: Yes. My understanding is the
6 station would like to use Pond 2 in if not the
7 same, a similar manner as currently using Pond 1.

8 MR. RAO: In the case of Pond 1 and 3, were
9 there any decontamination done similar to what is
10 being proposed here or were they just emptied and
11 then used for processed water containment?

12 THE WITNESS: My understanding is those ponds
13 were cleaned in similar manners. I had recommended
14 for decontamination where the CCR was carefully
15 removed. The geomembrane liner was visually
16 inspected for any tears, rips, punctures after
17 being pressure washed similar to the method that
18 the station would use to routinely clean the ponds
19 when it was necessary to recover storage capacity.

20 MR. RAO: Thank you.

21 BY MS. GALE:

22 **Q. We're actually just going to continue on**
23 **with the questions, the Board questions. So we've**
24 **already answered Number 17.**

1 So let's move on to Number 18.

2 A. Okay.

3 Q. On Page 5 you note, "it is my opinion that
4 performing one set of wipe samples and tests per
5 acre is an appropriate testing frequency. This
6 opinion is based on the USEPA guidance that one
7 permeability test should be performed per acre per
8 lift of compacted clay liner."

9 18A, please explain for the record how a
10 wipe test is conducted to determine whether the
11 liner is contaminated.

12 A. So there is a specific ASTM standard that
13 we referenced for this wipe test. I believe it's
14 ASTM D6966, the 2018 publication of it, which was
15 attached as Attachment B to Mr. Nielsen's expert
16 opinion. But in general what it involves is taking
17 the wipe sampling from an area of the liner, in
18 this case we would be doing one wipe sample per
19 acre, and then that wipe sample would be sent to a
20 lab and would be tested for or analyzed for what
21 constituents were picked up.

22 Q. Okay. Question 18 --

23 MR. RAO: May I ask a follow-up?

24 MS. GALE: Of course.

1 MR. RAO: So what would you consider as a
2 successful wipe in terms of, you know, finding
3 there is as indicated no contamination? Does that
4 no detection means no contamination?

5 THE WITNESS: I think ideally, yes, no
6 detection would be what we would strive for. But
7 generally when doing these kinds of tests, you want
8 some sort of background because there may be things
9 on the liner that -- I'm not thinking of any off
10 the top of my head, especially when it comes to CCR
11 constituents, but I think we would want to look at
12 a background sample of wipe geomembrane liner that
13 was manufactured using a similar process as the
14 geomembrane that was installed.

15 MR. RAO: If a wipe test comes with some
16 detection of CCR related contaminants, then would
17 that result in you going back and recleaning that
18 section?

19 THE WITNESS: Yes.

20 MR. RAO: Okay.

21 BY MS. GALE:

22 **Q. Okay. So Board Question 18B, explain the**
23 **rationale for using the testing frequency, one test**
24 **per acre, for conducting permeability tests for**

1 wipe testing. Is there any relationship between
2 permeability testing for compacted earthen liner
3 and wipe testing of HDPE liner to support the use
4 of the same testing frequency, one wipe test per
5 acre, for the wipe test?

6 A. So there's not a direct relationship other
7 than the relationship we were relying on or the
8 logic that we used was the permeability of a clay
9 liner is of the utmost importance when it comes to
10 waste containment. It's the primary purpose for
11 that clay liner being there.

12 So based on the research that's been done
13 in the referenced EPA paper that Mr. Nielsen
14 provided in his expert opinion that we reviewed and
15 industry standard being you test the permeability
16 for each lift of the clay layer that you place
17 every acre and that being the quality assurance
18 that you need to know that your clay liner is going
19 to meet its specified permeability, we feel that
20 one wipe test per acre would be an appropriate
21 quality assurance I guess to put the -- to compare
22 the two.

23 In addition, the CCR waste water the way
24 that it's placed is placed relatively uniformly

1 across the pond that all that liner other than that
2 2 feet that was above the operating water level has
3 been exposed to CCR waste water. So we would
4 expect that when you test the geomembrane in one
5 area, it's going to be representative of other
6 areas.

7 Q. And sorts of to put a finer point on that,
8 as you say, this isn't like a municipal landfill
9 where one cell has a certain type of waste, another
10 cell has a different type of waste. This, you
11 know, surface impoundment has the exact same waste
12 throughout the entire impoundment, right?

13 A. Yeah. And to continue on that analogy,
14 it's like one landfill cell where all this waste
15 has been placed and has been since, in the case of
16 the HDPE geomembrane liner, since 2008.

17 Q. Very good.

18 Question, excuse me, Question 18C,
19 considering Pond 2 is approximately 4 acres,
20 174,240 square feet, comment on whether conducting
21 four wipe tests would be adequate to demonstrate
22 that the liner is fully decontaminated.

23 A. So based on the discussion relative to
24 Question 18B here, yes, I believe that to be four

1 wipe tests, one wipe test per acre, to be adequate
2 to demonstrate that the liner is fully
3 decontaminated.

4 **Q. Okay. 18D, comment on alternative options**
5 **for testing frequency that would be more**
6 **representative of the size of the liner.**

7 A. So related to our responses to questions
8 18B and 18C, I believe one test per acre to be
9 representative for this size liner.

10 **Q. And is that consistent with existing**
11 **construction quality assurance standards?**

12 A. For compacted clay liner?

13 **Q. Yeah.**

14 A. Yes.

15 **Q. Question 18E, I believe you already**
16 **answered it, but I'll do it again.**

17 **How much does it cost to perform -- well,**
18 **how much does it cost to perform a wipe test?**

19 A. Yes. So that \$36,000 that we estimated
20 was cleaning and performing the wipe test. We
21 estimated that each wipe test would take about
22 \$2,000 to conduct it to test.

23 **Q. Board Question 19 on Page 5, you provide a**
24 **calculation of energy use to manufacture 10 acres**

1 of HDPE. However, Midwest Generation's petition
2 states that Pond 2 is approximately 3.9 acres,
3 Petition at 14.

4 19A, please clarify whether the energy
5 consumption for manufacturing 4 acres of HDPE would
6 equate to 1,720,000,000 BTUs?

7 A. Yes. That is -- that is correct.

8 Q. And then 19B --

9 A. Actually could I --

10 Q. Of course.

11 A. -- provide a clarification on that?

12 The amount of energy -- just so everyone's
13 on the same page, we found that the estimated
14 energy to manufacture the resin so that that base
15 material for the geomembrane for 10 acres of
16 60 mill HDPE would require over 4.3 billion British
17 Thermal Units or BTU of energy. So the
18 1.72 billion here is a direct linear relationship,
19 so it's disproportionate.

20 So it is correct that 1.72 billion BTU
21 would be the energy consumption for four acres of
22 HDPE liner, but specifically the resin. This
23 energy -- there would be more energy that would be
24 required in manufacturing it and transporting to

1 the site. So I just want to clarify that this was
2 for the resin.

3 **Q. And the resin, the ingredient?**

4 A. Yeah. So the polymer that we're looking
5 at here, HDPE, it's like pellets is probably the
6 best way to describe it. When the geomembrane is
7 made, you have pellets of the base material, and
8 then it's mixed in with respect to HDPE carbon
9 black and antioxidants for UV resistance. So it's
10 the -- resin is about 70 percent of the geomembrane
11 liner.

12 **Q. So I just heard you say they add an**
13 **antioxidant for UV, and we just discussed about the**
14 **UV degradation of HDPE liner. Are you telling me**
15 **that as part of the HDPE liner they considered UV**
16 **degradation?**

17 A. The manufacturer of HDPE geomembrane
18 considers it so much that the standard
19 specification requires certain criteria be met
20 under certain oxidation tests to be able to
21 estimate how long an HDPE geomembrane would last
22 when exposed to UV. The testing that I referenced
23 earlier by the Geosynthetic Research Institute,
24 looking at how long you could expect an HDPE liner

1 to last, is based on those standards.

2 Q. Okay. Board Question 19B, to provide a
3 perspective on the energy consumption, what would
4 be the energy cost based on average cost in the
5 U.S.?

6 A. So we did look at this prior to the
7 hearing, so I apologize if I stumble over some of
8 the numbers I calculated. But given HDPE
9 geomembrane liner we're looking at petroleum based
10 products, we looked at how much energy nominally
11 you could get out of one barrel of crude oil. So
12 we went to the United States Energy Information
13 Administration which has a lot of good statistics
14 on energy, and we found that approximately
15 5.7 million British Thermal Units could, I guess
16 for lack of a better term, be extracted from one
17 barrel of crude oil.

18 So if we want to put this into how many
19 barrels of crude oil it would be, you're looking at
20 about 3 -- over 300 barrels of crude oil would be
21 required for just manufacturing the resin for
22 4 acres of 60 mill HDPE geomembrane. So that's the
23 energy input required. If we look at cost, wanting
24 to keep things apples to apples, understanding that

1 our costs are in 2021 dollars from when we
2 submitted the affidavit and the expert opinion, the
3 average cost of a barrel of crude oil last year was
4 about \$68. So if you take that \$68 times 30,000,
5 you're gonna get just over \$20,000, closer to
6 \$21,000.

7 It's important to note that all these
8 dollar amounts that we've estimated are 2021
9 dollars, including the ancillary equipment
10 demolition removal I quoted today. We all know
11 that inflation is relatively high right now, not
12 just relatively high, very high right now. So just
13 that alone I would expect all these dollar amounts
14 that we've discussed here today to be increased
15 from when we originally filed this petition for
16 adjusted standard.

17 **Q. All right. Thanks.**

18 **So Question 19C, how does the energy cost**
19 **compare to the cost of replacing existing HDPE**
20 **liner with 4 acres of a new line other?**

21 A. So I hope I am answering this question as
22 intended, but I just did a direct dollars
23 comparison. So you have the \$21,000 that is based
24 off the 300 -- 300 barrels of crude oil for the

1 resin, and then we ultimately estimated the total
2 cost to manufacture, or not necessarily
3 manufacture, but to procure the new HDPE
4 geomembrane liner to install it to be approximately
5 \$160,772.

6 Q. Okay. I want to turn to Board Question
7 Number 20. Now, Mr. Naglosky answered A, B and C.
8 Looking to D, comment on whether there are any
9 significant differences between the design and
10 operation of Ponds 1 and 2 that may raise concern
11 with the reuse of decontaminated liner in Pond 2.

12 A. I do not believe there are any significant
13 differences between the design and operation of
14 Ponds 1 and 2 based on my review of the historical
15 design drawings and my understanding of the
16 operation of the ponds. They're similarly sized.

17 MR. RAO: Miss Gale?

18 MS. GALE: Yes, sir.

19 MR. RAO: Did Question Number C, 20C, was that
20 question answered?

21 MS. GALE: Yes.

22 MR. RAO: Whether the Agency's approval?

23 MS. GALE: Yes.

24 MR. RAO: I might have missed that. I'm sorry.

1 BY MS. GALE:

2 Q. Mr. Dehlin, do you recall the question to
3 Question 20C?

4 A. I do. The repurposing of Pond 1 did not
5 require the Agency's approval.

6 MR. RAO: Okay.

7 MS. GALE:

8 BY MS. GALE:

9 Q. Thank you.

10 A. You're welcome.

11 Q. Board Question Number 21, on Page 6, you
12 note that when HDPE liner is removed from an
13 impoundment, at least 6 inches of subsoil would
14 have to be removed and disposed of as well, excuse
15 me, removed and disposed of as well to confirm the
16 removal of all CCR contaminated subsoils.

17 21A, in case of Pond 2 which has a
18 Poz-O-Pac liner below the HDPE liner, is there a
19 need to excavate the subsoils below the Poz-O-Pac
20 liner?

21 A. So in the scenario that we discussed where
22 if Pond 2 is held to the standards in the Illinois
23 CCR rule where everything has to come out,
24 everything being the protective soil layers and all

1 existing liner materials which in this case would
2 be the HDPE geomembrane and the Poz-O-Pac, we felt
3 that when that gets removed as part of the
4 demolition process, there is the potential for
5 contaminated material to get into the subgrade, and
6 therefore that subgrade approximately 6 inches
7 would have to be removed.

8 **Q. And I guess I want to just sort of**
9 **elaborate on that, why you felt that. I mean, this**
10 **is a -- this would be a demolition project, right?**

11 **A. Yes.**

12 **Q. So in demolition project what happens?**

13 **A. It's -- I want to say it's certainly a**
14 **controlled process, but in terms of demolition the**
15 **contractor's coming in with an excavator and just**
16 **ripping everything out. Comparatively, when you're**
17 **installing a liner, it's a very careful, very slow**
18 **process. Demolitions especially for a pond like**
19 **this tend to happen a lot faster.**

20 **Q. Great. Thanks.**

21 **So 21B, if not, would there need to be a**
22 **transport -- excuse me. If not, would there need**
23 **be a -- I might have copied it wrong.**

24 **If not would there be a need to transport**

1 liner material using 200 dump truck loads for the
2 4-acre pond? And I believe you answered yes to the
3 prior question.

4 A. I did, yes.

5 Q. So 21C, also, please provide an estimation
6 of the number of truck loads that would be required
7 if the Poz-O-Pac liner as well as 6 inches of
8 subsection is excavated for disposal?

9 A. So we provided -- the response I'm
10 providing to this question is in Paragraph 7 of
11 Mr. Nielsen's affidavit. The Poz-O-Pac liner and
12 6 inches of subsoil we estimated to be
13 approximately 8,712 cubic yards based on a dump
14 truck with a 15 cubic yard capacity, that would
15 require about 580 dump trucks.

16 Q. That's it for the Board questions.

17 Okay. Mr. Dehlin, I just want to end with
18 in your expert opinion based upon these costs, is
19 it worth it to remove the HDPE liner in Pond 2 for
20 disposal and replace it with an identical liner?

21 A. I do not.

22 Q. Tell me why.

23 A. I believe that the existing liner based on
24 its 14 years of service, the waste that its held,

1 which I believe we've demonstrated would not cause
2 contamination that would require it to be removed,
3 and its service life is important because it's only
4 been in place for 14 years. We certainly think if
5 even if it was exposed to the elements the entire
6 time, it would still have good structural integrity
7 that it could be reused.

8 So I think based on everything that I've
9 looked at and some of this research that I brought
10 up today, that liner's in good condition. It can
11 be decontaminated by taking the ash off of it and
12 washing it down and be repurposed as a low volume
13 waste pond. I think it's a waste of time,
14 materials, and of course money to replace that
15 liner.

16 **Q. Thank you, sir.**

17 **A. You're welcome.**

18 **MS. GALE:** I have nothing further.

19 **HEARING OFFICER HALLORAN:** Thank you, Miss
20 Gale.

21 Miss Diers, you need a moment before your
22 cross?

23 **MS. DIERS:** Just a moment, thank you.

24 **HEARING OFFICER HALLORAN:** We're off the

1 record.

2 (WHEREUPON, a short recess was
3 taken.)

4 HEARING OFFICER HALLORAN: Back on the record.

5 You may proceed, Miss Diers.

6 MS. DIERS: Thank you.

7 CROSS-EXAMINATION

8 BY MS. DIERS:

9 Q. I just have a few questions.

10 A. Okay.

11 Q. One, to your knowledge has the Poz-O-Pac
12 or black silty gravel at Joliet 29 Pond 2 been
13 analyzed for soil total metals or leachable metals?

14 A. Not to my knowledge.

15 Q. It appears in your expert opinion you
16 covered the exposure and potential for the puncture
17 of the liner. However, I don't believe I read
18 where you address testing the integrity of the
19 seams of the liner. So in your expert opinion, is
20 that integrity testing of the seams of the liner,
21 would it deem the liner competent for further use?

22 A. If you were to test the seams of the
23 liner?

24 Q. Correct.

1 A. In my opinion, I do not think it is
2 necessary in this application to test the seams of
3 the liner. I think that the visual inspection
4 where you're going through the entire geomembrane,
5 which includes the seams, to identify any punctures
6 rips or tears would be sufficient.

7 **Q. Are there nondestructive methods for**
8 **testing the seams of the liner to demonstrate**
9 **competence?**

10 A. Yes.

11 **Q. And what would those be?**

12 A. One commonly used nondestructive test is
13 referred to an air channel test.

14 **Q. And what would that be?**

15 A. So you use a device to -- it runs over the
16 seams. Typically the seams that are used for an
17 HDPE geomembrane is what's referred to as a double
18 wedge seam, so it's really two welded seams. And
19 you run through the seams to confirm that there's
20 air loss and hence the air channel. So air runs
21 through it, and if you have no leaks, you're not
22 gonna have any air come out.

23 **Q. And do you think that would be an**
24 **appropriate test to use here?**

1 A. In my opinion I think that's more cost
2 time to test seams that I think can be inspected
3 visually.

4 **Q. Are you familiar with ASTM D6747-21**
5 **standard guide for selection of techniques for**
6 **electrical leak location of leaks in geomembranes?**

7 A. I am.

8 **Q. Is this ASTM a summary of various**
9 **nondestructive methods using electrical equipment**
10 **for testing whether a geomembrane has leaks?**

11 A. Yes.

12 **Q. Does this ASTM provide methods to**
13 **eliminate the removal of water or the earthen**
14 **materials within the impoundments?**

15 A. Can you repeat that question, please?

16 **Q. Sure.**

17 **Does this ASTM provide methods to**
18 **eliminate the removal of water or the earthen**
19 **materials within the impoundments?**

20 A. Does it provide -- I'm sorry. I'm having
21 difficulty following.

22 **Q. I'm not trying to trick you.**

23 A. No, I understand you're reading directly
24 from it. I'm just trying to follow.

1 **Q. That's okay.**

2 **Does the ASTM provide methods to eliminate**
3 **the removal of water or the earthen materials**
4 **within the impoundments?**

5 A. So I'm going to try to understand this or
6 going to respond to this question based on how I
7 think I'm hearing it.

8 **Q. Okay.**

9 A. That method allows for testing of the
10 integrity of the geomembrane liner after material's
11 been placed on it. There's various methods you can
12 use to test a geomembrane even if material is on
13 it. I believe that was done here when the liner
14 was installed at Joliet 29 and the protective
15 warning layers were placed on it because in my
16 opinion that's when the liner's most at risk to
17 being punctured is when you're physically placing
18 those granular materials onto the liner. So you
19 can do a leak location -- electrical leak location
20 survey on a liner when it's not exposed.

21 **Q. In the History of Construction**
22 **Appendix A-2 drawings on second and third page of**
23 **the appendix, do you have that?**

24 A. I think that's Volume 1.

1 **Q. I can wait until you get there to ask the**
2 **question.**

3 A. Thank you. Appendix A-2?

4 **Q. Yes. I have Appendix A-2 drawings on**
5 **second and third page of the appendix.**

6 A. Okay.

7 **Q. Was the composition of the granular fill**
8 **below the Poz-O-Pac determined?**

9 A. I've not seen any construction records to
10 my knowledge indicating what that granular material
11 was other than its thickness being one foot and the
12 compaction requirement.

13 **Q. Were any of the borings that you have**
14 **reviewed been installed on the interior slopes of**
15 **the Pond 2?**

16 A. No. To my knowledge, all the borings that
17 I reviewed were drilled through the crests of the
18 embankments.

19 **Q. How does the wipe test determine that**
20 **there are no contaminated subsoils as included by**
21 **Part 845.740A of the regulations?**

22 I'm assuming -- first, are you familiar
23 **with 845.740A?**

24 A. Yes.

1 **Q. Then I'll ask the question again for you.**

2 **How does the wipe test determine that**
3 **there are no contaminated subsoils as included by**
4 **Part 845.740A?**

5 A. So the wipe test as I understand it, its
6 foundation was for testing of lead constituents.
7 So you wipe the surface to be tested. In this case
8 it would be the geomembrane liner. You can bring
9 it to the lab for an appropriate test to be run to
10 determine what the constituents -- the
11 concentrations of chemical constituents that are on
12 the wipe are.

13 The most common method I'm familiar with
14 of this being is a atomic spectometry, but that is
15 also a little bit beyond my knowledge to be able to
16 fully explain that. But I know that's the test
17 that's most commonly run for a wipe test.

18 **Q. Does wipe testing test the material below**
19 **the liner?**

20 A. No. It would be testing the surface of
21 the liner.

22 **Q. If clay liners should be tested in 1-foot**
23 **lifts or less during placement, why shouldn't**
24 **subsoils be tested in 1-foot intervals of depth to**

1 **ensure that the subsoils are not contaminated?**

2 A. That's -- I think we're comparing -- let me
3 think of that. So that comparison of -- so in
4 Pond 2, what I think research has demonstrated is
5 that there's not going to be a significant
6 permeation of CCR constituents through an HDPE
7 geomembrane liner. HDPE is highly chemically
8 resistive to those types of metals based on the
9 research that we submitted here today. So I think
10 when considering that, I do not think there's a
11 need to test the subsoils underneath the existing
12 liner.

13 MS. DIERS: All right. I have nothing further.
14 Thank you.

15 HEARING OFFICER HALLORAN: Thank you,
16 Miss Diers.

17 Miss Gale, redirect?

18 MS. GALE: Just a little bit.

19 REDIRECT EXAMINATION

20 BY MS. GALE:

21 **Q. So I think we discussed this analysis of**
22 **the HDPE liner, and they mentioned the leak**
23 **location test. And I think you mentioned it, but I**
24 **want to put a finer point on it.**

1 **In 2008 when Pond 2 was relined, what sort**
2 **of testing did they do on the HDPE liner?**

3 A. There was an electrical leak location test
4 to my knowledge that was done after the protective
5 granular soil materials were placed over that
6 12-ounce geotextile fabric.

7 **Q. And that electrical leak location testing,**
8 **that confirmed there weren't any holes in it,**
9 **correct?**

10 A. Let me -- I think I know where it is. I'd
11 like to review the documentation.

12 **Q. Sure.**

13 A. Cause I know I've looked at a lot of
14 different surveys that were done for the Midwest
15 Generation site, so I want to make sure I answer
16 correctly for Joliet 29.

17 **Q. I think you want to go to your Exhibit D.**

18 A. Is this Volume 1 or 2?

19 **Q. This is Volume 2. Go to Exhibit D,**
20 **Attachment 2, which is the construction**
21 **documentation for Ponds 1 and 2.**

22 A. Okay. Yes. I do know as part of the
23 contractor submittals they submitted the results of
24 these tests.

1 Q. Yep. And you want to go to
2 Attachment A-9?

3 A. Okay. I'm there.

4 Q. In the second letter, the one that's dated
5 June 2, 2008, is that what you're thinking of?

6 A. Yes.

7 Q. Why don't you read that through to refresh
8 your recollection, then we can talk about?

9 A. Okay.

10 Q. So in these leak location tests, they
11 analyze the whole liner, right?

12 A. Correct.

13 Q. And so it's apart to make sure the seams
14 have been sealed. Is that the right word?

15 A. Not -- yeah, the seams that were
16 adequately welded. Research has shown that if
17 there's going to be punctures, tears or rips or
18 holes in the liner, seaming is where that's most
19 likely to happen. But it's also important to note
20 that when they did this, they also were wanting to
21 make sure that if, for example, an excavator went
22 too far down, and they tore in the middle where the
23 seams are. So it's not just the seams. It's
24 everything. It's the solid material that the

1 panels comprised of as well.

2 Q. So they did this in 2008?

3 A. Yes.

4 Q. Mr. Dehlin, based upon your review of the
5 use of the pond and the studies that you reviewed
6 about HDPE liners, is it necessary to do this
7 again?

8 A. I do not think it is necessary to do it
9 again based on what I said earlier. I think in
10 this application, the liner's most -- it's most
11 susceptible to tears, punctures and rips when that
12 granular material is first being placed. Something
13 that also gets mentioned when it comes to liner
14 systems for solid waste facilities is the issue of
15 settlement. If it settles too much, you can have
16 tears in the liner if it's not appropriately
17 addressed.

18 This pond has been operating in some
19 function since 1978 and has always had a liner,
20 whether that be the Poz-O-Pac liner or the HDPE
21 liner. I am not expecting significant settlement
22 that will have occurred since 2008 that would
23 necessitate a worry that the liner would even tear
24 under those kind of conditions. So we're not

1 placing material at a rate that would puncture the
2 liner in that instance, and I'm not expecting
3 significant settlement to occur.

4 Q. Okay. Mr. Dehlin, I want to turn back
5 to -- she turned you to the Sheet A of Appendix A-2
6 in the History of Construction?

7 A. Yes.

8 Q. Can you turn to those?

9 A. Yes.

10 Q. Okay. It should be if you flip to Sheet
11 Number -- I actually don't know how to read these.
12 I'm looking the one that has the cross section with
13 Section U and Section B?

14 A. Okay. I am there.

15 Q. I think in Volume 2 you have them bigger.

16 A. Okay.

17 Q. So if you go to Volume 2, Exhibit 3, so
18 your expert report, it should have them bigger?

19 A. Exhibit 3?

20 Q. Or I'm sorry. Exhibit D, sorry.

21 A. Okay.

22 Q. Attachment 3.

23 A. Yes, okay, so History of Construction.

24 Q. Yeah.

1 A. I do have them bigger. Thank you.

2 Q. So I'm looking at, for lack of better
3 term, one, two, three, four sheets in. In the
4 bottom corner it states, ponds and basins profiles,
5 sections and details, and I guess in the bottom
6 right is that a 2?

7 A. Yes, where it says --

8 Q. Fifth sheet?

9 A. Rev 2?

10 Q. Yeah, 2. So we're on the fifth sheet in.

11 A. But it's the drawing that shows Section U
12 and Section V, correct?

13 Q. Right.

14 A. Yes.

15 Q. So Ms. Diers asked you about testing the
16 embankments. Do you recall that question?

17 A. I do.

18 Q. And does Section V show a cross section of
19 Pond 2, one of Pond 2's embankments?

20 A. Yes. It shows the section, yes. That's
21 the outflow, so that would be the northeastern
22 embankment.

23 Q. Okay. And what do these cross sections
24 under there mean?

1 A. So these cross sections show the original
2 construction.

3 **Q. I'm sorry. I said it wrong. I'm not an**
4 **engineer.**

5 **So you see those bricks looking like**
6 **structure like things underneath the embankment?**

7 A. Yes.

8 **Q. The hashing or the dark color?**

9 A. Uh-huh.

10 **Q. What does that mean?**

11 A. So to -- looking at Section V which is for
12 Ash Pond 2, they don't -- they being Knoops
13 Corporation, the engineer that prepared these
14 drawings, they don't state on Section V what those
15 brick looking symbols are. However, if you look at
16 Section U, they do have that called out. Now,
17 Section U is for Ash Pond 1, but I'll explain how
18 it's applicable to Ash Pond 2 as well.

19 But they state in Section U, remove
20 existing muck not suitable for embankment and
21 replace with compacted suitable fill TYP. TYP on
22 engineering drawings means typical. That means
23 whatever this note is pointing to on that
24 engineering drawing, it is applicable throughout or

1 typical throughout, hence the use of it. So this
2 callout on Section U for Pond 1 towards those brick
3 symbols applies to the brick symbols for Section V.
4 That's how the contractor would interpret this
5 drawing.

6 So what that tells me is when the
7 excavation was done, and it looks like they also
8 had to place additional fill above the original
9 ground surface when they went to build the
10 embankment, they placed what would be termed here
11 compacted suitable fill. And it looks like that
12 extends up to the crest elevation for which we have
13 borings that have been drilled through that
14 material.

15 **Q. And what does that mean to you? What does**
16 **that tell you?**

17 A. That tells me that the material that was
18 placed here during construction of Pond 2 was
19 earthen materials, clays, sands, gravels, highly
20 unlikely that it is CCR material.

21 **Q. Okay. Great.**

22 **Ms. Diers also asked you about the wipe**
23 **sampling comparing it to the clay liner, the lifts**
24 **of clay liner, and the wipe sampling or, excuse me,**

1 the sampling of the lower levels of the clay liner
2 and the lifts and the wipe sampling. Mr. Dehlin,
3 when they sample the lift, lower lifts of the clay
4 liner, each lift is part of the liner, correct?

5 A. Correct.

6 Q. And so in this case, so there -- and what
7 are they sampling for? What's the purpose of
8 sampling each lift at that clay liner?

9 A. You want to confirm that the permeability
10 that has been specified for the liner is being met,
11 typically tested at one location per acre.

12 Q. And so each lift of the clay liner, that's
13 the whole liner, right?

14 A. When you say whole liner, are you
15 referring to area?

16 Q. Well, it's all part of the same clay
17 liner, right?

18 A. Yes. The liner when specified is going to
19 come from the same borrow source, whether that's on
20 site or off site. The test that's being done is
21 less about the material, and it's more about
22 ensuring that the contractor is following
23 appropriate compaction methods and applying that
24 throughout the entire liner to ensure that the

1 permeability requirements are being met.

2 Q. Got it.

3 And so in your comparison of using that
4 one acre, one sample per acre, that is simply a --
5 not necessarily an apples and apples, right?
6 They're not doing a wipe sample for the clay liner.
7 It's just your method of trying to get a
8 representative sample as that they use in a clay
9 leaner, right?

10 A. Correct. It's a quality assurance
11 comparison. So if testing the liner for its most
12 important quality once per acre is sufficient in
13 that application, then our feeling is that if
14 demonstrating the liner is decontaminated through
15 analytical testing is required, that this would be
16 a suitable option for performing that demonstration
17 and at that one-per-acre rate.

18 Q. And when they're installing this clay
19 liner and confirming that each layer has the proper
20 permeability, do they sample the subsoils?

21 A. There's -- typically for these types of
22 applications, the subgrade has to be compacted,
23 rolled smooth. That's very typical for this. So,
24 yes, it is tested. Frequencies can change honestly

1 depending on the type of subgrade that's present,
2 but you're not testing that the permeability of the
3 subgrade that is irrelevant in a waste containment
4 application. You're looking at testing the
5 permeability of the materials that are being used
6 to prevent the waste from leaking into the
7 groundwater.

8 MS. GALE: Okay. Mr. Halloran, may we have a
9 minute?

10 HEARING OFFICER HALLORAN: Yes. We're off the
11 record.

12 (WHEREUPON, a discussion was had
13 off the record.)

14 MS. GALE: I have nothing further.

15 HEARING OFFICER HALLORAN: All right.

16 Miss Gale has indicated she has nothing further on
17 the redirect.

18 Miss Diers, re-cross?

19 MS. DIERS: Nothing further. Thank you.

20 HEARING OFFICER HALLORAN: Miss Gale, have you
21 rested your case in chief?

22 MS. GALE: Yes. I would just like to move to
23 admit the exhibits that were attached to our
24 original petition and recommendation as well as

1 Exhibits 29, 30, 31, 32, 33, 34, 35, 36 and 37.

2 And I believe per -- and I can't remember the
3 specific rule of the Board rules, I will then file
4 these exhibits except for the Poz-O-Pac with the
5 Board electronically within I think seven days,
6 29 through 37.

7 HEARING OFFICER HALLORAN: 29 through 37, okay.

8 Miss Diers, any objection?

9 MS. DIERS: No objection.

10 HEARING OFFICER HALLORAN: Thank you. They are
11 so admitted.

12 Miss Gale, have you rested your case in
13 chief.

14 MS. GALE: I do now. Thank you, sir.

15 HEARING OFFICER HALLORAN: Thank you. Let's
16 take a quick minute. Off the record.

17 (WHEREUPON, a short recess was
18 taken.)

19 HEARING OFFICER HALLORAN: We can go back on
20 the record. Midwest has just rested their case in
21 chief. Miss Diers from the Agency stated she would
22 like to respond to the Board questions at a later
23 date and then follow-up responses by Midwest. And
24 the parties have agreed to figure out a timeline

1 when that'll happen, and then you can email me. I
2 know some of you are on vacation, but try to email
3 me as soon as possible with some kind of schedule.

4 MS. DIERS: I was looking at our response is
5 due July 8, just to give you a time frame. I go on
6 vacation right after the 8th. I'm in next week, so
7 I can get them out by July 8 before I go. Just to
8 give you something to think about, if you want to
9 follow up with Brad on what that looks like or what
10 you need to respond back and stuff, but that's kind
11 of what I was thinking.

12 MS. GALE: That's next Friday.

13 MS. DIERS: Yeah.

14 MS. GALE: So we can respond by July 22.

15 MS. DIERS: Okay.

16 MS. GALE: And then after this we'll have to
17 discuss briefing schedules for the closing brief.

18 HEARING OFFICER HALLORAN: Right. All right.

19 Miss Diers, you're on.

20 MS. DIERS: All right. Thank you. I was gonna
21 ask a few questions of Miss Hunt, but I've decided
22 not to. I have Miss Hunt here, Mr. Rompot,
23 Mr. Hubbard. They all three filed affidavits in
24 this matter that were attached to our

1 recommendations. I believe they were Attachment A,
2 B, let me see if I got the other one, and H. I
3 believe that is correct for those. So they are
4 here. They are open to the Board, to Miss Gale to
5 ask questions. I don't know who you would like to
6 ask first, how you would like to do it. I will
7 leave it up to you.

8 HEARING OFFICER HALLORAN: And if questions are
9 asked, we'll put him or her up.

10 MS. DIERS: Do you want them all three just to
11 sit up there now and swear them in or --

12 MS. GALE: I think one at a time makes sense.
13 I think the order doesn't really matter to me. Why
14 don't we start with Mr. Hubbard?

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

17 THOMAS HUBBARD,
18 called as a witness herein, having been first duly
19 sworn, was examined and testified as follows:

20 DIRECT EXAMINATION

21 BY MS. GALE:

22 Q. Mr. Hubbard, I don't believe you have in
23 front of you your affidavit. Have you read it
24 recently?

1 A. Yes.

2 Q. You have it there, excellent.

3 And this is Exhibit I of the Agency's
4 recommendation?

5 A. It says H on it.

6 MS. DIERS: I had H.

7 MS. GALE: You're right. I'm sorry. I have it
8 double-sided.

9 BY MS. GALE:

10 Q. Exhibit H of the Agency's, so please turn
11 to Paragraph 4 of your affidavit where you state, I
12 reviewed the records of the permit section within
13 the Bureau of Land. And you mean the records for
14 Pond 2 at Joliet 29? Is that what you're talking
15 about?

16 A. Yes. I looked to see if they had applied
17 for beneficial reuse under Section 3.135 of the
18 act.

19 Q. Do you remember --

20 Ms. Gale: Section 3.135 of the act, I would
21 like to make that Exhibit 38.

22 (WHEREUPON, Exhibit No. 38 was
23 marked for identification.)

24

1 BY MS. GALE:

2 Q. So can you point me to which section
3 you're referring to in Section 3.135? It's rather
4 lengthy.

5 A. It is. It's Subpart B, says to encourage
6 the promotion of utilization --

7 MS. DIERS: Can you speak up?

8 THE WITNESS: Sorry. In Subpart B, it says, to
9 encourage and promote the utilization of CCB in
10 productive and beneficial applications, upon
11 request by the applicant the Agency shall make a
12 written beneficial use determination that coal
13 combustion waste is CCB when used in this manner
14 other than those uses specified in Subsection A.
15 And it continues on.

16 BY MS. GALE:

17 Q. Okay. So other than those uses specified
18 in Subsection A?

19 A. Correct.

20 Q. Can you turn to Subsection A? And I'm
21 looking at A2 which states, the use of CCB as a raw
22 ingredient or mineral filler, the manufacture of
23 the following commercial products, cement, concrete
24 and concrete mortars, cementitious products

1 including block pipe and precast distressed
2 components. Do you see that there?

3 A. Yes.

4 Q. So Subsection A2 is excluded from where
5 you review in B, right?

6 A. Correct.

7 Q. And so you don't consider or you don't
8 receive or need to approve the use of coal
9 combustion waste when used in cementitious
10 products, correct?

11 A. Correct.

12 Q. I just want to point to you -- I believe,
13 correct me if I'm wrong -- no, actually I don't. I
14 take that back.

15 I want to turn back to B, so in under B,
16 generally speaking, would be uses of like using
17 coal combustion waste, I guess I'll say this.

18 Coal combustion waste is effectively coal
19 combustion residuals, right?

20 A. Right.

21 Q. When we say CCR, it can mean CCW?

22 A. Yes.

23 Q. Under B, when you're considering the
24 beneficial application of a coal combustion waste

1 as CCB, first you're considering the coal
2 combustion waste, correct? Like whether it's coal
3 combustion waste, you're looking at whether coal
4 combustion waste can be used as coal combustion
5 byproduct, right?

6 A. Yes.

7 Q. So you would not expect to receive an
8 application or data analysis for fill that is not
9 coal combustion waste, correct?

10 A. Correct. The section is specifically for
11 coal combustion waste or residual.

12 MS. GALE: Okay. I have nothing further.

13 HEARING OFFICER HALLORAN: Thank you.

14 MS. DIERS: I have no questions.

15 HEARING OFFICER HALLORAN: You may step down,
16 Mr. Hubbard. Thank you.

17 (Witness excused.)

18 MS. GALE: I'd like Mr. Rompot, if I may.

19 (WHEREUPON, the witness was
20 duly sworn.)

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DEREK ROMPOT,

called as a witness herein, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MS. GALE:

Q. Mr. Rompot, what do you have in front of you?

A. I have a copy of my affidavit, a site plan, and copies of the MPDS permits and the 19 -- the construction permit for the liner replacement.

Q. In 2008?

A. 2008.

Q. Okay. And are those going to be used as exhibits here or what are they here for?

A. Just for my reference in case I'm asked questions about the specifics of any of the permits.

Q. Got it. Are those the documents you looked at when you stated the statements in your affidavit?

A. Yes, it was. Yes, they are.

Q. Anything else other than those documents?

A. When I prepared my statement, I reviewed all the permits that Illinois EPA had issued.

1 There were multi -- there are several permits
2 basically for sledge application that were state
3 permits that I did not make copies of or consider
4 in the review because they're irrelevant to Pond
5 Number 2.

6 Q. And you mean all the permits. So you're
7 talking air permits, too, or what if kind of?

8 A. Bureau of Water permits.

9 Q. Thank you.

10 Okay. And how far back do those permits
11 go?

12 A. The earliest permit we had was the initial
13 MPDS permit which was issued in September 7, 1984.

14 Q. Okay. So you state here in Paragraph 5 of
15 your affidavit, I have not been able to locate a
16 permit for the initial construction of Pond 2.

17 A. That is correct.

18 Q. You don't know if a permit for the initial
19 construction of Pond 2 was required, do you?

20 A. That is correct.

21 Q. You also talk about paragraph Number 7
22 and -- I'm sorry. Paragraph 7, you also talk about
23 the notification of beneficial use or reuse of CCR
24 material Joliet 29. You see that there?

1 A. Yes.

2 Q. Is that related to or similar to
3 Mr. Hubbard's analysis under section -- about coal
4 combustion byproduct?

5 A. That is correct.

6 Q. Are you familiar with that statute?

7 A. Yes.

8 Q. Okay. Do you have it in front of you,
9 Exhibit 37?

10 A. I do not have it in front of me.

11 Q. Where did it go?

12 MS. DIERS: Is it Exhibit 38?

13 THE WITNESS: Section 3.135 of the Illinois
14 Environmental Protection Act.

15 BY MS. GALE:

16 Q. Okay. Can you turn to Section B on the
17 second page?

18 A. Yes.

19 Q. Is that the section you're referring to in
20 Paragraph 7 of the beneficial reuse?

21 A. It is, yes.

22 Q. So, yeah. So Section B states, to
23 encourage and promote utilization of CCB and
24 productive and beneficial applications upon request

1 by the applicant, the Agency shall make a written
2 beneficial use determination that coal combustion
3 waste is CCB.

4 That's -- we're on the same page?

5 A. Correct.

6 Q. And then it continues, when used in a
7 manner other than those specified in Subsection A
8 of this section. You see that there?

9 A. Yes.

10 Q. Can you turn to Subsection A?

11 A. I am there.

12 Q. So Subsection A, I'll start with A and
13 then skip to 2. Coal combustion byproduct means
14 coal combustion waste when used beneficially in any
15 of the following ways. 2, the use of CCB as a raw
16 ingredient or mineral filler in the manufacture of
17 the following commercial products, cement, concrete
18 and concrete mortars, cementitious products,
19 including block pipe and precast, prestressed
20 components, and it continues.

21 Do you see that there?

22 A. Yes.

23 Q. So under Section 3.135, you would not get
24 an application for beneficial reuse for

1 cementitious products, correct?

2 A. Correct.

3 Q. Let's go back to Section B. Section B is
4 regarding the determination of the use of coal
5 combustion waste as CCB, correct?

6 A. Correct.

7 Q. So you wouldn't expect to receive an
8 application for fill material that is not coal
9 combustion waste, would you?

10 A. Correct.

11 MS. GALE: Nothing further.

12 HEARING OFFICER HALLORAN: Miss Diers?

13 MS. DIERS: I have no questions. Thank you.

14 HEARING OFFICER HALLORAN: You may step down.

15 Thank you.

16 (Witness excused.)

17 MS. GALE: And last, but certainly not least,
18 Miss Hunt.

19 (WHEREUPON, the witness was
20 duly sworn.)

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LAUREN HUNT,

called as a witness herein, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MS. GALE:

Q. Good morning or, yep, we're still morning. What do you have in front of you?

A. This is the recommendation as I submitted it to the Board and then the updated Quarter 1 Joliet 29 groundwater data summary.

HEARING OFFICER HALLORAN: I'm sorry. Could you state your name for the record, please?

THE WITNESS: Lauren Hunt, L-a-u-r-e-n, H-u-n-t.

BY MS. GALE:

Q. So you said Quarter 1 in the --

A. 2022.

Q. Thank you.

A. Yeah.

Q. We didn't -- weren't sure if we heard the year.

Miss Hunt, you do not have a degree in engineering, correct?

A. Yes, correct.

1 MS. DIERS: Make sure you speak up for the
2 court reporter, please.

3 THE WITNESS: Okay.

4 BY MS. GALE:

5 Q. You're not a licensed professional
6 engineer?

7 A. That is correct.

8 Q. And in your employment history you have no
9 experience as an engineer, correct?

10 A. Can you please clarify?

11 Q. What are you confused by? I guess, I did
12 not see -- I guess tell me in your employment
13 history where you were employed as an engineer.

14 A. Again, please clarify what you mean by
15 working as an engineer.

16 Q. Okay. What is your understanding of
17 working as an engineer?

18 A. I have worked internationally in support
19 of and with the engineers, but also making field
20 engineering decisions. So I am again asking for
21 clarification.

22 HEARING OFFICER HALLORAN: Could you keep your
23 voice up, please?

24 THE WITNESS: Sorry.

1 HEARING OFFICER HALLORAN: No, no, that's fine.

2 BY MS. GALE:

3 Q. So you can open up to your affidavit,
4 Attachment 1.

5 A. Okay.

6 Q. And go to your -- you're at Exhibit A,
7 Attachment 1?

8 A. Yes.

9 Q. What work are you referring to where you
10 worked with a engineer? And you can tell me here
11 in your exhibit, Attachment 1.

12 A. Can you clarify?

13 Q. Yes. I'm looking at your CV, right?

14 A. Okay.

15 Q. And your CV identifies where you worked,
16 right?

17 A. Correct.

18 Q. So you just told us that you worked in
19 capacities with engineers and in the field with
20 engineers. Can you identify to me what you're
21 referring to?

22 A. Apparently they did not put my CV in here.
23 When I was working internationally.

24 Q. Yeah. Sure, when you were working

1 internationally. Yes. That's clarifying. When
2 you told me you worked internationally with
3 engineers, where was that?

4 A. When I worked in the Middle East.

5 Q. Okay. Where in the Middle East?

6 A. United Arab Emirates.

7 Q. And who were you working for?

8 A. CH2M Hill.

9 Q. And what was your title when you were
10 working for them?

11 A. May I confer with counsel?

12 HEARING OFFICER HALLORAN: Yes, you may.

13 (WHEREUPON, a discussion was had
14 off the record.)

15 HEARING OFFICER HALLORAN: You may continue,
16 Miss Gale. Thank you.

17 THE WITNESS: All right. I worked in the
18 Middle East in the United Arab Emirates in the
19 capacity of reviewing and providing engineering
20 guidance for a confidential client and confidential
21 project. The work encompassed meteorology,
22 biology, hydrogeology, geotechnical engineering,
23 geophysics, geology, foresight characterization for
24 a confidential site. And I am held by an NDA, so

1 that is all I can say. And it was in 2009.

2 BY MS. GALE:

3 Q. So --

4 A. In 2008, sorry.

5 Q. What was your position title?

6 A. Site characterization site manager.

7 Q. Okay. And you listed off a bunch of
8 things that you did. What were your primary
9 duties, generally speaking, without breaching any
10 NDA?

11 A. Reviewing all of the documents that came
12 in for planning characterization and then
13 implementation in the field to ensure that it was
14 still being implemented appropriately.

15 Q. And were some of these documents prepared
16 by engineers?

17 A. Yes.

18 Q. And this project, was it related to
19 contamination?

20 A. Can I confer with counsel.

21 MS. DIERS: Can we go off the record?

22 HEARING OFFICER HALLORAN: Yeah. Let's go off
23 the record.

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(WHEREUPON, a discussion was had
off the record.)

HEARING OFFICER HALLORAN: Let's go back on the
record.

Miss Gale, ask your question again.

BY MS. GALE:

**Q. So what you were doing was you said
geotechnical, biology. Was it related to civil
engineering?**

A. Yes.

Q. Was it related to a impoundment?

A. That would have been part of the overall
design of the facility.

Q. Okay. Did it involve a geomembrane liner?

A. Given the nature of the project, that
would have not have been something of consideration
at that time.

Q. Did it involve Poz-O-Pac?

A. It was 2008 and 2009, and Poz-O-Pac was
out of trademark by then. So I wouldn't -- I guess
I'm confused by the question.

**Q. Did it involve any material equivalent to
Poz-O-Pac?**

A. Not that I'm aware of right now.

1 Q. Did it involve any type of liner?

2 A. Not that I'm aware of.

3 Q. So when I asked you originally about you
4 said you have experience working with engineers,
5 and you said internationally, does what we just
6 discussed cover how you worked with engineers?

7 A. No.

8 Q. Okay. What other instances have you
9 worked with engineers?

10 A. I worked as an engineering, excuse me,
11 engineering geologist with our -- with at the time
12 the tunneling transportation and water
13 infrastructure business units within CH2M Hill, now
14 Jacobs.

15 Q. Okay. And when you were -- your title was
16 an engineering geologist?

17 A. Can you clarify?

18 Q. When you just described you worked at
19 CH2M Hill, what was your title?

20 A. Geologist.

21 Q. Thank you.

22 And your educational degrees were in
23 geology and hydrology, correct?

24 A. My educational degrees are in geology and

1 hydrogeology.

2 Q. Oh, sorry, hydrogeology.

3 Okay. But you're not a licensed
4 professional geologist?

5 A. No.

6 Q. Miss Hunt, you understand that the
7 Joliet 29 CCR was primarily disposed at the Lincoln
8 Stone Quarry across the river, correct?

9 A. Can you repeat the question?

10 Q. Sure.

11 You understand that the CCR that was
12 generated at Joliet 29 was disposed at the Lincoln
13 Stone Quarry, correct?

14 A. That was not a part of my investigation
15 for this, for the purpose of this.

16 Q. Oh, so you don't know that it was disposed
17 at the Lincoln Stone Quarry?

18 A. I cannot speak to whether or not it was.

19 Q. You were here yesterday when Mr. Naglosky
20 testified, correct?

21 A. Correct.

22 Q. So you heard him testify that a vast
23 majority of the CCR went to the Lincoln Stone
24 Quarry, right?

1 A. That is correct.

2 Q. Okay. But before yesterday, you didn't
3 look at whether -- where most of the CCR that was
4 in Pond 2 or the CCR that was part of Joliet 29,
5 you didn't consider where it went?

6 A. That is correct.

7 Q. Okay. Ms. Hunt, you're familiar with
8 groundwater seepage velocity?

9 A. That is correct.

10 Q. And so you're familiar that that's the
11 velocity of the groundwater as it seeps through the
12 ground, right?

13 A. Correct.

14 Q. But in your analysis at Joliet 29, you
15 didn't consider the groundwater seepage velocity
16 below groundwater in Pond 2, correct?

17 A. As a representative of the Agency, we do
18 not have access to all of that data that would be
19 required for that analysis.

20 Q. So you're not aware that that data was
21 submitted to the Agency?

22 A. That was not the focus of my
23 investigation.

24 Q. Okay. So I guess to clarify my

1 understanding, you don't know whether the Agency
2 has that data?

3 A. It wasn't in my scope of my investigation,
4 no.

5 Q. Ms. Hunt, you're familiar with the
6 Illinois Tiered Approach to Corrective Action
7 objectives, so commonly called TACO values under
8 Part 742?

9 A. Yes.

10 Q. Okay. But you did not review the soil
11 background values under TACO, correct?

12 A. That is correct.

13 Q. Okay. And, Ms. Hunt, let's look at your
14 affidavit. Do you have it in front of you?

15 A. Yes.

16 Q. And, generally speaking, and speaking in
17 Paragraphs 21, 22 and 23, you relied upon
18 Recommendation Exhibit D, right?

19 A. You said 21, 22 and 23?

20 Q. Yeah.

21 A. I relied on Recommendation Exhibit D, E
22 and G it looks like.

23 Q. I want to focus on Exhibit D, so just
24 to -- Exhibit D, and you can look, is the History

1 of Construction, correct?

2 A. Correct.

3 Q. Okay. And then in Paragraphs 21, 22 and
4 23, you relied upon the History of Construction
5 which is Exhibit D, Attachment 3, Appendix A-3, and
6 I guess also in 23 A-2, right?

7 A. That's correct, I believe. Yes, that is
8 correct.

9 Q. But you did not rely upon A-4, correct?

10 A. Let me see what A-4 is. I'm sorry.

11 Can you clarify the question?

12 Q. Well, I'm looking at your Paragraphs 21,
13 22 and 23, where you state you relied upon
14 Appendix A-3 in each of those paragraphs.

15 Do you see that there?

16 A. That is correct.

17 Q. And you don't state in Paragraphs 21, 22
18 and 23 that you relied upon A-4, correct?

19 A. I don't say that, correct.

20 MS. GALE: I have nothing further.

21 HEARING OFFICER HALLORAN: Thank you,
22 Miss Gale.

23 Miss Diers?

24 MS. DIERS: I have nothing. No questions.

1 HEARING OFFICER HALLORAN: Thank you. You may
2 step down. Thank you so much.

3 (Witness excused.)

4 HEARING OFFICER HALLORAN: Let's go off the
5 record, please.

6 (WHEREUPON, a short recess was
7 taken.)

8 HEARING OFFICER HALLORAN: Back on the record.
9 The parties have agreed. We believe the transcript
10 should be ready by July 7, 2022. Based on that,
11 the parties are filing simultaneous briefs
12 September 13, 2022, responses due October 7.
13 Public comment is due August 5, 2022. And then
14 they agreed the Agency will get their answers to
15 the questions out by I believe you said July 8,
16 Midwest to respond July 22, Agency answer by
17 July 29.

18 Does that sound correct?

19 MS. DIERS: Correct.

20 HEARING OFFICER HALLORAN: All right. I think
21 we're finished.

22 MS. DIERS: I just have one more thing, just a
23 procedural --

24 HEARING OFFICER HALLORAN: Yes.

1 MS. DIERS: I believe everything is in the
2 record because we attached it to our
3 recommendation. I just want to move everything
4 that we had attached to our recommendation into the
5 record.

6 MS. GALE: No objection.

7 HEARING OFFICER HALLORAN: Terrific. And then
8 you can address that, too, in your exhibits.

9 MS. DIERS: Thank you.

10 MS. GALE: No objection here.

11 MS. DIERS: Thank you.

12 HEARING OFFICER HALLORAN: That's granted.
13 Thank you all. Safe drive and we're just out of
14 here perfect timing. Thank you so much. 1130.

15 (WHEREUPON, proceedings were
16 adjourned at 11:30 a.m.)

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1 STATE OF ILLINOIS)
2) SS:
3 COUNTY OF C O O K)
4

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

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Raelene Stamm
Certified Shorthand Reporter

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