

ORIGINAL

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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)
COAL COMBUSTION WASTE (CCW)) R14-10
AND SURFACE IMPOUNDMENT) (Rulemaking- Water)
POWER GENERATING)
FACILITIES: PROPOSED NEW)
35 ILL. ADM. CODE 841)

REPORT OF THE PROCEEDINGS held in the
above entitled cause before Hearing Officer
Timothy Fox, called by the Illinois Pollution
Control Board, taken by Steven Brickey, CSR, for
the State of Illinois, 100 West Randolph Street,
Chicago, Illinois, on the 15th day of May, 2014,
commencing at the hour of 9:01 a.m.

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STATE OF ILLINOIS
Pollution Control Board

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REPORTED BY:

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1 HEARING OFFICER FOX: Good morning
2 and welcome back to the second day of the second
3 hearing in this docket rulemaking R14-10, Coal
4 Combustion Waste CCW and Surface Impoundment Power
5 Generating Facilities: Proposed new 35 Ill. Adm.
6 Code 841.

7 When we broke for the day
8 yesterday, Ms. Franzetti was in the middle of
9 questions that she had pre-filed for the
10 environmental groups witnesses and in just a
11 moment we can swear in Dr. Soderberg and
12 Mr. Armstrong to resume those questions today
13 where we had left off. Before we do that, I do
14 want to make one brief housekeeping announcement.
15 As I mentioned yesterday, the Board has its
16 regularly scheduled meeting this morning at 11:00.
17 That will be taking place upstairs in the Board's
18 video conference room. We will have to break for
19 that at approximately ten minutes to 11:00.

20 Since we will not be conducting
21 the meeting here, you'll certainly be able to stay
22 here in this room and get lunch or take any other
23 break that you would wish to take at that time.
24 Any questions before we get underway? Very good.

1 If the court reporter will swear in the two
2 witnesses I named, we can get underway,
3 Ms. Franzetti, very quickly.

4 WHEREUPON:

5 KEIR SODERBERG and ANDREW ARMSTRONG
6 called as witnesses herein, having been first duly
7 sworn, deposeth and saith as follows:

8 HEARING OFFICER FOX: Ms. Franzetti,
9 you had wrapped up with your 16th question on page
10 four of your pre-filed questions. If you're ready
11 to go onto number 17, please go ahead.

12 MR. ARMSTRONG: One point of
13 clarification. Yesterday we also swore in
14 Ms. Barkley as a panel witness.

15 HEARING OFFICER FOX: Mr. Armstrong,
16 you have corrected me appropriately. Ms. Barkley,
17 I am sorry that I overlooked the pre-filed that
18 you had given. If we can also have you be sworn
19 in as well.

20 WHEREUPON:

21 TRACI BARKLEY
22 called as a witness herein, having been first duly
23 sworn, deposeth and saith as follows:

24 HEARING OFFICER FOX: Thank you,

1 Mr. Armstrong. Ms. Franzetti, sorry for
2 interrupting.

3 MS. FRANZETTI: Thank you, Mr. Fox.
4 Good morning, Dr. Soderberg.

5 MR. SODERBERG: Good morning.

6 MS. FRANZETTI: Turning to question
7 17. In the last paragraph on page four and
8 continuing onto page five of your pre-filed
9 testimony, you advocate a period of more frequent
10 monitoring when a new well is installed or for
11 instances where a new background value has to be
12 established. Explain why more frequent monitoring
13 is necessary where a new background value has been
14 established.

15 MR. SODERBERG: So in looking at the
16 text in my pre-filed testimony, yes, so my
17 intention with that paragraph is as discussed
18 yesterday to ensure that there are enough data
19 points to guide the logistics and to come up with
20 robust conclusions from the statistics. With
21 respect to generating a new background value, I
22 believe my intention with the paragraph in
23 referring to more frequent monitoring when a new
24 well is installed is more along the lines of when

1 you're starting from scratch and you have no data
2 from that monitoring well, you can benefit from a
3 more frequent set of monitoring data that gives
4 you sort of a jump start to get a robust
5 statistical conclusion.

6 MS. FRANZETTI: Dr. Soderberg, do
7 you know whether in the environmental groups
8 revised proposed rules there were changes made to
9 reflect this aspect of your pre-filed testimony?

10 MR. SODERBERG: I believe there
11 were.

12 MR. ARMSTRONG: I can address that
13 point. The environmental groups on page 23 of the
14 proposal Section 841.225(c) amended the proposed
15 rule to require a minimum of eight data points as
16 recommended by the 2009 Unified Guidance. So that
17 reflected Dr. Soderberg's testimony as to the
18 advisability of more data points.

19 MS. FRANZETTI: And, Dr. Soderberg,
20 is it your opinion that you need a minimum of
21 eight data points to establish a background value?

22 MR. SODERBERG: There are many
23 approaches within the Unified Guidance document
24 for establishing a background value. Some of

1 those approaches will give you a result with fewer
2 than eight data points, but in order to ensure a
3 more robust result the Unified Guidance suggests
4 having at least eight to ten data points.

5 MS. FRANZETTI: Is it your opinion
6 that an owner or operator of such a monitoring
7 well must have at least eight data points before a
8 background value can be established?

9 MR. SODERBERG: To be most
10 consistent with the Unified Guidance, I would say
11 yes.

12 MS. FRANZETTI: Moving to question
13 18.

14 MS. OLSON: I have a quick follow
15 up.

16 MS. FRANZETTI: Yes.

17 MS. OLSON: This is for -- I think
18 Andrew might know the answer to this question, but
19 can you explain why if you want eight data points
20 to establish a background why the change was not
21 made to proposed Section 841.220?

22 MS. FRANZETTI: Which section,
23 counsel?

24 MS. OLSON: 841.220 is called

1 Determining Background Values and I believe the
2 testimony that was given was that they made a
3 change to 841.225 statistical methods and the
4 testimony was that the eight data points was
5 needed to establish background values, yet there
6 is no change in 841.220 Determining Background
7 Values.

8 MR. ARMSTRONG: So the question is
9 why was a similar amendment not made to Section
10 841.220?

11 MS. OLSON: Or why was the amendment
12 made in 841.225 and not 841.220?

13 MR. ARMSTRONG: Proposed Section
14 841.220(b) from the Agency provides that the
15 number and kinds of samples collected to establish
16 background must be appropriate for the type of
17 statistical test employed as prescribed in Section
18 841.225 of this part and the 2009 Unified Guidance
19 incorporated by reference in Section 841.120 of
20 this part. Therefore, the intent of the
21 environmental groups was that by amending Section
22 841.225 that impacts Section 841.220(b).

23 MS. OLSON: So when looking at
24 841.225, where does it say that the minimum of

1 eight data points is to establish background
2 versus all statistical analysis?

3 MR. ARMSTRONG: The Section 841.220
4 references Section 841.225 in terms of the number
5 and kinds of samples that are collected to
6 establish background must be appropriate for this
7 type of statistical test as prescribed in 841.225.

8 MS. OLSON: I understand that, but
9 my question is is your change to 841.225(c) the
10 minimum of eight data points specifically and only
11 for determining background or is that a
12 requirement for every single statistical analysis
13 performed under 841.225? And the reason why I ask
14 these questions is because the environmental
15 groups has proposed that a statistical analysis be
16 performed every time sampling is done and I don't
17 understand how you can have eight data points and
18 do sampling every time a quarterly sampling round
19 comes around because you'd only have one
20 additional data point.

21 MR. ARMSTRONG: So if I understand
22 your question correctly, the question is with
23 respect to both the statistical analysis that is
24 required later on in the rule as well as the

1 background analysis whether eight data points are
2 required?

3 MS. OLSON: Yes.

4 MR. ARMSTRONG: Yes. And I think it
5 might be appropriate for Dr. Soderberg to explain
6 how eight data points could be used in
7 establishing -- in conducting the statistical
8 analysis.

9 MS. OLSON: So before we get there
10 I'm just curious what the answer is. Is the
11 answer yes, it is going to be needed for both
12 background and every single statistical analysis?
13 Is the answer to that question yes?

14 MR. ARMSTRONG: Yes. I'll let
15 Dr. Soderberg explain how eight data points can be
16 used for a statistical analysis.

17 MS. OLSON: Perfect.

18 MR. SODERBERG: So the example you
19 gave of your new data points to provide quarterly
20 monitoring and wanting to compare that to
21 background, there are certainly options within the
22 Unified Guidance where you're comparing a single
23 data point to a background -- a set of background
24 values or background statistics. The eight to ten

1 data point minimum that is recommended in the
2 Unified Guidance as far as I understand it with
3 respect to background values refers to the
4 establishment of the background statistic, not to
5 that single data point that you're now comparing
6 to background statistics.

7 MS. OLSON: So if I understand what
8 you're saying, you wouldn't need eight data points
9 to do the statistical analysis, is that what
10 you're saying?

11 MR. SODERBERG: Your question was
12 about having a new data point and now comparing
13 that to background, establishing background would
14 require eight to ten data points as recommended by
15 the Unified Guidance. Does that answer your
16 question?

17 MS. OLSON: I'm curious how the
18 sample size for a statistical method, the change
19 made by the environmental groups, affects the
20 statistical analysis that is proposed to be done
21 quarterly.

22 MR. ARMSTRONG: Our intent is that
23 the statistical analysis that is performed
24 quarterly would reflect due to the establishment

1 of a past background value at least eight sample
2 sizes because of the establishment. Eight data
3 points in a sample size. It's not the intent
4 that eight data points would be required to
5 conduct -- eight new data points would be required
6 to conduct statistical analysis.

7 MS. OLSON: Are you building on the
8 background eight data points plus one new data
9 point equaling nine or do you need -- is that what
10 you're saying?

11 MR. SODERBERG: I'm sorry. Can you
12 repeat the question?

13 MS. OLSON: So are you building on
14 the eight previous data points and then when the
15 new statistical analysis comes out you're just
16 adding that in?

17 MR. SODERBERG: Yes.

18 MS. OLSON: Does the rule specify
19 the timeframe for the eight data points as
20 proposed by the environmental groups?

21 MR. SODERBERG: Does the rule
22 specify the timeframe for the data points?

23 MR. ARMSTRONG: No. There is no
24 specification in the rule for timing of those

1 eight data points.

2 MS. OLSON: That's all I have. Hold
3 on. Sorry. So if the facility is on quarterly
4 sampling, it would take two years to establish
5 eight data points, is that right?

6 MR. SODERBERG: It depends on the
7 type of test being applied. If it is an
8 intra-well test where you're relying on data only
9 from one well, it's a new monitoring well, you
10 would need two years of quarterly data to
11 establish background.

12 MS. OLSON: So the answer is yes?

13 MR. SODERBERG: Yes, if you were
14 applying an intra-well test.

15 MS. OLSON: And what are the other
16 tests that it could apply?

17 MR. SODERBERG: You can apply
18 tests -- many different types of tests that may
19 incorporate data from all the monitoring wells or
20 a certain selection of monitoring wells.

21 MS. OLSON: And in those instances,
22 it would be less than two years?

23 MR. SODERBERG: It's possible, yes.

24 MS. OLSON: Is it possible that it

1 would be more than two years?

2 MR. SODERBERG: If you had quarterly
3 monitoring?

4 MS. OLSON: Yes.

5 MR. SODERBERG: I don't believe so.

6 MS. OLSON: That's all I've got.

7 MS. FRANZETTI: Dr. Soderberg, as
8 one looks at Section 841.225(c) where this
9 proposed addition referencing a minimum of eight
10 data points is recommended by the 2009 Unified
11 Guidance and also looks as 841.220(b) that the
12 Agency drafted, which provides for the number and
13 kinds of samples to establish background being
14 appropriate for the type of statistical test
15 employed as prescribed in the 2009 Unified
16 Guidance, would you agree that both of these
17 provisions are requiring that the Unified Guidance
18 be considered in determining the number of samples
19 that are needed?

20 MR. SODERBERG: Yes.

21 MS. FRANZETTI: So is the difference
22 here between what the Agency proposed and what the
23 environmental groups proposed is that in the
24 Unified Guidance for certain statistical methods

1 it is allowed to conduct the statistical analysis
2 with less than a minimum of eight samples?

3 MR. SODERBERG: It, again, goes back
4 to your definition of what is allowed in the
5 statistical test. So there are many assumptions
6 that need to be satisfied with any given
7 statistical tests. So it goes back to that.

8 MS. FRANZETTI: I understand. I'm
9 trying to understand and determine are there
10 instances where the 2009 Unified Guidance would
11 allow the use of less than eight samples?

12 MR. SODERBERG: Just a moment.

13 MS. FRANZETTI: Okay.

14 MR. SODERBERG: So the Agency's
15 proposed rule from March 25th Section
16 841.225(b)(2) and the Section B in general goes
17 through a number of details of the statistical
18 tests that would have to be satisfied and I think
19 those would have to be incorporated to answer your
20 question. Hence, it's not --

21 MS. FRANZETTI: Let me try a
22 different way. I'm really just trying to
23 understand the difference between what the Agency
24 has proposed in the rules and what the

1 environmental groups have proposed --

2 MR. SODERBERG: Okay.

3 MS. FRANZETTI: -- in the rules and
4 why. It seems to me that a difference is that the
5 Agency is saying "You go to the Unified Guidance
6 and for the appropriate statistical analysis you
7 follow what it is recommending in terms of number
8 of samples." In contrast, it seems the
9 environmental groups are saying "I don't care what
10 the 2009 Unified Guidance says. You have to have
11 eight minimum samples." So even if the guidance
12 might allow you to do it with six, under these
13 proposed rules you must have eight, is that right?

14 MR. SODERBERG: No, that's not
15 right.

16 MS. FRANZETTI: All right.

17 MR. SODERBERG: So the minimum of
18 eight data points that we are -- that was in my
19 pre-filed testimony is -- comes from the Unified
20 Guidance as a general suggestion in the Unified
21 Guidance and it is meant to reduce the error rate
22 of your statistical tests.

23 MS. FRANZETTI: So your
24 interpretation of the 2009 Unified Guidances that

1 it requires you have at least eight samples in all
2 instances where you're trying to determine a
3 background value?

4 MR. ARMSTRONG: Objection to the
5 form of the question. That's not what
6 Dr. Soderberg just said.

7 MS. FRANZETTI: Okay. What was
8 wrong about what I said, Dr. Soderberg?

9 MR. SODERBERG: Can you repeat what
10 you said?

11 MS. FRANZETTI: Does the 2009
12 Unified Guidance in your opinion require that
13 whenever you're trying to calculate a background
14 value you must have a minimum of eight samples?

15 MR. SODERBERG: I would say yes with
16 the -- if you are attempting to control your error
17 rate in your application of those tests --

18 MS. FRANZETTI: Okay.

19 MR. SODERBERG: -- which I believe
20 is part of the Agency's proposed rule is to
21 control the error rate.

22 MS. FRANZETTI: Okay. Let's move to
23 question 18.

24 MS. OLSON: I have two questions.

1 I'm sorry.

2 MS. FRANZETTI: Okay.

3 MS. OLSON: You were talking about
4 eight samples required to establish background.
5 My question is does the 2009 guidance require
6 eight to ten samples for every statistical method?

7 MR. SODERBERG: My recollection
8 right now is that it was more a general part of
9 the guidance. We can try to pull out the specific
10 text, but that's my recollection is that it was a
11 general.

12 MS. OLSON: So every statistical
13 method in the 2009 guidance requires a minimum of
14 eight samples?

15 MR. SODERBERG: As a general
16 recommendation for reducing error in the
17 application of your statistical test.

18 MS. OLSON: Let me word it another
19 way. Is it possible that the 2009 guidance has a
20 statistical method that allows the use of less
21 than eight data points?

22 MR. SODERBERG: Again, it would
23 depend on your definition of allows. You can get
24 a result from fewer than eight data points, but

1 now robust that result is and how that affects the
2 potential errors that are coming -- are part of
3 your statistical analysis would be affected by
4 that. Can I read a part of the Unified Guidance
5 here?

6 MS. OLSON: Sure.

7 MR. SODERBERG: This is on page 5-3.
8 "The Unified Guidance recommends that a minimum of
9 at least eight to ten independent background
10 observations be collected before running most
11 statistical tests." This is -- although -- sorry.
12 "Although still a small sample size by statistical
13 standards, these levels allow for minimally
14 acceptable estimates of variability and evaluation
15 of trend and goodness of fit. However, this
16 recommendation should be considered a temporary
17 minimum until additional background samplings can
18 be conducted and the background sample size
19 enlarged. See further discussions below."

20 So with respect to your question
21 about where this recommendation applies to more
22 than just background statistical tests, they do
23 reference tests of trend and goodness of fit that,
24 you know, could be part of a background

1 determination, but could be part of a
2 determination of increasing trends at a given
3 well.

4 MS. OLSON: So for the --

5 MS. BUGEL: Could we pause? We have
6 the Unified Guidance with us and we would move to
7 have it admitted as an exhibit now. We did not
8 copy the whole thing.

9 HEARING OFFICER FOX: Ms. Bugel, I
10 construe your statement that you would move to
11 introduce it as a motion, in fact, to do exactly
12 that. A motion to introduce Statistical Analysis
13 of Groundwater Monitoring Data at RCRA Facilities
14 dated March 2009 subtitled Unified Guidance as
15 Exhibit No. 33 in this proceeding.

16 Do any of the participants have
17 an objection to the motion? Neither seeing nor
18 hearing any, Ms. Bugel, it is admitted as Exhibit
19 No. 33.

20 (Document marked as Hearing
21 Exhibit No. 33 for
22 identification.)

23 MS. BUGEL: Just for the record I
24 want to confirm that is only chapters five and six

1 of the Unified Guidance and not the whole
2 document.

3 HEARING OFFICER FOX: The whole
4 lengthy document.

5 MS. BUGEL: Yes.

6 HEARING OFFICER FOX: Thank you for
7 that clarification.

8 MS. OLSON: I'm done.

9 MS. FRANZETTI: Dr. Soderberg, do I
10 understand your testimony correctly that you
11 support using eight quarters of sampling to
12 develop a background value?

13 MR. SODERBERG: Yes.

14 MS. FRANZETTI: And that is what the
15 proposed revision to Section 841.225(c) attempts
16 to achieve, correct?

17 MR. SODERBERG: I believe that's
18 right. I would clarify that as we discussed
19 before that you could potentially get eight data
20 points from multiple wells from, you know, less
21 than eight quarters of data.

22 MS. FRANZETTI: Is one of the things
23 that your changes attempt to prevent is that a
24 background value gets established with, for

1 example, just four quarterly sampling results?

2 MR. SODERBERG: Yes, that would have
3 a higher chance of -- it would be a less powerful
4 statistical analysis.

5 MS. FRANZETTI: And is it also your
6 concern that that becomes the background value for
7 the period of time allowed under the proposed
8 rules until the background chemical constituent
9 concentration is recalculated, correct?

10 MR. SODERBERG: That's correct.

11 MS. FRANZETTI: Okay. Moving to
12 question 18. You also suggest that when very few
13 data points are available the Illinois EPA use
14 "The statewide background data set for the
15 relevant aquifer system as established in the
16 technical support document IEPA 2013 Attachment A
17 pages 4 through 18" for use in establishing "An
18 upper tolerance limit, UTL, or upper prediction
19 limit, UPL, to which a single compliance well
20 sample result could be compared."

21 Under your proposal given you
22 are also advocating a period of more frequent
23 monitoring for new wells or new background values,
24 what instance or instances are you contemplating

1 would have "very few data points" as referenced in
2 your testimony?

3 MR. ARMSTRONG: I can respond to
4 this proposal insofar as the environmental groups
5 have submitted the proposal. The only change --

6 MS. FRANZETTI: Mr. Armstrong, can I
7 just interrupt you just for a moment?

8 MR. ARMSTRONG: Sure.

9 MS. FRANZETTI: I would like to get
10 to that, but initially I'm just trying to
11 understand what were the circumstances, what were
12 the instances that Dr. Soderberg was contemplating
13 by his testimony and then maybe with that
14 background it will make more sense to go to
15 whatever it is in the proposed environmental
16 groups rules.

17 MR. SODERBERG: Yes. So as I
18 discussed yesterday this use of the Agency's
19 experience in this technical support document they
20 put together for -- would provide context for
21 understanding what you would expect to see as a
22 background value for a given aquifer. I don't
23 envision that really as being anything that would
24 trigger a response, but would be necessary and

1 would be useful as part of providing the context
2 and establishing this context for understanding
3 the background as is recommended and discussed in
4 the Unified Guidance.

5 MS. FRANZETTI: Now, Mr. Armstrong,
6 if you would like to add what it was you wanted to
7 add.

8 MR. ARMSTRONG: Yes. So there was a
9 reference to Dr. Soderberg's testimony about there
10 not being enough data points available. The
11 intent of the environmental groups was to
12 incorporate Dr. Soderberg's recommendation of a
13 minimum of eight data points as recommended by the
14 2009 Unified Guidance to address situations where
15 there were an inadequate number of data points.

16 MS. FRANZETTI: I'm going to move to
17 question B.

18 HEARING OFFICER FOX: Ms. Franzetti?

19 MR. RIESER: In looking at the
20 language -- I'm sorry. David Rieser, R-I-E-S-E-R,
21 from Much Shelist, M-U-C-H, S-H-E-L-I-S-T, on
22 behalf of Dynegy. Looking at 225(c) you've added
23 the language about the minimum of eight data
24 points and then you say "and it must be as large

1 as necessary to ensure with reasonable confidence
2 that a contaminate release to groundwater from a
3 facility will be detected." Are those two
4 different things? Do people have to demonstrate
5 both compliance consistency with the Unified
6 Guidance and another quality of be as large as
7 necessary to ensure with reasonable confidence, et
8 cetera?

9 MR. SODERBERG: I would refer back
10 to the paragraph I read from the Unified Guidance
11 where this eight to ten independent background
12 observations is proposed as a -- or recommended as
13 a minimum and that this still may be a small
14 sample size by statistical standards. If the --
15 in applying the tests it's discovered that those
16 eight data points are not adequate to meet the
17 confidence requirements, then more data points
18 could potentially be required.

19 MR. ARMSTRONG: Could I add onto
20 that?

21 MS. FRANZETTI: Sure.

22 MR. ARMSTRONG: Thank you. In
23 addition, the intent of the change was keeping in
24 mind the context of this the background value

1 would have -- would inform the groundwater
2 monitoring plan. So the intent here was that if
3 the Agency believes that more data points were
4 necessary to establish a background, this leaves
5 open the possibility that they could require more
6 data points.

7 MS. FRANZETTI: So it's not only a
8 minimum, but it's a minimum plus whatever the
9 Agency happens to think is necessary?

10 MR. ARMSTRONG: Well, it's a minimum
11 of eight data points and then -- however, data
12 points are large -- are needed to ensure with
13 reasonable confidence that a contaminate release
14 to groundwater from a facility will be detected.

15 MS. FRANZETTI: Thank you.
16 Dr. Soderberg, moving to 18(b). Under your
17 proposal, what happens if the monitoring data
18 shows that an upper tolerance limit or an upper
19 prediction limit is exceeding?

20 MR. SODERBERG: So I don't believe I
21 address that in my pre-filed testimony, but I
22 don't know if --

23 MS. FRANZETTI: That's fine. If you
24 don't have an opinion on that, that's the answer.

1 MR. SODERBERG: That's my answer.

2 MS. FRANZETTI: Okay. Moving to
3 Subpart C of question 18. How does your suggested
4 approach account for instances where the cause of
5 the level of a constituent being above either the
6 UTL or the UPL being due to causes other than
7 those associated with a CCW impoundment?

8 MR. SODERBERG: Well, I don't know
9 if my approach accounts for those instances, but
10 it certainly would improve your ability to parse
11 out what is happening with the data when you have
12 more data points. It is better for trying to
13 understand what is happening with the sources and
14 the movement of contaminants.

15 MS. FRANZETTI: Moving to question
16 19. At the bottom of page five and continuing to
17 the top of page six of your pre-filed testimony,
18 in connection with the establishment of a
19 site-specific background distribution, you state
20 that a comparison to the statewide background
21 statistics "would give the Agency necessary
22 information, for instance, with respect to
23 alternative cause demonstrations." Explain how
24 such a comparison would give the Agency necessary

1 information with respect to alternative cause
2 demonstrations?

3 MR. SODERBERG: So, again, as I
4 discussed this comparison to statewide statistics
5 is not meant to be something that triggers any
6 response, but it is part of establishing the
7 context for understanding the background and would
8 be useful especially in an instance where you're
9 claiming an alternative cause that may be due to
10 natural causes.

11 MS. FRANZETTI: And to put this in
12 context. You're speaking about situations that
13 occur before one has collected all of the eight
14 quarterly sampling data points?

15 MR. SODERBERG: Right. Or if you
16 were to determine in collecting those eight
17 quarterly data points that some set of those could
18 not be applied to the background calculation then
19 maybe you would be left with fewer than eight data
20 points. So this is where that would become
21 useful.

22 MS. FRANZETTI: So, in your opinion,
23 rather than waiting to get the minimum eight
24 quarters of data points for this comparison of

1 your background value for a particular well --
2 excuse me. I said that wrong. I have to start
3 again..

4 Rather than waiting for the
5 eight useable data points so that you can compare
6 your data to actual site background data you
7 advocate that in the interim you should be looking
8 at statewide background values, is that right?

9 MR. ARMSTRONG: Can I just ask you a
10 clarifying question or make a clarifying remark?

11 MS. FRANZETTI: (Affirmative nod.)

12 MR. ARMSTRONG: I think it is
13 important to note Dr. Soderberg's testimony and
14 then also the environmental groups proposal. So
15 in terms of what Dr. Soderberg is advocating for,
16 I just want to make clear that we're delineating
17 between his testimony about what would be useful
18 in a consideration and what the environmental
19 groups have proposed to include in the rules. So
20 which of those are we talking about right now?

21 MS. FRANZETTI: I'm talking about
22 his opinions, not your rules.

23 MR. ARMSTRONG: Very good.

24 MS. FRANZETTI: When I'm talking

1 about your rules, I'll try to be clear in
2 referencing them.

3 MR. ARMSTRONG: Very good. When we
4 say advocate, when we say propose, I just want to
5 make clear on what we're talking about.

6 MR. SODERBERG: Your question again?

7 MS. FRANZETTI: Let me try it again.
8 I'm trying to understand what is the big
9 difference between allowing a sampling process at
10 a site at a given well to get to the point where
11 it has a minimum of eight data points so that you
12 can do a site specific determination, a background
13 value and comparison of your other wells, your
14 down-gradient well values to that site specific
15 background value, versus what it seems you're
16 advocating which is it's not the way you ought to
17 proceed, you need to go faster and do it quicker
18 and one of the ways to do it more quickly is to
19 use the state site-wide background values and I'm
20 not really appreciating why that is such a
21 significant difference to you?

22 MR. SODERBERG: I think that the
23 difference for me is you could certainly have a
24 situation where you have elevated concentrations

1 in a monitoring well. You're unsure based on the
2 conditions of the site whether or not you can rely
3 on that data for background and you want to be
4 able to put those elevated concentrations -- you
5 want to be able to make a determination of whether
6 or not they are elevated relative to what you
7 would expect.

8 So this is -- this is a
9 necessary comparison for understanding the --
10 whether or not a given concentration is elevated
11 relative to what you would expect and I believe --
12 well, yes, the work that the Agency did in
13 developing that technical support document speaks
14 for itself, I believe.

15 MS. FRANZETTI: Have you done any
16 review to compare the representativeness of the
17 statewide background concentrations to site
18 specific situations in Illinois?

19 MR. SODERBERG: No.

20 MS. FRANZETTI: So you don't really
21 know what the degree of representativeness is of
22 the statewide background concentration values to
23 various site specific values at the CCW facilities
24 within the state, correct?

1 MR. SODERBERG: Correct.

2 MS. FRANZETTI: Turning to question

3 20.

4 MS. OLSON: I've got a few follow
5 ups. Dr. Soderberg, are you familiar with the
6 State of Illinois groundwater quality standards?

7 MR. SODERBERG: I'm aware that they
8 exist.

9 MS. OLSON: Do you know that there
10 are numeric standards that are included in the
11 groundwater quality standard?

12 MR. SODERBERG: Yes.

13 MS. OLSON: And are you familiar
14 with the fact that those numeric standards apply
15 except due to natural causes?

16 MR. SODERBERG: I believe I remember
17 that, yes.

18 MS. OLSON: So if the standards
19 apply except due to natural causes, can you
20 explain to me how the statewide background would
21 help provide necessary information in determining
22 an alternative cause demonstration?

23 MR. SODERBERG: Well, defining what
24 the concentrations are associated with natural

1 causes is inherit to making that evaluation and I
2 believe that the statewide background -- or the
3 statewide statistics were one way of getting at
4 that.

5 MS. OLSON: How would using the
6 statewide background point you to another source?

7 MR. SODERBERG: Well, it helps -- it
8 potentially helps to define what you would expect
9 generally in an aquifer to get at what may be the
10 natural condition for that aquifer.

11 MS. OLSON: But correct me if I'm
12 wrong. If it is naturally occurring, it wouldn't
13 be above the standards, is that correct?

14 MR. SODERBERG: I'll leave that to
15 the lawyers to decide.

16 MS. OLSON: We're good. Thank you.

17 MS. FRANZETTI: Turning to question
18 20. In the same carryover paragraph at the top of
19 page six of your pre-filed testimony, you state
20 that "the Unified Guidance was written to
21 encompass groundwater monitoring statistics at all
22 types of RCRA sites, not only surface
23 impoundments" and you recommend the proposed
24 Part 841 rules "should provide a set of preferred

1 background comparison tools as a starting point or
2 rank the various options in order of preference
3 based on the Agency's experience with monitoring
4 at surface impoundment sites," instead of relying
5 on the Unified Guidance generally. A: Why does
6 the fact that the Unified Guidance applies to all
7 types of RCRA sites make its proposed use in these
8 rules less satisfactory than specifying the
9 specific background comparison tools or
10 specifically ranking them?

11 MR. SODERBERG: So my intent with
12 that discussion about ranking different
13 statistical tests was actually to open the
14 possibility to tap into the Agency's experience
15 with the sites that they have to deal with. I
16 agree that the Unified Guidance is a good document
17 to use. It has many options. One of the problems
18 with applying that Unified Guidance is that there
19 are many options. So you don't really know what
20 to expect if you're telling someone to follow the
21 Unified Guidance and give you a statistical
22 analysis.

23 There could be many different
24 results from that and, therefore, many

1 different -- it could be very complicated to
2 interpret and to evaluate whether or not all of
3 the assumptions for each of those tests has been
4 satisfied. So I was just trying to open up the
5 discussion of whether the Agency has
6 recommendations based on their experience for
7 giving a starting point so that you can kind of
8 simplify those evaluations.

9 MS. FRANZETTI: So your concern is
10 that the Unified Guidance not totally supplant the
11 Agency's ability to apply its experience to a
12 given situation and use the combination of 2009
13 Unified Guidance, their experience to determine
14 what the appropriate approach should be?

15 MR. SODERBERG: That's right. Well,
16 I was -- right. Trying to see if the Agency could
17 try to simplify that application of Unified
18 Guidance.

19 MS. FRANZETTI: Question B. Is it
20 your opinion that the Agency currently has
21 sufficient experience with monitoring its surface
22 impoundment sites on which to specify the specific
23 background comparison tools to be used or to
24 specifically rank them? If so, please explain the

1 basis for your opinion.

2 MR. SODERBERG: That is not my
3 opinion.

4 MS. FRANZETTI: Moving to question
5 21. Regarding the last paragraph on page seven of
6 your pre-filed testimony where you discuss why the
7 proposed allowance for reduced monitoring in
8 proposed Section's 841.230(c)(1) and (2) should
9 not be adopted, do you understand these
10 subparagraphs to apply only to instances where
11 there already had been monitoring of the
12 monitoring well in question conducted for a period
13 of the preceding five consecutive years under the
14 requirements of the rules and had not been
15 detected in any of those monitoring events?

16 MR. SODERBERG: Yes.

17 MS. FRANZETTI: So, in your opinion,
18 five years of consecutive results of non-detect is
19 not a sufficient basis on which to reduce the
20 monitoring of that particular constituent per the
21 Agency's proposed rule?

22 MR. SODERBERG: I'm not opposed in
23 principle to reduce monitoring. I think that
24 moving to monitoring once every five years is

1 potentially too long.

2 MS. FRANZETTI: So that's your point
3 of disagreement --

4 MR. SODERBERG: Yes.

5 MS. FRANZETTI: -- is the reduction
6 should be to a more frequent monitoring than once
7 every five years?

8 MR. SODERBERG: Yes.

9 MS. FRANZETTI: And that is your
10 opinion even though the Agency's proposed
11 monitoring reduction provision in 841.230(c)
12 requires the unit to be lined in order for this
13 reduction in sampling to occur?

14 MR. SODERBERG: Yes. And I would go
15 back to the discussion of yesterday where we were
16 talking about how you can't always in every
17 instance associate a monitoring well where you're
18 looking at doing various monitoring with a given
19 unit that may be monitored online.

20 MS. FRANZETTI: I'm not following
21 that explanation. Are you assuming that if at a
22 facility there could be a lined unit and in close
23 proximity an unlined unit and you're saying it may
24 not be clear that that particular well is only

1 monitoring the lined unit and not also the unlined
2 unit?

3 MR. SODERBERG: Correct.

4 MS. FRANZETTI: Would your opinion
5 therefore be different if at the facility the
6 units are all lined?

7 MR. SODERBERG: Well, I mean, aside
8 from the liner failure, yes. My main concern here
9 would be potentially up-gradient, unlined units
10 that are possibly impacting that well.

11 MS. FRANZETTI: Okay. Moving to
12 question 22. Do your opinions regarding why
13 sampling every five years is insufficient take
14 into account how long the surface impoundment in
15 question has been used to collect CCW?

16 MR. SODERBERG: No.

17 MS. FRANZETTI: Question 23.
18 Explain the basis for your statement that "If a
19 constituent is only monitored once every five
20 years in an up-gradient well and it is
21 subsequently detected in a down-gradient well,
22 alternative causes would be much more difficult to
23 demonstrate and evaluate compared to having
24 semiannual monitoring."

1 MR. SODERBERG: My intention there
2 was just that more data is better when trying to
3 make an argument about defining the sources of
4 contamination.

5 MS. FRANZETTI: Question 24. And
6 I -- which asks for a copy of the relevant pages
7 of the Zheng and Bennett 2002 reference book,
8 which was accomplished yesterday morning, am I
9 correct with the introduction of one of the
10 exhibits -- which I can't off the top of my head
11 remember what the number is.

12 MS. LIU: Twenty-three.

13 MS. FRANZETTI: Twenty-three? Thank
14 you.

15 MR. SODERBERG: If I might just
16 comment, yes, we were provided those pages, but
17 the question was about -- or it wasn't a question,
18 but comment here in number 24 from your pre-filed
19 questions was citing my testimony regarding
20 reduced monitoring frequency and I believe my
21 citation in my pre-filed testimony for the Zheng
22 and Bennett book was simply regarding the variable
23 transport of chemical constituents in the
24 subsurface.

1 MS. FRANZETTI: Thank you for that
2 clarification. Question 25. At the top of page
3 eight of your pre-filed testimony, you recommend
4 that the Board should prohibit reduced monitoring
5 for a core set of chemical constituents that are
6 known to leach from CCW and you suggest as an
7 example 24 constituents of concern identified in
8 the US EPA's 2010 CCW risk assessment. Do these
9 24 constituents always leach from all types of
10 CCW? If not, what factors affect whether these
11 constituents will leach from CCW?

12 MR. SODERBERG: Those 24
13 constituents do not always leach to a significant
14 degree from every type of CCW.

15 MS. FRANZETTI: What are the factors
16 that affect given one of those constituents will
17 leach?

18 MR. SODERBERG: The type of CCW, the
19 type of coal that was used, the geochemical
20 conditions in the poor water of the incumbent.

21 MS. OLSON: Can you be more
22 specific?

23 MR. SODERBERG: About?

24 MS. OLSON: About the chemical

1 makeup of the water.

2 MR. SODERBERG: Certainly the
3 driving control would be the pH and the Eh.

4 MS. FRANZETTI: What does Eh stand
5 for?

6 MR. SODERBERG: It's the Redox
7 potential.

8 MS. FRANZETTI: In terms of the type
9 of coal, is an example of that whether it's
10 bituminous or sub-bituminous coal?

11 MR. SODERBERG: Yes.

12 MS. FRANZETTI: Are there also any
13 influence on what leaches based on things like
14 back end controls on boilers at the facility?

15 MR. SODERBERG: I believe so, yes.

16 MS. FRANZETTI: Turning to question
17 26. You reference the EPRI 2006 study in support
18 of your statement that studies of CCW leachate
19 have confirmed the presence of these constituents
20 in leachate. Is it your opinion that the EPRI
21 2006 study is a reliable study?

22 MR. SODERBERG: Yes, it -- certainly
23 they collected samples and those samples
24 themselves and the analyses are reliable.

1 MS. FRANZETTI: Question 27. EPRI
2 has also submitted to the US EPA a report entitled
3 "Evaluation of Coal Combustion Product Damage
4 Cases (Volumes 1 and 2), Draft Report, November
5 2009," which is referenced in the preamble to the
6 US EPA's Coal Combustion Residual Proposed Rule
7 and on which the US EPA has invited comment in
8 that preamble, have you reviewed this EPRI Report
9 and, if so, have you provided any comments on it?

10 MR. SODERBERG: No.

11 MS. BUGEL: Can I ask one follow-up
12 question on the EPRI study?

13 MS. FRANZETTI: Mm-hmm.

14 MS. BUGEL: Dr. Soderberg, did you
15 review every part of the EPRI 2006 study that you
16 cited in your testimony?

17 MR. SODERBERG: I looked at the
18 entire study, but I can't vouch for how reliable
19 the entire study is. Certainly the samples and
20 the chemical analysis are reliable.

21 MS. BUGEL: Were there more than one
22 type of samples in that study? Any sets of
23 samples?

24 MR. SODERBERG: I believe so, yes.

1 MS. BUGEL: Are you vouching for all
2 the sets of samples or just the reliability of the
3 ones -- more specific ones that you reviewed?

4 MR. SODERBERG: I would have to go
5 back and look at the different types of samples.

6 MS. BUGEL: Which particular part of
7 the study did you look at and were you relying
8 upon in your testimony?

9 MS. FRANZETTI: Objection to that
10 form in that it contradicts it. He said he
11 reviewed the entire study. So let's not try to
12 make it that when he is talking about from what he
13 reviewed, which was the whole study, that he
14 thought the sampling and the data results were
15 quality results, correct, Dr. Soderberg?

16 MR. SODERBERG: Yes, thinking back I
17 believe that there was some poor water sampling
18 and I think that's what I was referring to.

19 MS. FRANZETTI: Moving to question
20 28.

21 MS. OLSON: Before you move to the
22 next question, I've been saving some of my follow
23 ups if that is okay with you.

24 MS. FRANZETTI: And it's been

1 killing you. I know.

2 MS. OLSON: So I would like to go
3 back to question 20(b). You testified that it is
4 not your opinion that the Agency currently has
5 sufficient experience with monitoring at surface
6 impoundment sites on which to specify the
7 background comparison tools to be used or to
8 specifically rank them. Can you state the basis
9 for your opinion?

10 MR. SODERBERG: The basis that that
11 is not my opinion?

12 MS. OLSON: So the question asks you
13 if it is your opinion that the Agency has
14 sufficient experience and you said no.

15 MR. SODERBERG: Yeah.

16 MS. OLSON: So is it true that it is
17 your opinion that the Agency does not have
18 sufficient experience with monitoring at surface
19 impoundment sites on which to specify the specific
20 background comparison tools to be used or to
21 specifically rank them?

22 MR. SODERBERG: I do not know
23 whether the Agency has sufficient experience. I
24 suspect that the Agency does have sufficient

1 experience to narrow the scope of the statistical
2 analyses that are possible within the Unified
3 Guidance.

4 MS. OLSON: Okay. Thank you. I
5 just wanted to clarify in the event that your
6 answer was no. We were, in response to question
7 25, talking about factors that affect leachate
8 from CCW and you mentioned pH and how does pH
9 affect the leachate from CCW?

10 MR. SODERBERG: So some chemical
11 constituents are sensitive in terms of their
12 mobility in the subsurface to pH and some to Redox
13 conditions. So at different pH values different
14 constituents would be more mobile or less mobile.

15 MS. FRANZETTI: Can you specify --
16 give us examples of constituents that would be
17 more or less mobile based on pH and what the pH
18 is?

19 MR. SODERBERG: Sure. So typically
20 metals are more mobile at lower pH's, for example,
21 arsenic.

22 MS. OLSON: Okay. And do you know
23 the statewide background for pH in Illinois that
24 you referenced, the statewide background that you

1 referenced in your testimony?

2 MR. SODERBERG: I do not.

3 MS. OLSON: Thanks.

4 MS. FRANZETTI: Turning to question
5 28. Now, we're into Subpart C. Corrective action
6 Section's 841.300 through 325. Regarding your
7 testimony on the alternative cause demonstration
8 in Section 841.305 of the proposed rules, why is a
9 demonstration that one of these three causes is
10 the reason for the groundwater impact in question
11 not sufficient for purposes of these rules and
12 those three causes is: Error in sampling analysis
13 or evaluation, natural causes or a source other
14 than the unit?

15 MR. SODERBERG: So one of my points
16 or intentions in that paragraph you referenced was
17 simply to bring into the rule specification of
18 which of those three causes you're claiming is an
19 alternative cause. It seems like it's assumed
20 that you would pick one of those three, but I
21 wanted to make that explicit.

22 MS. FRANZETTI: All right. So the
23 way you were reading the proposed rule was that
24 the owner or operator making an alternative cause

1 demonstration didn't have to identify which of
2 those three potential causes were applicable?

3 MR. SODERBERG: It seems like they
4 could potentially discuss all three or not, you
5 know, necessarily land on one as their primary
6 alternative causes.

7 MS. FRANZETTI: And, in your
8 opinion, they need to identify one as the primary
9 cause?

10 MR. SODERBERG: Yes.

11 MS. FRANZETTI: Might there be
12 instances, though, where there might be more than
13 one cause --

14 MR. SODERBERG: Yes.

15 MS. FRANZETTI: -- and the multiple
16 causes are not attributable to the unit itself?

17 MR. SODERBERG: Yes.

18 MS. FRANZETTI: And, in those
19 instances, you don't have a problem with the owner
20 or operator specifying more than one contributing
21 cause to the situation?

22 MR. SODERBERG: Yes, that's right.

23 MS. FRANZETTI: Now, turning to
24 question 29. In your opinion, what is a

1 sufficient demonstration of an alternative cause?

2 MR. SODERBERG: So that would be a
3 demonstration that is based on data to provide a
4 plausible explanation for an alternative cause.
5 You would need to identify a potential source for
6 a given constituent.

7 MS. FRANZETTI: Give me just a
8 moment. When you mention identification of a
9 source, are you advocating that the owner or
10 operator has to pinpoint exactly where that
11 constituent in question is coming from?

12 In other words, it is not enough
13 to show that it is not coming from the unit. Are
14 you saying that an owner or operator has to track
15 what is the exact source of that constituent?

16 MR. SODERBERG: No, I would say that
17 is not a -- I would say that's not a requirement.
18 It shouldn't be a requirement of an alternative
19 cause to track it offsite, but if you were making
20 a distinction between a natural cause versus
21 something that is coming from offsite, you
22 should -- and you're claiming that something is
23 coming from offsite provide some plausible
24 explanation of what might be up-site --

1 up-gradient of the site that is coming that way.

2 MS. FRANZETTI: Would you agree that
3 there are circumstances where particularly given
4 these facilities may be located in heavily
5 industrialized areas and areas that have been that
6 way for decades that it may not be possible to
7 pinpoint what was the original source of release
8 of that constituent?

9 MR. SODERBERG: Yes.

10 MS. FRANZETTI: And in those types
11 of instances you are not stating in your testimony
12 that the owner or operator has to identify what
13 was the original source from which that
14 constituent was released?

15 MR. SODERBERG: Correct.

16 MS. FRANZETTI: Okay. Turning to
17 question 30.

18 MR. ARMSTRONG: Can I please ask one
19 follow-up question?

20 MS. FRANZETTI: Mm-hmm.

21 MR. ARMSTRONG: Dr. Soderberg, in
22 circumstances where a site is potentially impacted
23 from multiple offsite sources where there has been
24 history of industrial activity in the area, for

1 example, what would your recommendation be as to
2 an adequate justification that contamination came
3 from offsite?

4 MR. SODERBERG: First of all, you
5 would need to be able to show that contamination
6 is or that these multiple industrial sources are
7 up-gradient of the site, that sometimes is
8 difficult to show on its own and then, you know,
9 without getting into chemical fingerprinting of
10 the individual sources and identifying potentially
11 responsible parties, a discussion of the history
12 of the up-gradient area and the types of industry
13 that was up there -- types of chemical
14 constituents that they might have released would
15 be sufficient.

16 MS. FRANZETTI: As you said, so that
17 there is a plausible explanation --

18 MR. SODERBERG: Yes.

19 MS. FRANZETTI: -- that it is coming
20 from a different source?

21 MR. SODERBERG: Yes.

22 MS. FRANZETTI: Question 30. At the
23 bottom of page eight of your testimony, you state
24 that "Section 841.310 should be revised to state

1 that a groundwater collection system is one
2 possible type of short-term solution that would be
3 necessary -- that would be a necessary part of the
4 overall corrective action." Please identify other
5 possible types of short-term solutions.

6 MR. SODERBERG: So an example is a
7 hydraulic barrier.

8 MS. FRANZETTI: Any other types?

9 MR. SODERBERG: The definition of
10 short-term is a little bit problematic there, but
11 maybe some reactive barrier that is more of a
12 medium-term or longer-term solution, but it could
13 be used as a short-term solution.

14 MS. FRANZETTI: For my benefit, what
15 is the difference between a hydraulic barrier and
16 a reactive barrier?

17 MR. SODERBERG: The hydraulic
18 barrier tends to give a mound to the water table
19 to change the direction of flow.

20 MS. FRANZETTI: Or contain it?

21 MR. SODERBERG: A reactive barrier
22 is some material that is placed in the subsurface
23 to react with the chemical constituents that are
24 in the migrating groundwater.

1 MS. FRANZETTI: So the reactive
2 barrier actually winds up breaking down the
3 constituents in the groundwater?

4 MR. SODERBERG: Not necessarily
5 breaking down, but providing sites for absorption
6 or for chemical change, precipitation.

7 MS. FRANZETTI: Any other possible
8 types of short-term solutions that you're
9 referring to there in your testimony?

10 MR. SODERBERG: I would leave that
11 to the -- if the Agency has other experiences than
12 the two examples.

13 MS. FRANZETTI: Okay. Question 31.
14 In the first full paragraph of page nine of your
15 pre-filed testimony, you state that "The rule
16 should require that a unit that is out of
17 compliance after an attempt at corrective action
18 be closed pursuant to Part 841 Subpart D because
19 of this ongoing threat." What constitutes an
20 "attempt at corrective action" within the meaning
21 of your testimony?

22 MR. SODERBERG: So within my
23 testimony I kind of deliberately left that vague
24 to bring in the Agency's experience or some

1 language from lawyers that would be effective
2 there. Did you want to comment on the proposed --

3 MR. ARMSTRONG: Unless there's a
4 question on it.

5 MS. FRANZETTI: What I'm trying to
6 get an understanding of is do you have a temporal
7 time limit to what constitutes an attempt at
8 corrective action?

9 MR. SODERBERG: Not within my
10 testimony, no.

11 MS. FRANZETTI: Are you just trying
12 to say that at some point there should be a
13 determination as to whether or not the corrective
14 action is still effective?

15 MR. SODERBERG: Yes, it should be
16 evaluated and it should be addressed.

17 MS. FRANZETTI: Okay. And at the
18 point in which the corrective action is determined
19 to no longer be an effective corrective action
20 approach, you're saying you need to turn to
21 closure at that point?

22 MR. SODERBERG: Yes.

23 MS. FRANZETTI: What criteria -- I'm
24 moving to -- excuse me -- question (b). What

1 criteria, if any, are you recommending to be
2 applied to determine when such a "unit that is out
3 of compliance after an attempt at corrective
4 action" be closed?

5 In other words, how do we decide
6 that, sorry, you've had your chance, corrective
7 action is not working, you've got to close that
8 unit?

9 MR. SODERBERG: I think that those
10 criteria should be within the corrective action
11 plan.

12 MS. FRANZETTI: And is that because
13 there really isn't a way to dictate generically
14 for all types of corrective action what are the
15 appropriate criteria for evaluating whether
16 they're effective or not?

17 MR. SODERBERG: I am not sure if I
18 understand the appropriate criteria language.

19 MS. FRANZETTI: Okay. Let me try
20 again. I'm understanding you to say that what are
21 the appropriate criteria for evaluating the
22 continued effectiveness of corrective action is
23 going to differ based on the type of corrective
24 action that is being implemented, is that correct?

1 MR. SODERBERG: I'll have to leave
2 that to the policy discussions about this rule.

3 MS. FRANZETTI: Okay. Moving to
4 question (c). Identify any precedent under
5 existing federal or state laws or regulations for
6 the approach you are recommending here.

7 MR. SODERBERG: Again, I'll have to
8 leave that to the policy discussions around this
9 rule.

10 MS. FRANZETTI: You, yourself, did
11 not do that kind of review and you're not aware of
12 what existing state or federal laws or regulations
13 there might be?

14 MR. SODERBERG: Correct.

15 MS. FRANZETTI: Turning to Subpart
16 D, the closure section.

17 MR. JENNINGS: I have some follow
18 ups. Sorry. So going back to question 28. Based
19 on your experience, would it be required -- or
20 would you be required to identify naturally
21 occurring concentrations as part of an alternative
22 cause demonstration?

23 MR. SODERBERG: Yes, you would need
24 to discuss the presence of chemical constituents

1 in the natural condition of the matrix.

2 MR. JENNINGS: And that would be an
3 alternative cause, correct?

4 MR. SODERBERG: Sure.

5 MR. JENNINGS: You touched on this a
6 little bit. I just wanted to clarify your
7 response. Would it be appropriate in this rule to
8 have a requirement that an owner of a unit
9 identify other potentially responsible parties?

10 MR. SODERBERG: No.

11 MR. JENNINGS: Moving to question
12 29. What kind of monitoring would you envision
13 would be required to make a sufficient
14 demonstration of an alternative cause, if any?

15 MR. SODERBERG: I would expect the
16 alternative cause demonstration to incorporate the
17 monitoring data that is available at the site.

18 MR. JENNINGS: So in order to make
19 an alternative cause demonstration, would whatever
20 statistical analysis that was employed have to
21 comply with the other relevant provisions of this
22 part?

23 MR. SODERBERG: So I believe yes.

24 MR. JENNINGS: So that would include

1 the use of eight data points?

2 MR. SODERBERG: If it is available,
3 yes, I believe that would be consistent with the
4 application of the Unified Guidance as
5 incorporated by reference for the entire rule.

6 MR. JENNINGS: So conceivably
7 instead of having 180 days to make the alternative
8 cause demonstration, that would be two years using
9 quarterly monitoring?

10 MR. SODERBERG: Well, no, I think
11 that argument, you know, would only hold if you
12 were installing new monitoring wells and have no
13 data -- previous data to rely on that and are only
14 installing one monitoring well that is relevant to
15 the alternative cause demonstration.

16 MR. JENNINGS: Can you explain how a
17 reactive barrier would be a short-term solution to
18 any of these sites?

19 MR. SODERBERG: Well, there are
20 different types of reactive barriers, but it is a
21 reactive barrier that has a limited capacity to
22 react with or absorb the chemical constituents
23 that are flowing through it, then it would only be
24 effective for a short period and, again, the short

1 time period is subjective.

2 MR. JENNINGS: So can you define
3 where short period would be other than just some
4 subjective timetable?

5 MR. SODERBERG: Maybe on the order
6 of a decade.

7 MR. JENNINGS: And yesterday you
8 said that you made recommendations regarding the
9 implementation of corrective actions of other
10 sites, not necessarily CCW surface impoundments,
11 correct?

12 MR. SODERBERG: Did I say that?

13 MR. JENNINGS: I'll rephrase it.
14 Professionally have you made any recommendations
15 regarding the corrective action at any facilities?

16 MR. SODERBERG: Yeah, I'll just
17 describe, you know, my involvement with
18 remediation sites is typically part of a team. We
19 are brought in at various times in the -- during
20 the life of a remediation project and there are
21 many decisions to be made during a remediation or
22 corrective action. So in that sense, yes, I've
23 made decisions with respect to mediation projects.

24 MR. JENNINGS: Have you made

1 decisions with respect to the closure of any of
2 those remediation projects, the closure of a site
3 subject to a remediation project?

4 MR. SODERBERG: No, I have not.

5 MR. JENNINGS: So you've never
6 recommended that a site close as you propose in
7 this one?

8 MR. SODERBERG: No.

9 MR. JENNINGS: So are you in a
10 position to explain or give examples of the kind
11 of criteria that can be utilized to determine the
12 effectiveness of any of these corrective action
13 plans -- or corrective actions? Excuse me.

14 MS. BUGEL: I'm going to object as
15 to the characterization of the witness's
16 testimony. He has not made any recommendations as
17 to criteria.

18 MR. JENNINGS: Can you explain what
19 criteria would be relevant in these circumstances?

20 MS. BUGEL: Asked and answered.

21 MR. JENNINGS: We have nothing
22 further.

23 HEARING OFFICER FOX: Thanks,
24 Mr. Jennings. Ms. Franzetti, I think we're back

1 to you.

2 MS. FRANZETTI: Question 32. We're
3 in the closure section. On page nine of your
4 pre-filed testimony regarding the technical
5 feasibility of closure by removal, you reference
6 examples of 21 impoundments, 14 of which were
7 closed by removal and the remaining seven were
8 capped or regraded with fill. Do you know why in
9 the seven cases the decision was made not to close
10 by removal and to instead close the impoundment by
11 capping or regrading it with fill?

12 MR. SODERBERG: No.

13 MS. FRANZETTI: Question 33. Is it
14 your opinion that the only appropriate means of
15 closing a CCW impoundment is by removal of the
16 CCW?

17 MR. SODERBERG: No.

18 MS. BUGEL: Can I ask a follow-up
19 question?

20 MS. FRANZETTI: (Affirmative nod.)

21 MS. BUGEL: Why can you recommend --
22 why do you make your recommendation in your
23 testimony regarding closure by removal?

24 MR. SODERBERG: Closure by removal

1 would be the most protective for groundwater and
2 surface water quality and, therefore, human health
3 and the environment.

4 MS. BUGEL: And do you recommend
5 closure by removal as the only means of closure in
6 your testimony?

7 MR. SODERBERG: Can you point to a
8 specific place?

9 MS. BUGEL: Page nine, second full
10 paragraph. I'll restate the question. Do you
11 recommend that the Board should always advocate
12 closure by removal in every instance?

13 MR. SODERBERG: I believe that my
14 intention was closure by removal being the most
15 protective of groundwater and surface water
16 quality if it is deemed to be technically feasible
17 should be considered as the best practice.

18 MS. BUGEL: What do you mean when
19 you qualify that by technically feasible?

20 MR. SODERBERG: Well, it has to
21 be -- it has to be possible to do this action. It
22 has to be economically feasible as well.

23 MS. BUGEL: Thank you. I'm done.

24 MS. FRANZETTI: So, in your opinion,

1 technical feasibility and economic reasonableness
2 are relevant factors in determining whether or not
3 to close by removal, correct?

4 MR. SODERBERG: Correct. I will
5 qualify that the language of reasonableness I
6 didn't use that language, but technically and
7 economically feasible would be my language.

8 MS. FRANZETTI: So, in your opinion,
9 as long as enough money exists no matter how much
10 it costs you should do it?

11 MR. SODERBERG: That is a definition
12 of feasible, but that would have to be sorted out
13 as part of the policy discussions here.

14 MS. FRANZETTI: Well, I'm just
15 reacting to your editing of my phrase economic
16 reasonableness. I thought you were reading out of
17 the factors reasonableness as applied to
18 economics, but am I wrong about that?

19 MR. SODERBERG: I, again, will leave
20 that language up to the policy discussions.

21 MS. FRANZETTI: I understand. But
22 in choosing or in making the decision that you're
23 advocating as between removal or closure in place,
24 does economic reasonableness of the difference

1 between those two play a relevant part in your
2 opinion?

3 MR. SODERBERG: I think that that
4 opinion about that language should be -- is not
5 part of my expertise in this area. So I think I
6 would leave that up to the policy discussions.

7 MS. FRANZETTI: Well, when you
8 worked as part of a team in recommending
9 remediation at sites, does your team look at what
10 the costs are of the various alternative remedies
11 for a particular matter?

12 MR. SODERBERG: Yes.

13 MS. FRANZETTI: And why do you do
14 that?

15 MR. SODERBERG: It has to be a
16 project that is going to go forward and is going
17 to be able to be paid for in the long-term.

18 MS. FRANZETTI: And is it also to
19 advise your client as to the relative economic
20 reasonableness of the various alternatives?

21 MR. SODERBERG: Again, the
22 reasonableness of that alternative would be
23 subject -- is a subjective term for the client to
24 decide, but that is part of why we would provide

1 those cost estimates, yes.

2 MS. FRANZETTI: And when you are
3 making those recommendations, do you provide your
4 client with the various options that are both
5 reasonable -- excuse me -- that are both
6 technically feasible and will achieve the
7 applicable performance standards that apply to
8 that project?

9 MR. SODERBERG: Yes, I believe
10 that's part of the feasibility, yes.

11 MS. FRANZETTI: Do you advise your
12 client that they must follow the most
13 environmentally protective of those options?

14 MR. SODERBERG: This, you know,
15 would have to be on a case by case basis. I
16 wouldn't say I do that as a general rule for my
17 clients.

18 MS. FRANZETTI: Thank you. With
19 respect to question 34 under what circumstances,
20 if any, do you believe it is appropriate not to
21 require closure by removal of CCW?

22 MR. SODERBERG: So this language of
23 appropriate is subjective, but I'll try to answer.
24 If the closure by removal would -- if leaving the

1 CCW in place can be found to be a very low risk to
2 groundwater and surface water quality, that would
3 be part of the evaluation of the feasibility of
4 that alternative.

5 MS. FRANZETTI: What is in your mind
6 the meaning of very low risk?

7 MR. SODERBERG: That would have to
8 be evaluated as part of a risk analysis for the
9 different alternatives that are determined to be
10 feasible.

11 MS. FRANZETTI: Question 35. Does
12 the cost benefit analysis have any role to play in
13 the determination of whether an impoundment is
14 closed by removal versus by capping or regrading
15 it with fill?

16 MR. SODERBERG: I would -- the cost
17 benefit analysis is a very specific type of
18 evaluation. The difficulty is in quantifying the
19 benefits in making that type of determination.
20 When you have determined that various alternatives
21 are technically and economically feasible,
22 reasonable weighting would be done by a risk
23 analysis with respect to human health and the
24 environment.

1 MS. FRANZETTI: Question 36. When
2 you state in your testimony that "The Board should
3 consider closure by removal to be the best
4 practice with respect to protecting groundwater
5 and surface water from CCW impacts, what language,
6 if any, are you recommending that the Board
7 include in these rules?" And, Mr. Armstrong, if
8 you want to assist in this regard, please do.

9 MR. ARMSTRONG: Sure. The
10 environmental groups proposed amendments 841.400
11 Subsection B and the language that we had proposed
12 is that closure shall be by removal of all
13 impounded coal combustion waste and leachate from
14 coal combustion waste unless the Agency determines
15 that removal is technically infeasible or would
16 not result in greater protection of human health
17 and the environment. If any of the following
18 criteria are present, closure shall be by removal
19 unless technically infeasible. One, coal
20 combustion waste is in the water table, two, the
21 unit is located in a floodplain or wetlands or,
22 three, the unit has been constructed over a mine,
23 void and any other unstable terrain that puts the
24 unit's integrity at risk.

1 Further, the environmental
2 groups proposed a clarification that if the owner
3 or operator does not also remove the containment
4 system components, liners, et cetera, the
5 containment system components left in place shall
6 be cleaned to remove all coal combustion waste and
7 puncture to allow storm water to cross through the
8 system.

9 MS. FRANZETTI: Did Dr. Soderberg
10 assist in identifying these conditions in (b) (1),
11 (2) and (3) of this proposed rule?

12 MR. SODERBERG: I don't believe --
13 no, I didn't.

14 MS. FRANZETTI: Okay. Question 37.
15 Do different types of CCW have different
16 characteristics?

17 MR. SODERBERG: Yes.

18 MS. FRANZETTI: Question 38. Is
19 there any type of CCW that you believe could be
20 used in creating the final grade and slope of the
21 impoundment?

22 MR. SODERBERG: Yes, I believe it
23 could be used -- different types of CCW could be
24 used for creating the final grade and slope of the

1 impoundment as long as -- my concern would be that
2 if any of that is exposed to erosion post-closure.

3 MS. FRANZETTI: Right. Your
4 position is it can be used, but in the end it also
5 needs to be covered?

6 MR. SODERBERG: Yes.

7 MS. FRANZETTI: Turning to question
8 39. This is actually the first paragraph on page
9 ten of your pre-filed testimony. You state that
10 Subsection 841.415(d), as in dog, could be
11 interpreted to allow for CCW to be exposed on the
12 earth and berms surrounding the unit, but
13 Subsection 841.415(a) provides that the slopes
14 need to be able to support vegetation. Is the
15 requirement to support vegetation consistent with
16 your interpretation that CCW may be exposed on the
17 earth and berms?

18 MR. SODERBERG: So I believe that
19 the section should be explicit in just stating
20 that no CCW should be exposed post-closure. The
21 concern is you can imagine that earth and berm is
22 in existence and it may already be vegetative
23 prior to closure and that during the regrading and
24 capping procedure you may get some CCW exposed on

1 the berms and that was my concern.

2 MS. FRANZETTI: Question 40. Why is
3 it necessary to specify in the rules whether a
4 field demonstration or a laboratory demonstration
5 is sufficient?

6 MR. SODERBERG: I think either could
7 be sufficient. Just a standard should be
8 specified.

9 MS. FRANZETTI: When you say a
10 standard should be specified, do you mean a
11 standard should be specified for when each of them
12 is sufficient?

13 MR. SODERBERG: No. No. A standard
14 for demonstrating the hydraulic connectivity.

15 MS. FRANZETTI: On question 41 --

16 MR. ARMSTRONG: Before we move onto
17 that part, it looks like IEPA and I both have some
18 follow-up questions.

19 MS. OLSON: Would you like me to go
20 first?

21 MR. ARMSTRONG: You can go first.

22 MS. OLSON: I'm going all the way
23 back to question 32. The question references
24 examples of 21 impoundments that you referred to

1 in your testimony, 14 of which were closed by
2 removal. Do you know how the fluid in each of
3 those 14 impoundments that were closed by removal
4 were treated and disposed with?

5 MR. SODERBERG: No.

6 MS. OLSON: Do you have an opinion
7 on how long it would take to remove two million
8 tons of coal ash?

9 MR. SODERBERG: No, I haven't drawn
10 up an opinion on that.

11 MS. OLSON: Can you describe the
12 process by which two million tons of coal ash
13 would be removed?

14 MR. SODERBERG: Well, it would be a
15 physical process with earth moving equipment.

16 MS. OLSON: What environmental
17 protections would need to be in place during the
18 removal process in your opinion?

19 MR. SODERBERG: That would depend on
20 the type of equipment that is used and the type of
21 transport that is used, but there would need to be
22 controls on any dust that would be created by that
23 action.

24 MS. OLSON: Is there a possibility

1 that during removal there would be more
2 contamination or contamination would be recharged
3 to the groundwater during the period of removal?

4 MR. SODERBERG: Is it possible?

5 MS. OLSON: Yes.

6 MR. SODERBERG: Could you be more
7 specific about where that possibility would come
8 in?

9 MS. OLSON: For the amount of time
10 it would take to move two million tons.

11 MR. SODERBERG: During that time,
12 some additional contamination could leach through
13 to the groundwater.

14 MS. OLSON: Yes. Additional as in
15 more than if it had not been -- the removal
16 process had not been started?

17 MR. ARMSTRONG: Could I ask a
18 clarifying question on that? So is what you're
19 asking is that if the coal ash is being removed
20 that it will be exposed to, for example,
21 precipitation inflow for a greater period of time
22 than if it were just capped? So if removal took a
23 year, there would be an additional year of
24 contamination due to the earlier process of

1 contamination?

2 MS. OLSON: I'm asking if the
3 process of removal could lead to increased
4 groundwater contamination because the coal ash
5 would be moved around, being dewatered, being
6 exposed to the atmosphere and rain. That is my
7 question. So if that's what you said, then, yes,
8 that's my question.

9 MR. ARMSTRONG: There's a lot of
10 different causes that you just specified in there.

11 MS. OLSON: You can go through each
12 of them.

13 MR. SODERBERG: The point of the
14 removal would be to provide long-term source
15 control for this source of contamination. There
16 are many sort of possibilities, different things
17 that could happen during a removal action. So,
18 yes, there could be some continued groundwater
19 contamination during the removal action.

20 MS. OLSON: Is it possible that
21 would be increased, groundwater contamination,
22 during the removal process?

23 MR. SODERBERG: So are you referring
24 to increased concentrations in the groundwater or

1 an increase in overall flux of a given
2 contaminate?

3 MS. OLSON: Both. And I'm talking
4 about in reference to had the removal process not
5 been initiated. So increased contamination
6 because of the activities of removal.

7 MR. SODERBERG: You can imagine the
8 scenario, for example, earth moving equipment
9 could potentially puncture a liner and that could
10 increase the leachate contamination.

11 MS. OLSON: What if the facility was
12 unlined?

13 MR. SODERBERG: Well, if the
14 facility is unlined, there is continual leaching
15 and the quicker you can remove that, that source,
16 the better in terms of groundwater quality.

17 MS. OLSON: So I'm going to ask the
18 question again. Is it possible that the removal
19 activities could increase or cause an increase in
20 groundwater contamination while the removal
21 process is ongoing?

22 MR. SODERBERG: I suppose it's
23 possible, yes, but there is benefit of having a
24 long-term source control by the removal.

1 MS. OLSON: And do you have an
2 estimate of how long it would take to move 34,000
3 tons of coal combustion waste?

4 MR. ARMSTRONG: I believe you asked
5 the same question for two million.

6 MS. OLSON: And 34,000 is different
7 than two million.

8 MR. ARMSTRONG: So are we going to
9 go through all the numbers?

10 MS. OLSON: No.

11 MR. ARMSTRONG: Just a couple?

12 MS. OLSON: Just that one number.

13 MR. SODERBERG: So 34,000 I only
14 have experience at one site. It was a different
15 type of site and it took about six months.

16 MS. OLSON: Thank you.

17 MS. BUGEL: I have some follow up on
18 that line of questions. Are there protections
19 that can be put in place during removal that
20 limits contamination of groundwater?

21 MR. SODERBERG: Certainly.

22 MS. BUGEL: Can you give some
23 examples?

24 MR. SODERBERG: I mean, during

1 removal there -- this removal could happen after a
2 short-term solution such as a groundwater trench
3 or a hydraulic barrier was put in place. That
4 could prevent some additional migration of
5 contamination. During the removal action, you can
6 try to reduce the fugitive dust and the temporary
7 placement of ash could be managed or greatly
8 reduced to limit the amount of leachate that may
9 escape from the terrain during the removal action.

10 MS. BUGEL: If there was an instance
11 where the environment and the human health were
12 more protected by leaving coal ash in place, would
13 you recommend removal in that instance?

14 MR. SODERBERG: If leaving coal ash
15 in place after dewatering of that coal combustion
16 waste was more protective of human health and the
17 environment, yes, I would recommend that.

18 MS. BUGEL: And in your
19 experience -- in your experience, is removal
20 generally more protective or less protective than
21 leaving coal ash in place?

22 MR. SODERBERG: I believe I answered
23 that yes. Generally, it's the most protective.

24 MS. BUGEL: Okay. I have no further

1 questions at this time.

2 MS. OLSON: I've got a follow up.
3 Is it possible that during the removal process the
4 geochemistry of the groundwater would change?

5 MR. SODERBERG: Probably not the
6 geochemistry of the groundwater. I mean, it is a
7 dynamic system so it is going to change over time,
8 but if you're asking about the geochemistry of
9 poor water within the impoundments that is
10 probably going to be more affected by the removal
11 action in the groundwater.

12 MR. JENNINGS: If a trench or slurry
13 wall limits the movement of the ash during
14 removal, is there a reason that you wouldn't use
15 that as corrective action without closure?

16 MR. SODERBERG: It's a reasonable
17 corrective action prior to -- it's a reasonable
18 corrective action.

19 HEARING OFFICER FOX: Anything else
20 from the Agency? Mr. Rieser, I noticed your hand
21 up.

22 MR. RIESER: When you talk about
23 removal, where would the material be taken after
24 it was excavated from the impoundment?

1 MR. SODERBERG: A landfill.

2 MR. RIESER: Okay. Are you familiar
3 with the distinction or I should say the category
4 of -- the different categories of waste in
5 Illinois specifically general municipal waste as
6 opposed to special waste?

7 MR. SODERBERG: I'm aware of
8 different classes of waste, but not to that
9 specification.

10 MR. RIESER: Would you know which
11 category coal combustion waste would come in if it
12 had to be disposed of in a landfill?

13 MR. SODERBERG: No.

14 MR. RIESER: Have you evaluated the
15 amount of existing landfill space in Illinois to
16 determine whether there is sufficient space for
17 the coal combustion material?

18 MR. SODERBERG: No.

19 MR. RIESER: Thank you.

20 HEARING OFFICER FOX: Mr. King, I
21 saw your hand up.

22 MR. KING: Just a follow up.

23 HEARING OFFICER FOX: If you would
24 quickly, though, Mr. King -- I'm sorry. I don't

1 think you spoke. Just let the court reporter know
2 your full name, please.

3 MR. KING: Gary King, G-A-R-Y,
4 K-I-N-G.

5 HEARING OFFICER FOX REPORTER: And
6 your firm?

7 MR. KING: Arcadis, A-R-C-A-D-I-S.

8 MS. ANTONIOLLI: He is commenting on
9 behalf of Ameren Missouri and Amerenenergy Medina
10 Valley Cogen.

11 MR. KING: Since you commented that
12 this material would go to a landfill, would you
13 support the construction of more landfills in the
14 State of Illinois?

15 MR. SODERBERG: If necessary, yes.

16 HEARING OFFICER FOX: Anything
17 further, Mr. King?

18 MR. KING: Does that represent a
19 policy conclusion from the proponents of the
20 counterproposal?

21 MR. ARMSTRONG: I think I can
22 address that. The intent of the counterproposal
23 is that storing coal combustion waste in
24 circumstances that threaten human health and the

1 environment is a policy to be avoided. A
2 preferable policy is for that coal contamination
3 waste to be stored in lined landfills as opposed
4 to -- as between the choice of the construction of
5 a new landfill and the storage of coal combustion
6 waste in an area where it threatens human health
7 and the environment, the groups would support the
8 construction of adequately permitted, safe
9 landfills for the disposal of the coal waste --
10 coal combustion waste.

11 MR. KING: What is the distinction
12 between protection of human health and environment
13 and technical infeasibility?

14 MR. ARMSTRONG: I'm not sure -- what
15 is the distinction?

16 MR. KING: Because you structured
17 your proposal not based on protection of human
18 health and the environment. You're structuring
19 your proposal based on technical infeasibility.

20 MR. ARMSTRONG: I'd refer you to the
21 proposed language that we suggest which, again, is
22 closure shall be by removal of all impounded coal
23 combustion waste and --

24 MR. KING: Excuse me. Could you

1 give me a page reference so I can find it?

2 MS. FRANZETTI: Thirty-four.

3 MR. ARMSTRONG: Page 34.

4 841.400 (b).

5 MR. KING: Is this statement --

6 MR. ARMSTRONG: Correct. "Closure
7 shall be by removal of all impounded coal
8 combustion waste and leachate from coal combustion
9 waste unless the Agency determines that removal is
10 technically infeasible or would not result in
11 greater protection of human health and the
12 environment."

13 MR. KING: So what does that second
14 phrase mean "or would not result in greater
15 protection"? I mean, if the site is protective of
16 human health and the environment with the coal ash
17 staying in there and with a cap put on it, is that
18 sufficient under what you've proposed here?

19 MR. ARMSTRONG: Yes. Because the
20 proposal is that if the Agency determines that
21 removal would not result in greater protection of
22 human health and the environment and it is
23 determined that closure by capping and leaving the
24 coal combustion waste in place does not present a

1 threat to human health and the environment, then
2 this standard is satisfied.

3 HEARING OFFICER FOX: Ms. Olson, I
4 want to do this. We have reached a point at which
5 we need to adjourn for the Board meeting. I know
6 we're not closing -- or recessing at an ideal
7 point, but, Mr. King, I've made a note that you
8 are in the middle of some questions about that
9 issue.

10 I want to ask the participants
11 here to do this. While, of course, the Board
12 meeting is public and you are welcome to attend, I
13 would urge you if you are not planning to do so to
14 take advantage of the opportunity to get lunch
15 downstairs.

16 What I would like to do is since
17 we're making progress through the questions and
18 have nearly exhausted yours I think,
19 Ms. Franzetti, is resume at 11:30 and begin to
20 wrap up your questions and turn to the Agency as
21 quickly as we can without a later lunch break in
22 the middle of the day. So let's resume here at
23 11:30 and with that we'll take that 45-minute
24 break and resume then.

1 (Whereupon, a break was taken
2 after which the following
3 proceedings were had.)

4 HEARING OFFICER FOX: Thank you for
5 your promptness in returning from the break. I
6 appreciate your help in moving this forward. I do
7 before we go back on the record and I apologize
8 again, Mr. King, that we interrupted you at a
9 slightly awkward point. We'll get to you in just
10 a moment. I had one request, Mr. Armstrong, for
11 the environmental groups. A simple one I should
12 have addressed earlier.

13 The proposed rule language that
14 you had submitted to the Board earlier this week
15 sought to add to the incorporations by reference
16 two specific documents. One, the US EPA document
17 addressing operating procedures and the second a
18 US geological survey document addressing specific
19 field techniques.

20 I cannot and do not, of course,
21 suggest that the Board will propose or adopt those
22 for incorporation, but under the Administrative
23 Procedures Act we must have a single copy of those
24 in full in the event that you do follow that

1 course.

2 May I ask you in a post-hearing
3 filing either with other documents or on its own
4 to please submit to the Board a single copy of
5 those two documents for that purpose?

6 MR. ARMSTRONG: Those documents were
7 attached as exhibits to Dr. Soderberg's testimony
8 and I actually have a single copy of each one
9 right here today so if I can provide those now.

10 HEARING OFFICER FOX: That would be
11 terrific.

12 MR. ARMSTRONG: There you go.

13 HEARING OFFICER FOX: Thank you very
14 much. If the record would just reflect
15 Mr. Armstrong has provided to the Hearing Officer
16 a single copy of the document entitled US EPA
17 Operating Procedure Poor Water Sampling to submit
18 to the clerk for consideration as an incorporation
19 by reference and also has supplied a single copy
20 of a document entitled US Geological Survey Field
21 Techniques for Estimating Water Fluxes Between
22 Surface Water and Groundwater. Again, simply for
23 the purpose of consideration as a document for
24 incorporation by reference.

1 With that, is there any other
2 housekeeping or procedural information to run
3 through? Neither seeing nor hearing any, my
4 recollection, Mr. King, quite clearly was that you
5 in response to Ms. Franzetti's questions have some
6 follow-up questions for the environmental groups
7 witnesses pertaining specifically to the closure
8 of sites and if we may return to you to wrap up
9 any questions that you still had, it is certainly
10 time to do that. Thank you.

11 MR. KING: Andrew, I think we were
12 kind of dialoging a little bit at the end before
13 we took a break about 400(b) in your proposal.

14 MR. ARMSTRONG: Yes.

15 MR. KING: As you were discussing
16 it, you were indicating -- I quibble a little bit
17 about the way you have the language structured,
18 but basically you're saying -- you were saying
19 that in that first paragraph there would be a
20 demonstration that it is technically infeasible
21 for -- or that you would be protecting human
22 health and the environment.

23 MR. ARMSTRONG: And that is a
24 correct interpretation of that first sentence. I

1 just add onto that --

2 MR. KING: Did you say incorrect?

3 MR. ARMSTRONG: I'm sorry. That's a
4 correct interpretation of that first sentence. I
5 would just add onto it that furthermore in the
6 second sentence "If any of the following criteria
7 are present, closure shall be by removal unless
8 technically infeasible," meaning that in these
9 three conditions it should be presumed that
10 removal would result in greater protection of
11 human health and the environment and the three
12 scenarios there are: One, coal combustion waste
13 is present in the water table; two, the unit is
14 located in a floodplain or wetlands or, three, the
15 unit has been constructed over a mine, void and
16 any other unstable terrain that places the unit's
17 integrity at risk.

18 And to further note, there was a
19 question of Dr. Soderberg whether he had helped
20 draft these conditions and he testified that he
21 did not help draft these conditions. However,
22 Traci Barkley on our panel was with the
23 environmental groups that are proposing these
24 additions and she can speak to the reasoning

1 behind this condition. So I know I'm not asking a
2 question, but --

3 MR. KING: I was going to -- that's
4 great because I wanted to ask you about -- ask you
5 about those questions. You said it creates a
6 presumption. I think it does more than that.
7 It's not just creating a presumption. It is
8 saying that if any one of these three conditions
9 exist regardless if there is a demonstration of no
10 impact to human health for the environment, it has
11 to be removed.

12 MR. ARMSTRONG: Correct. It's an
13 irrebuttable presumption.

14 MR. KING: Right. Okay. So let's
15 look at a couple of those anyways. The unit is
16 located in a floodplain. Now, if you had a
17 situation where an impoundment has been capped,
18 it's had an impermeable liner put on it, it's had
19 two feet of soil cover put on it consistent with
20 the Agency proposal, there is a demonstration that
21 no one is consuming the groundwater around the
22 unit, there is a demonstration that the
23 groundwater levels have gone down as far as the
24 containment levels, the unit is protected by a

1 levy although it is in a floodplain, you would
2 still say in that situation that it is an
3 irrebuttable presumption that that unit should be
4 removed?

5 MR. ARMSTRONG: So, first of all,
6 can I ask are you referring to a specific site in
7 Illinois or is this a hypothetical site?

8 MR. KING: I have a site in mind,
9 but it certainly could apply to more than one
10 site.

11 MS. BARKLEY: So when you have a
12 coal ash pit that is built in a floodplain, the
13 assumption that floodplain is going to be used
14 sometimes -- a couple times a years, sometimes
15 every couple of years, I think we all know,
16 especially in this state, that levies fail, levies
17 don't always hold back all the waters from some of
18 the larger flood events and when you have a cap
19 that prevents water or precipitation or runoff
20 from getting in from the top it doesn't do
21 anything for what is coming up through the bottom.

22 So when you have flood waters
23 rising backing up into the connected groundwater
24 in that floodplain zone at the river, that allows

1 for that water to pull up through the groundwater
2 and potentially reach coal ash contaminants,
3 mingle with those coal ash contaminants and when
4 the waters then subside move those, immobilize
5 those pollutants into the river.

6 MR. KING: Would you agree that the
7 purpose of making a policy decision relative to
8 this type of recommendation should be whether it's
9 necessary to protect human health and the
10 environment? Shouldn't that be the overwhelming
11 policy determination and not just create in a rule
12 an irrebuttable presumption that you have to
13 remove it regardless of what the facts and the
14 situation are with regards to a specific site?

15 MS. BARKLEY: I agree and I think
16 that's why you look at a longer timeframe, which
17 there is a lot of engineering designs that could
18 be put in place that would work in a short-term
19 way, but when you're talking about meandering
20 rivers, floodplains, mine voids, wetlands, the
21 connection between surface and groundwater, those
22 are conditions that are not likely to change and
23 should be addressed.

24 If these things are being closed

1 once and they're being closed with the presumption
2 that they're going to protect into the future, I
3 think you have to consider that longer time scale
4 and on that time scale you have to deal with some
5 of these larger events like flooding, like mine
6 voids, like that connection to between surface and
7 groundwater.

8 MR. KING: So regardless of the
9 long-term projections as to the facility, it would
10 still have to be removed even if it could be
11 demonstrated -- there is no demonstration that
12 could be made that would allow coal ash to remain
13 in a unit in a floodplain? No environmental
14 protections could be put on that unit in a way
15 that would allow it to remain?

16 MR. ARMSTRONG: So under this rule
17 it does provide that if any of the following
18 criteria are present closure shall be by removal
19 unless technically infeasible and one of those
20 factors is if the unit is located in a floodplain
21 or wetlands. Now, as with any regulation of the
22 Board, there are site specific relief mechanisms
23 available through the act, but under this rule the
24 base line rule would be that if coal combustion

1 waste -- I'm sorry. If coal combustion waste is
2 present in the water table, the unit is located in
3 a floodplain or wetlands or it's been constructed
4 over a mine, void or other unstable terrain that
5 puts the unit's integrity at risk, the rule is
6 that is not a safe place to permanently store coal
7 combustion waste.

8 MR. KING: But we're setting a rule
9 that is determining public policy for the state
10 and, in essence, you're mandating that some
11 extraordinary process be engaged outside of these
12 rules in order to make a justification with regard
13 to these rules. You're setting it up so that
14 there is not a possibility under these rules to
15 make a justification.

16 MR. ARMSTRONG: I think I've
17 answered that question.

18 MR. KING: I think you have, too.
19 Let me ask you about number three just so I'm
20 understanding what is modifying what. It says
21 "unit has been constructed over a mine." By that
22 do you mean a mine that puts the unit's integrity
23 at risk? Does "unit's integrity at risk" modify
24 mine and void as well as unstable terrain?

1 MS. BARKLEY: I think for reference
2 mine here is referring to an underground mine
3 where coal has been removed and there is now a
4 void with potential for subsidence, the falling in
5 of the surface to fill that underlying void.

6 MR. KING: So is mine different from
7 void or do they mean the same thing there?

8 MS. BARKLEY: Well, an underground
9 mine would be a void. There may be other types of
10 voids. I'm not sure if I have an example of what
11 that would be, but I think the idea is if there is
12 a piece of earth missing underneath an ash
13 impoundment that would contribute to instability
14 of that ash pit or pond that is the situation
15 where we think that ash should be removed in the
16 interest of protecting human health and
17 environment.

18 MS. ANTONIOLLI: So was your answer
19 to Gary's questions, yes, that that phrase
20 "putting the unit's integrity at risk" that
21 modifies mines, voids as well as any other
22 unstable terrain?

23 MS. BARKLEY: I think that is a
24 modifier and -- yes.

1 MR. KING: Thank you. And one -- I
2 was out of the room earlier and if this was asked
3 and answered, I apologize, but have you
4 established a definition of technically
5 infeasible?

6 MR. ARMSTRONG: There is not a
7 definition of technically infeasible in the rule.

8 MR. KING: Are there examples of
9 what is technically infeasible?

10 MR. ARMSTRONG: The intention was
11 that this would be the determination of the Agency
12 that it is technically infeasible.

13 MR. KING: I mean, as the proponents
14 of this language, were there things that you had
15 in your minds when you used that phrase? Did that
16 have meaning to you or was it just to be
17 undetermined? I'm trying to figure out what was
18 meant by that.

19 MR. ARMSTRONG: Well, technically
20 infeasible would mean that removal simply because
21 of whatever consideration is not feasible. If it
22 is going to cost a trillion dollars to remove --
23 if it is not possible to do with the resources of
24 the company, for example, that's not technically

1 possible.

2 MR. KING: So there is an element of
3 economic reasonableness then in terms of what
4 you're stating as far as technical infeasibility?

5 MR. ARMSTRONG: Insofar as if a
6 company could not accomplish the removal, then
7 that would make it technically infeasible.

8 MR. KING: Okay. So a company would
9 have to demonstrate that the removal would cause
10 it to go bankrupt and in that situation that would
11 be a demonstration of infeasibility?

12 MR. ARMSTRONG: I'm sorry. Can you
13 please repeat your question?

14 MR. KING: I believe -- I don't
15 know -- I'll try to rephrase it. I won't be able
16 to do it exactly.

17 MR. ANTONIOLLI: Ask the court
18 reporter. Can the court reporter please repeat
19 the question?

20 (Whereupon, the record was read
21 as requested.)

22 MR. ARMSTRONG: That is not what I'm
23 saying. The intention of our putting the standard
24 into the rule is that it would be a determination

1 by the Agency of whether that removal was
2 technically infeasible. This determination would
3 come about through the approval of a closure plan
4 and underneath -- under the requirement for a
5 closure plan. We propose that the Agency shall
6 evaluate alternatives and this is on -- this is
7 841.410(a)(3) on page 38 that the Agency would
8 evaluate alternatives to the proposed closure
9 activities including whether any alternative
10 closure activities would result in greater
11 protection of human health and the environment and
12 if closure is not proposed by the removal of all
13 coal combustion waste and leachate from coal
14 combustion waste an explanation of why removal is
15 technically infeasible or would not result in
16 greater protection of human health and the
17 environment.

18 I'm sorry. What I should have
19 said is this closure plan is prepared by the owner
20 or operator, submitted to Illinois EPA and
21 includes the evaluation of alternatives as well as
22 the estimates of the cost of closure and post
23 closure care including of each evaluated closure
24 alternative. So that is in the environmental

1 groups proposal Section 841.410(a)(3) and (a)(6).

2 So, therefore, the intent behind
3 these proposed amendments is that the case is made
4 by the owner or operator to Illinois EPA, Illinois
5 EPA using its technical judgment determines
6 whether it considers removal to be technically
7 infeasible and/or would not result in greater
8 protection of human health and the environment
9 based upon an estimate of the cost of closure and
10 post-closure care including of each evaluated
11 closure alternative. The public is allowed the
12 ability to comment on this proposed closure plan
13 and then the Agency ultimately makes the
14 determination. So we are not in this rule
15 providing any specific criteria by which to
16 evaluate technically infeasible, but it is a
17 consideration that would be left to the Agency.

18 MR. KING: But you made it a
19 cornerstone of your proposal. You made technical
20 infeasibility a cornerstone of your proposal. How
21 is the Agency supposed to determine that without
22 guidance in the rule as to what that means?
23 That's the purpose of a rule is to provide
24 guidance to an administrative agency the decision

1 it is supposed to make. No definition. No
2 examples.

3 MR. ARMSTRONG: So could you repeat
4 your question?

5 MR. KING: I guess I was making more
6 of a comment and looking for your response to the
7 comment. But the crux of what I was saying is
8 that Illinois EPA as an administrative agency is
9 going to be guided by the words of the rules.
10 Okay? And if there is no definition or guidance
11 given with regards to that critical component, how
12 are they supposed to be able to make a decision?

13 MR. ARMSTRONG: I can provide you an
14 example of where technical infeasibility is used
15 in other regulations and one of those is the
16 antidegradation demonstration that is required
17 under the Clean Water Act.

18 MR. KING: Okay. That would be at
19 least a start.

20 MR. ARMSTRONG: I guess I would
21 respond that when you compare this to the
22 antidegradation requirements, that is a similar
23 requirement where there is a standard of
24 technically and economically reasonableness that

1 is used in the regulation without being defined.

2 MS. ANTONIOLLI: I have heard the
3 mention of economic reasonableness or economic
4 feasibility a couple times in our discussion of
5 this, but there is no explicit mention in the
6 regulation. Would you agree that is some sort of
7 an amendment or revision to your proposed section,
8 proposed Section 841.240(b) should be amended to
9 include economics -- economic reasonableness?

10 MR. ARMSTRONG: I'm not prepared to
11 make that agreement at this time.

12 MS. ANTONIOLLI: Okay. Before we
13 leave this section, what was your intent with the
14 additional proposed Section (b)(1) coal combustion
15 waste is present in the water table?

16 MS. BARKLEY: There are instances in
17 our state where the water table -- where coal ash
18 is actually sitting in the water table so it is in
19 direct contact with groundwater and in some
20 instances you see surface water rising up and
21 pushing that water table even higher. So National
22 Academy of Sciences when they put out their report
23 and I can't remember what year -- their first
24 number one point about reducing pollution from

1 coal ash is to isolate it from aquatic
2 environments because it immobilizes pollutants.
3 So to have coal ash directly in the water table
4 when that is allowing those pollutants to mobilize
5 and move through the groundwater system, the
6 hydrologic system, is irresponsible. That should
7 be removed through a high, dry place that is not
8 allowing that continually leaching of the
9 pollutant.

10 MS. ANTONIOLLI: Do you mean this
11 section was intended to mean that coal combustion
12 waste is present in the water table at that
13 particular unit that is closing or at any place on
14 that site where a unit is closing? If you can
15 just be more specific.

16 MS. BARKLEY: So when you get to the
17 point of applying Section 841.400 to a site that
18 is to be closed, we are saying that closure shall
19 be by removal if the coal combustion waste at that
20 unit is present in the water table unless the
21 Agency determines that it is technically
22 infeasible or removal would not result in greater
23 protection of human health and the environment.

24 MS. ANTONIOLLI: So of that unit?

1 MR. ARMSTRONG: Just to clarify your
2 statement. If coal combustion waste of the unit
3 is present in the water table, is there an
4 irrebuttable presumption under the environmental
5 groups proposal that closure would result in
6 greater protection of human health and the
7 environment?

8 MS. BARKLEY: Yes. Sorry.

9 MR. KING: So that would also apply
10 even if it was technically infeasible to remove
11 the coal ash because it is below the water table?

12 MR. ARMSTRONG: That wasn't my
13 question. My question was, is there an
14 irrebuttable presumption that removal is more
15 protective of human health and the environment if
16 coal combustion waste is present in the water
17 table and the witness's answer was yes.

18 MR. KING: Okay. So if it was
19 technically infeasible to remove that coal ash
20 that is below the water table, does that
21 irrebuttable presumption still apply?

22 MR. ARMSTRONG: The irrebuttable
23 presumption still applies, but under the operation
24 of the first sentence, removal is not required.

1 MS. ANTONIOLLI: Mr. Hearing
2 Officer, we're done with our questions on this
3 section.

4 HEARING OFFICER FOX: Mr. Rieser and
5 Ms. Olson, I don't mean to overlook you, but
6 Chairman Glosser had a follow-up question.

7 MS. GLOSSER: Mr. King, I'm trying
8 to understand what you're looking for in the
9 questions relating to technical infeasibility and
10 I'm wondering if you can point to an example of
11 where technical feasibility is defined so clearly
12 with criteria that it doesn't require Agency
13 judgment, it is just clearly identified one is
14 technically feasible and if you're looking for a
15 corollary for infeasibility?

16 MR. KING: What I was really -- what
17 I was really trying to hone in on is --

18 HEARING OFFICER FOX: Mr. King, may
19 I interrupt you for a moment? Ms. Antoniolli, I
20 think we've reached a point where we would need to
21 swear Mr. King in in order to respond to Chairman
22 Glosser's question. Do you have any objection to
23 that?

24 MR. RIESER: He is already sworn in.

1 MS. ANTONIOLLI: But not today so if
2 you'd like to go ahead and swear him in, that's
3 fine.

4 HEARING OFFICER FOX: I appreciate
5 that. Mr. King, if we can have you hold on for
6 just a second so the court reporter can swear you
7 in.

8 WHEREUPON:

9 GARY KING
10 called as a witness herein, having been first duly
11 sworn, deposeth and saith as follows:

12 HEARING OFFICER FOX: Mr. King,
13 thank you for letting me interrupt.

14 MR. KING: I was trying to hone in
15 on that because there are situations in Board
16 rules where, you know, technical feasibility and
17 infeasibility are important considerations, but
18 here it seems so fundamental to the
19 decision-making process that was going to occur
20 that there seemed -- there needed to be some
21 examples to be able to give guidance relative to
22 what was intended because normally the rules are
23 setup, really the emphasis is on demonstrating
24 that human health and the environment is going to

1 be protected and there is all sorts of ways -- as
2 in this rule, there is all sorts of ways that that
3 determination is made.

4 It is just here we have some
5 irrebuttable presumptions that don't allow a
6 company to make that demonstration. So the
7 technical infeasibility determination becomes much
8 more -- much more important. Just having seen
9 this a day or so ago, I can't give you a specific
10 regulatory citation.

11 MS. GLOSSER: Okay. I was just
12 trying to see if there was a corollary between
13 defining technical feasibility so I'd like to see
14 what you might be looking for to define
15 infeasibility. Otherwise, I don't know that
16 technical feasibility is defined to such an extent
17 that the Agency wouldn't be using their own
18 judgment based on the facts to say that this is
19 technically feasible or, the corollary, that it is
20 not feasible. So I was just trying to figure out
21 what you were looking for specifically.

22 MR. KING: I think I've answered to
23 the best of my ability.

24 MS. GLOSSER: Thank you.

1 HEARING OFFICER FOX: Ms. Olson, I
2 believe you have some follow ups.

3 MS. OLSON: I do. My questions are
4 going to be not focused on technical
5 infeasibility, but on greater protection. So if
6 anybody has a follow-up on the infeasibility line,
7 please go ahead.

8 HEARING OFFICER FOX: You've opened
9 the door to Mr. Rieser who is going to walk
10 through.

11 MR. RIESER: That is where I was
12 going. The reference that I think Ms. Barkley
13 made to the -- I don't know if it was the Clean
14 Water Act or the Board's antidegradation rules
15 paired the issues of technical feasibility and
16 economic reasonableness, which if I can just say
17 as a legal statement is common in the Board --
18 both in the Board's authorizing act and in the
19 Board's rules, but is it correct that I'm hearing
20 that you're unwilling to make that -- make that
21 relationship here, that your focus is purely on
22 whatever you're defining as technical
23 infeasibility and not including economic
24 reasonableness?

1 MR. ARMSTRONG: So what I answered
2 before is we weren't willing to agree to that
3 change today. We can take that issue under
4 advisement. In our proposal, it is clear what our
5 proposal was, but based on questions today, we can
6 consider whether an amendment to our proposal
7 would be appropriate.

8 MR. RIESER: And you also answered a
9 question with respect to Mr. King's discussion
10 about the irrebuttable presumption by saying this
11 was something that could be addressed with a site
12 specific rule. So is it your suggestion that
13 those types of decisions are decisions that the
14 Agency is incapable of making and have to be made
15 by the Pollution Control Board?

16 MR. ARMSTRONG: My point was that
17 our proposal would set the baseline rule to be
18 that in these three situations there is an
19 irrebuttable presumption and we see value not --
20 not that it's the Agency or the Board, but we see
21 value in that being the rule and then to get a
22 deviation from that rule would require a formal
23 process.

24 MR. RIESER: And that's a different

1 formal process than whatever the Agency goes
2 through in reviewing the closure plans and the
3 other process that you've laid out here?

4 MR. ARMSTRONG: It is a different
5 process, that's correct.

6 MR. RIESER: So the Agency can't
7 make that decision. It has to be --

8 MR. ARMSTRONG: The Agency under
9 this proposal cannot make that decision through
10 this process, that's correct, through the process
11 that is set out in the regulations.

12 MR. RIESER: Thank you.

13 HEARING OFFICER FOX: Ms. Olson,
14 please go ahead.

15 MS. OLSON: Thank you. My questions
16 are going to be about the language in your
17 proposed 841.400(b) greater protection. So I
18 believe Mr. King was asking you questions earlier
19 and I thought I heard him say -- ask a question
20 about if a cap provided protection of human health
21 and environment that would be okay under this
22 proposal, is that correct?

23 MR. ARMSTRONG: I don't know that
24 any of us answered that question, but if you're

1 asking a question can a cap be protective of human
2 health and the environment, in a general case it
3 would be our intention that there should be a
4 consideration and a comparison of whether capping
5 and leaving the CCW in place would result in
6 greater protection of human health and the
7 environment than a closure by removal.

8 MS. OLSON: Okay. I think there may
9 have been a misunderstanding so let me run through
10 some other questions to make sure we're all on the
11 same page.

12 MR. ARMSTRONG: Sure.

13 MS. OLSON: Let's assume in this
14 hypothetical that (b) (1), (2) and (3) are not at
15 play.

16 MR. ARMSTRONG: Okay.

17 MS. OLSON: So we're really only
18 looking at technical infeasibility, whether or not
19 removal would cause a technical infeasibility or
20 would not result in greater protection of human
21 health and the environment.

22 MR. ARMSTRONG: Correct.

23 MS. OLSON: So my first question to
24 kind of set this let's say would you agree that

1 it's possible that a cap could be placed over a
2 surface impoundment and that would provide
3 protection to human health and the environment?

4 MR. ARMSTRONG: Let me turn to my
5 hydro-geologist for a moment just so I can confirm
6 my answers. I would agree that if an impoundment
7 is capped, that provides greater protection to
8 human health and the environment than if the
9 impoundment is not capped.

10 MS. OLSON: So my question was does
11 it provide protection to human health and the
12 environment and am I correct to say that your
13 answer to yes?

14 MR. ARMSTRONG: Well, as the rule is
15 set out, it looks at the relative protection of
16 human health and the environment of different
17 alternatives. So if the two alternatives that
18 we're comparing are, one, leaving, for example, an
19 unlined impoundment uncapped and, two, capping an
20 unlined impoundment, then, yes, capping the
21 unlined impoundment offers greater protection of
22 human health and the environment than the first
23 alternative.

24 MS. OLSON: So it does offer

1 protection of human health and the environment?

2 Is that a yes or no?

3 MR. ARMSTRONG: I think I've already
4 answered the question. It offers greater
5 protection than if you leave it uncapped.

6 MS. OLSON: Okay. Let's say a
7 facility submits a closure plan showing a cap that
8 provides protection to human health and the
9 environment. Under the proposal of the
10 environmental groups, would that facility be
11 required to evaluate removal?

12 MR. ARMSTRONG: Yes.

13 MS. OLSON: And if removal showed
14 greater protection, would that facility be
15 required to remove all the coal combustion waste
16 even though capping provides protection to human
17 health and the environment?

18 MR. ARMSTRONG: In that scenario,
19 closure by removal wouldn't be required unless
20 technically infeasible and the judgment -- in the
21 best professional judgment of the Agency.

22 MS. OLSON: Thank you. I was --
23 that clarifies it for me. Thank you.

24 HEARING OFFICER FOX: Anything else,

1 Ms. Olson?

2 MS. OLSON: I have some questions on
3 voids if no one else has anything.

4 MS. LIU: Can I follow up on your
5 discussion earlier?

6 MS. OLSON: Sure.

7 MS. LIU: Ms. Barkley, you talked
8 about situations where providing a cap alone might
9 not be enough if you have interaction with the
10 water table for the mine voids and that kind of
11 thing. Is there a possibility that any of those
12 conditions that exist under (b) (1), (2) or (3)
13 could be addressed through engineering solutions
14 such that the engineering solutions would provide
15 greater protection than removal such as a
16 hydraulic barrier for shoring up those mine voids?

17 MS. BARKLEY: I think my answer to
18 Mr. King addressed the long-term -- what we're
19 looking for in this rule is long-term protection
20 of human health and the environment. So when I
21 think about water tables can be adjusted by
22 pumping, for example, in a certain timetable, but
23 that's not a long-term solution that requires some
24 sort of active pumping mechanism to change the

1 water table, which for, number one, is not a
2 long-term solution and what we're looking for in
3 this rule.

4 Number two, I think, you know,
5 for example, the Middle Fork of the Vermilion
6 River at the -- the Dynegy Vermilion site it seems
7 like over 70 years how the river has moved it is
8 actually -- rivers move. They meander over time
9 and that is not something the engineering controls
10 in the short-term should be used to address. I
11 think in the interest of protecting human health
12 and the environment, we would want to see that
13 coal ash removed so that you aren't putting the
14 expense into engineering controls that at best can
15 be shorter, medium controls.

16 I think mine voids -- that gets
17 a little bit tricky. I think maybe it's possible
18 for mine voids to be shored up although I think in
19 our state the problem is that some of the old room
20 and pillar mines have subsided, but research has
21 showed they've continued to subside over time as
22 well. So I think it is hard to determine whether
23 subsidence has been completed or will continue
24 with time and when you're talking about space

1 underground and the shifting of that aboveground
2 structure, I'm not sure that that is something we
3 want to leave up to engineering controls although
4 maybe this third point we could take into
5 consideration if there is some sort of evidence
6 entered into the record that mines could be -- or
7 voids could be filled and strengthened and support
8 structural integrity on the surface.

9 At this point, the rule does not
10 take into consideration civility issues at all and
11 certainly when we look at the Agency's responses
12 from, I believe, it was March 25th, there is a
13 long list of coal ash impoundments that have been
14 built over mine voids which may be unstable areas
15 in the long-term.

16 MS. LIU: In our remediation rules,
17 we have a provision for institutional controls
18 which stay with the property for perpetuity if
19 that is necessary and they address things like
20 engineering controls, making sure that they're
21 maintained. If there is a possibility that an
22 engineering control could be used in any of the
23 situations under (b) (1), (2) or (3) and allowed to
24 be considered for perpetuity through an

1 institutional control, wouldn't that be a
2 possibility to address some of these sites?

3 MR. ARMSTRONG: I think I can answer
4 that question. Our view would be that to the
5 extent that there are engineering controls
6 available that could address the issues
7 specifically in (b) (3) in which the unit has been
8 constructed over a mine, void or any other
9 unstable terrain, we would certainly consider
10 that -- I mean, one consideration that we would
11 raise is that with in terms of the long-term
12 engineering controls that there be financial
13 assurance in place that there would be continuing
14 upkeep of these engineering controls. With
15 respect to (b) (1) and (b) (2), though, for the
16 reasons that Ms. Barkley stated about the
17 unpredictability of waterways, we do not believe
18 that long-term engineering controls would be
19 reliable -- too reliable in those settings.

20 MS. LIU: Would there be situations
21 where they could be?

22 MR. ARMSTRONG: With respect to
23 (b) (1) and (b) (2)?

24 MS. LIU: Other than making an

1 ultimatum that these sites must remove, is there
2 room for situations where an engineering control
3 could be utilized rather than requiring removal as
4 an ultimatum?

5 MS. BARKLEY: When I think about the
6 specific instances in our state where this is
7 currently a problem, it will continue to be a
8 problem -- yeah, I cannot think of where that
9 would be acceptable to us to implement
10 institutional controls in the long-term to allow
11 for these sites to remain either with coal ash
12 directly in the water table or located in the
13 floodplain or wetlands. You know, there is two
14 sites in particular that come to mind that I think
15 about why we wrote these into our visions to the
16 rule. One is the Dynegy Vermilion site where we
17 have three ash pits. Two are old and unlined.
18 One is newer and lined. And I don't -- do we have
19 copies of this for the record?

20 MR. ARMSTRONG: We do have copies.
21 We have four images that we'd like to present as
22 exhibits at this time.

23 MS. BARKLEY: So the first is a
24 LIDAR map. It is a remote sensing map that --

1 LIDAR stands for light detection and ranging and
2 it allows for you to see high resolution
3 differences in the topography of the land and it
4 shows -- this is the Dynegy Vermilion site, the
5 river -- the Middle Fork of the river, which is
6 our only national scenic river in the state. If
7 you look -- just for reference, if you look at
8 this.

9 MS. DEXTER: You have to explain
10 with your words.

11 MS. BARKLEY: At the top of the page
12 in the middle within the river corridor, the river
13 is blue, the top site where you see kind of a
14 notched out corner of the pond that is north ash
15 pond system one. Below that is kind of kidney
16 shaped and oriented in an east/west direction is
17 old east ash pond and then there is another -- if
18 you follow the river down, there is another ash
19 pond and this is a new east ash pond system where
20 you can see the raised wall. That is the only one
21 that is lined. That was built in the '90s. All
22 three of these corollaries in the floodplain and
23 the Middle Fork of the Vermilion River and see
24 where the difference in the topography shows

1 between the yellow or the tan that is high ground
2 and the blue which is the low ground, these are --
3 as I mentioned before, Middle Fork of the
4 Vermilion River is meandering. It's a
5 free-flowing river and has shifted over the last
6 70 years towards the west, towards these ash
7 ponds.

8 MS. DEXTER: We should probably mark
9 that as an exhibit.

10 MR. ARMSTRONG: So I would move to
11 admit this exhibit as Exhibit 34.

12 HEARING OFFICER FOX: We would be at
13 34, Mr. Armstrong. You've heard the motion to
14 admit the map that Ms. Barkley just described as
15 Exhibit No. 34. Let me first take this up,
16 Mr. Armstrong. This is not captioned or entitled.
17 Is there a caption or title I can place on this to
18 clarify precisely what we're seeing here?

19 MR. ARMSTRONG: We can caption it
20 LIDAR, L-I-D-A-R, map of Dynegy Vermilion.

21 HEARING OFFICER FOX: Okay. With
22 that clarification, you have heard the motion to
23 admit the document entitled LIDAR Map of Dynegy
24 Vermilion as Exhibit 34 in this proceeding. Is

1 there any objection?

2 MR. RIESER: There might be. I need
3 to ask some questions.

4 HEARING OFFICER FOX: Please go
5 ahead, Mr. Rieser.

6 MR. RIESER: Ms. Barkley, who is
7 presenting or who can testify about this exhibit?
8 Ms. Barkley, I'm sorry. I'm not familiar with the
9 LIDAR technology. Is this something that is
10 commonly available or was this a specialized
11 activity or how was this produced if you can
12 describe?

13 MS. BARKLEY: So this is produced by
14 state scientists with the Illinois Natural History
15 Survey. Right now they're working on getting
16 these maps created statewide, but they only have a
17 few counties done at this time. It's publically
18 available information.

19 MR. RIESER: So this was produced by
20 the Illinois Natural History --

21 MS. BARKLEY: Survey.

22 MR. RIESER: Service. I'm sorry.

23 MS. BARKLEY: Survey.

24 MR. RIESER: Survey. Thank you.

1 Are these maps currently publically available?

2 MS. BARKLEY: Yes.

3 MR. RIESER: They're available on
4 the survey's website or where would they be
5 available?

6 MS. BARKLEY: I can provide that in
7 post-hearing comments, a website where you can get
8 to those publically available county level LIDAR
9 maps.

10 MR. RIESER: Okay. But it is
11 accurate that this was something that was not
12 produced by you or somebody under your direction
13 or control?

14 MS. BARKLEY: That's right.

15 MR. RIESER: Okay. Given that -- I
16 mean, it's a little odd, but given the Board's
17 broad rules about exhibits and rulemakings, this
18 came from the Illinois State Survey. Subject to
19 that, I don't have an objection.

20 HEARING OFFICER FOX: Very good.
21 Does anybody else wish to be heard on what's been
22 proposed for admission as Exhibit No. 34? Neither
23 seeing nor hearing any objection, Mr. Armstrong,
24 Ms. Barkley, it will be admitted as Exhibit 34.

1 (Document marked as Hearing
2 Exhibit No. 34 for
3 identification.)

4 MR. ARMSTRONG: We have three
5 additional images that we would like to submit as
6 exhibits.

7 MS. BARKLEY: So these photos were
8 all taken by members of Prairie Rivers Network.

9 MS. OLSON: Are these going to be
10 individually marked or is this a group exhibit?

11 MR. ARMSTRONG: We can mark these
12 individually.

13 MS. OLSON: Okay. Can we get them
14 marked so we know which ones we're talking about
15 here?

16 HEARING OFFICER FOX: Let's
17 establish the order if you wish to move for
18 admission of these the order in which you would
19 wish to do so.

20 MR. ARMSTRONG: So there is three
21 photos, which I'll describe to everybody who has a
22 copy of them.

23 HEARING OFFICER FOX: Let me
24 interrupt you, Mr. Armstrong. Is there anyone who

1 wishes to have copies who is waiting for them?
2 Ms. Dexter, there is one hand I see in the back.
3 If you wouldn't mind providing a copy. Ma'am,
4 Ms. Dexter will bring that to you in just a
5 moment. Thank you, Mr. Armstrong, for letting me
6 interrupt.

7 MR. ARMSTRONG: No problem. The
8 first photograph is an aerial photo. The second
9 photograph is a wider angle shot of the waterway
10 and the edge of the waterway. And the third photo
11 is a close --

12 MR. KING: Waterway where? Are you
13 talking about this one?

14 MR. ARMSTRONG: Yes, just for sake
15 of marking the exhibits I'm just describing the
16 exhibits so we can affix numbers to each one.

17 MR. KING: Okay.

18 MR. ARMSTRONG: And the third photo
19 is a close up of the ground so I would move to
20 have these images admitted -- I would first say
21 that the images should be marked in that order as
22 35, 36 and 37.

23 HEARING OFFICER FOX: Mr. Armstrong,
24 let's take those up one at a time. You had

1 proposed that the exhibit -- what would be marked
2 as Exhibit 35, if admitted, was I think you
3 referred to it as a wide angle photo?

4 MR. ARMSTRONG: Thirty-five was the
5 aerial shot.

6 HEARING OFFICER FOX: Aerial. Thank
7 you very much. And do you wish to move for
8 admission as an exhibit?

9 MR. ARMSTRONG: Ms. Barkley, could
10 you explain who took this photo and what this
11 photo is of?

12 MS. BARKLEY: So the aerial photo
13 is -- was taken by one of our members from -- it's
14 an aerial photo taken from a small plane. It is
15 facing south -- southwest. In the background,
16 upper left corner, you can see the Dynegy
17 Vermilion Power Plant and their fresh water lake
18 beyond that. On the left side of the photo, that
19 is the Middle Fork of the Vermilion River, the
20 state's only nationally designated scenic river,
21 and what you can see in the middle of the photo is
22 the north ash pond system. So there is a
23 settlement base on this kind of triangular shape
24 in blue and then there is some exposed water on

1 the right side of the pond or the north side of
2 the pond, but all the way -- this north ash pond
3 extends all the way to where you can see the road
4 and then to the south and east of that or to the
5 left of that is the east ash pond system.

6 MR. ARMSTRONG: Was this photo taken
7 this year?

8 MS. BARKLEY: This photo was taken
9 in March of this year.

10 MR. ARMSTRONG: I would move to
11 admit this as Exhibit 35.

12 HEARING OFFICER FOX: You've heard
13 the motion to admit the photo that Ms. Barkley had
14 just described as the aerial view as Exhibit No.
15 35 in this proceeding. Is there any objection?
16 Neither seeing nor hearing any, it will be so
17 marked, Mr. Armstrong, and admitted as Exhibit 35.

18 (Document marked as Hearing
19 Exhibit No. 35 for
20 identification.)

21 MR. ARMSTRONG: Moving onto the
22 photo we marked as Exhibit 36. Ms. Barkley, can
23 you tell us who took this photo?

24 MS. BARKLEY: This photo was taken

1 by a different member of the Prairie River Network
2 and this was taken two weekends ago.

3 MR. RIESER: I'm sorry. I couldn't
4 hear you.

5 MS. BARKLEY: Two weekends ago.

6 MR. ARMSTRONG: Can you describe
7 what the photo depicts?

8 MS. BARKLEY: So this was taken from
9 the river. Our member was on a paddling trip on
10 the Middle Fork of the Vermilion River and this is
11 the east bank of the north ash pond system and
12 what you see -- it's a little hard to see, but in
13 the front there is some mangled wire. That is
14 what is left of a gabion, which is like a cage or
15 a metal wire cage of rocks that is supposed to
16 armor the river banks. That has failed. So you
17 can see what used to be a cage of rocks now along
18 the bottom of the river bank and there is also
19 some plastic lining that was behind the gabion
20 that is now shredded and what you see is the
21 groundwater seepage that is moving through. There
22 is a very distinct line where the groundwater is
23 seeping into the river and you can see that there
24 is some presence likely of iron and other metals

1 which is staining the bank of the river.

2 MR. ARMSTRONG: I move to admit this
3 as Exhibit 36.

4 HEARING OFFICER FOX: The
5 participants have heard Mr. Armstrong's motion to
6 admit as Exhibit No. 36. Is there an objection?

7 MR. RIESER: I would like to ask
8 some questions.

9 HEARING OFFICER FOX: Mr. Rieser,
10 please go ahead.

11 MR. RIESER: In Exhibit 35, which is
12 the aerial view, where is Exhibit 36 -- what part
13 of the visible bank of the Middle Fork, what part
14 of it does it depict?

15 MS. BARKLEY: So this particular
16 photo was taken -- let's see. If you look in the
17 river and the river meanders to the left and then
18 to the right and there is a little island there to
19 the right and further down the river there is an
20 exposed orangy, rocky area. That is where this
21 photo was taken and it's a high erosion spot along
22 the river because of the energy behind the water
23 as it comes around that curve and pushes towards
24 that far bank and has eroded away at the river

1 bank and the walls of the ash pond.

2 HEARING OFFICER FOX: Any other
3 questions?

4 MR. RIESER: No.

5 MS. OLSON: I object to the
6 characterization of the photograph. I don't think
7 there has been anything in evidence. This
8 photograph has not been taken by Mr. Barkley.
9 There has been no testimony that she tested, you
10 know, the streaks in the photos. So I don't
11 believe there is sufficient proof as to what that
12 substance is. So I don't object to the admission
13 of the photograph. I object to the
14 characterization.

15 HEARING OFFICER FOX: Your response,
16 Ms. Olson, is so noted and your lack of objection
17 is as well. Does anybody wish to address what has
18 been proposed as Exhibit No. 36? Neither seeing
19 nor hearing any, Mr. Armstrong, it will be so
20 marked and admitted as Exhibit 36.

21 (Document marked as Hearing
22 Exhibit No. 36 for
23 identification.)

24 MR. ARMSTRONG: Finally, with

1 respect to the photo marked Exhibit 36.

2 MS. DEXTER: Thirty-seven.

3 MR. ARMSTRONG: Thirty-seven.

4 Ms. Barkley, can you tell us who took this photo?

5 MS. BARKLEY: Another member of
6 Prairie River's Network, the same day as the
7 paddling trip in Exhibit 36.

8 MR. ARMSTRONG: I'm sorry. Can you
9 tell us where on the site this photo was taken?

10 MS. BARKLEY: The same place where
11 you see the failing gabions on the east bank on
12 the north ash pond system and I won't characterize
13 what you see in the photo, but I think it speaks
14 for itself.

15 MR. ARMSTRONG: I would move to
16 admit this photo as Exhibit 37.

17 HEARING OFFICER FOX: Mr. Rieser, I
18 saw your hand. Did you have questions or an
19 objection to the motion?

20 MR. RIESER: Ms. Barkley, were you
21 on this trip when these pictures were taken?

22 MS. BARKLEY: Not when these photos
23 were taken. I have seen -- I've seen the same
24 thing on several paddling trips over the last ten

1 years.

2 HEARING OFFICER FOX: You've heard
3 Mr. Armstrong's motion to admit the third of these
4 photos as Exhibit 37. Do any of the participants
5 have any objection to so admitting it? Neither
6 seeing nor hearing any, Mr. Armstrong, it will be
7 so marked and admitted as Exhibit 37.

8 MS. BARKLEY: So I just want to
9 complete my response, Ms. Liu, that this is an
10 example where we don't feel like there are
11 engineering controls that are going to last or
12 work against the power of the Middle Fork of the
13 Vermilion River that is actively wearing away at
14 the walls of the ash pits. When it floods, it is
15 reaching back up to the groundwater. The coal ash
16 has been shown to be within the water table at
17 this particular site. Engineering controls have
18 been put in place before, including gabions, have
19 obviously failed and, in fact, in Dynegy's latest
20 geo-technical support that was submitted to the
21 Agency in support of closure plans, what they
22 suggest is a number of -- I can get into this
23 later in my testimony. There are a number of
24 problems with their report and the assumptions

1 they use, but ultimately one of their solutions is
2 to continue to use gabions at this site. That is
3 not acceptable to our group as a long-term
4 solution.

5 HEARING OFFICER FOX: Mr. Rieser,
6 did you have a question?

7 MR. RIESER: I would object to the
8 reference to documents that aren't in this
9 hearing. If they want to bring the whole record
10 of that procedure because I'm sure there are a
11 number of documents that deal with those issues
12 from Dynegy's perspective.

13 HEARING OFFICER FOX: So noted. I
14 think we're prepared to move on. Mr. Armstrong,
15 do you have any additional responses that you
16 needed to offer to any of the questions that have
17 been on the table?

18 MR. ARMSTRONG: No, I think we're
19 prepared to hear more questions.

20 HEARING OFFICER FOX: Very good.
21 Mr. King, did you indicate you had a follow up?

22 MR. KING: Yeah, I would like to.
23 I'm reviewing 841.200 and it talks about
24 hydro-geologic site characterization. Looking

1 through this, I appreciate the concern about a
2 meandering river and thus impacting the
3 impoundments. I don't see that you made any
4 changes to that rule that would require that kind
5 of issue to be addressed and I was wondering if
6 rather than -- again, I appreciate the
7 significance of the Middle Fork of the Vermilion
8 and the concerns raised about this one site, but
9 then to mandate with an irrebuttable presumption
10 for all impoundments in the state when it would
11 seem that if you had -- if you were able to
12 address that in a -- through the site specific
13 information, including perhaps something that, you
14 know, required you to look at the meandering
15 issues, wouldn't that be a viable way to deal with
16 this issue as opposed to the irrefutable
17 presumption?

18 MR. ARMSTRONG: I think as we have
19 testified on several occasions, no. We believe
20 that the irrebuttable presumption is necessary for
21 the reasons that Ms. Barkley gave earlier.

22 MR. KING: Because of this one site?
23 Because of this one site all impoundments in the
24 state are required to address the same risks that

1 are at this site?

2 MR. ARMSTRONG: No, that's not what
3 we have testified to. Ms. Barkley has presented
4 this site as an example of our concerns, the
5 specific example of our concerns that are
6 addressed by our proposed rule.

7 HEARING OFFICER FOX: Anything
8 further, Mr. King?

9 MR. KING: Are there other specific
10 examples?

11 MS. BARKLEY: I would like to, one,
12 make the blanket statement that I don't think
13 there is enough information available for those
14 power plants that have their ash ponds located
15 along rivers to determine at all sites if and
16 whether there is a connection between surface
17 water and groundwater, how much flooding impacts
18 the ponds. That is information that I think still
19 has to come forward and be collected at many of
20 these sites. Another example I provided was
21 Edwards facility where those ash pits are built
22 within the floodplain and, in fact, during the
23 last NPDES permit process requested permission to
24 allow for pumping from the ash ponds into the

1 river during times of high water. I'd like to
2 read from the letter. So this is a letter from
3 Ameren --

4 MS. OLSON: Pardon me. Before you
5 read from that letter, can you please identify it
6 and state whether or not it is in the record.

7 MR. ARMSTRONG: Yes. We will -- I
8 believe that Ms. Barkley is just going to describe
9 the date of the letter and who it's to and from
10 and then we'll hand out copies.

11 MS. BARKLEY: This is a letter from
12 Ameren. John Pozzo, managing supervisor from
13 Ameren Services to Bill Buscher of the Illinois
14 Environmental Protection Agency. It's dated March
15 6th, 2012.

16 MS. OLSON: Is it currently in the
17 record?

18 MR. ARMSTRONG: We're going to pass
19 it out right now.

20 MS. OLSON: Was it attached to
21 Mr. Soderberg's testimony?

22 MR. ARMSTRONG: I don't believe so.

23 MS. OLSON: Okay.

24 MS. BARKLEY: One moment. I think I

1 described -- that March 6th, 2012, letter was
2 attached to Dr. Soderberg's testimony. The letter
3 that I'm referencing is from Ameren's Edwards
4 station. So the letter that I'm referencing is
5 from Ameren from Michael Smallwood, consulting
6 environmental engineer, to Darin LeCrone, division
7 manager at Illinois EPA, from November 15th, 2011.
8 So on the top of page two --

9 MR. ARMSTRONG: One moment.

10 MS. BARKLEY: Sorry.

11 MR. ARMSTRONG: So as Ms. Barkley
12 stated, this is a November 15th, 2011, letter that
13 was sent to Illinois EPA. I move to admit this as
14 exhibit -- Hearing Exhibit No. 38.

15 HEARING OFFICER FOX: The
16 participants have heard Mr. Armstrong's motion to
17 admit the letter that he has just described as
18 Hearing Exhibit 38. Is there any objection?

19 MR. RIESER: I don't know what it is
20 an exhibit of. What is it supposed to accomplish?

21 HEARING OFFICER FOX: Mr. Rieser,
22 would you like to pose that question or to sponsor
23 the exhibit?

24 MR. RIESER: I guess I'd like to

1 hear that before I decide whether I'm going to
2 object or not.

3 HEARING OFFICER FOX: So,
4 Ms. Barkley, you were explaining your concern with
5 the Edwards facility. Could you repeat that
6 concern and explain what this letter will
7 demonstrate?

8 MS. BARKLEY: So our concern is the
9 E.D. Edwards Power Plant has their ash pits in the
10 floodplain of the Illinois River, which in this
11 letter describes the problem with that. So I'd
12 like to read from the letter. "Ash --

13 MR. ARMSTRONG: So what does the
14 letter establish?

15 MS. BARKLEY: The letter establishes
16 that during high water elevation times the
17 Illinois River -- the water backs up. The river
18 water backs up into the ash pond and they pump out
19 the ash pits into the Illinois River.

20 MR. ARMSTRONG: And is this a
21 further answer to Mr. King's question regarding
22 the existence of sites in Illinois that present
23 difficulties that are addressed by the
24 environmental group's proposed rule?

1 MS. BARKLEY: Yes.

2 MR. ARMSTRONG: I would move to
3 admit as Exhibit 38.

4 HEARING OFFICER FOX: Mr. Armstrong
5 has restated his motion to admit this letter as
6 Exhibit 38. Mr. Rieser, did you have anything
7 else you wish to take up on this?

8 MR. RIESER: No, thank you.

9 HEARING OFFICER FOX: Did any other
10 participant wish to lodge an objection?
11 Ms. Olson, I see your hand up.

12 MS. OLSON: I do not have an
13 objection. I would like to reserve the right to
14 ask questions about this document of the witness.

15 HEARING OFFICER FOX: Very good.
16 Neither seeing nor hearing any other response or
17 objection, Mr. Armstrong, it will be admitted into
18 the record as Exhibit No. 38 as moved.

19 (Document marked as Hearing
20 Exhibit No. 38 for
21 identification.)

22 MR. ARMSTRONG: Ms. Barkley, could
23 you read the relevant provision of the letter?

24 MS. BARKLEY: So at the top of page

1 two under ash pond discharge outfall 001
2 discharge/alternate discharge. The letter reads
3 "Also as described in Attachment L of the renewal
4 application package, the ash pond discharge at
5 this facility is influenced by high receiving
6 stream (Illinois River) elevation which can result
7 in river water to reverse flow into the pond.
8 When necessary to fulfill internal corporate dam
9 safety requirements, the E.D. Edwards Power Plant
10 will pump the treated ash pond water directly to
11 the river at a point parallel to the outfall
12 structure. We request that the Agency provide a
13 new special condition to authorize this practice."

14 MS. OLSON: Can I ask some follow-up
15 questions?

16 HEARING OFFICER FOX: Ms. Olson,
17 please go ahead.

18 MS. OLSON: Do you know whether or
19 not this permit has been issued?

20 MS. BARKLEY: To my knowledge, the
21 permit has not been issued.

22 MS. OLSON: So do you know whether
23 or not the Agency provided any special condition
24 to authorize that practice?

1 MS. BARKLEY: The permit as written
2 right now does not contain a special condition
3 allowing pumping of the coal ash pit's water under
4 these conditions. It has been sought in the
5 permit renewal, but to my knowledge the Agency has
6 not issued the permit allowing that.

7 MS. OLSON: Thank you.

8 HEARING OFFICER FOX: Anything
9 further, Ms. Olson?

10 MS. OLSON: No.

11 HEARING OFFICER FOX: Okay.

12 MS. LIU: I have a couple.

13 HEARING OFFICER FOX: Ms. Liu, go
14 ahead.

15 MS. LIU: You mentioned pumping
16 treated ash pond water. Do you know what type of
17 treatment or effluent limits are in the permit or
18 the requested permit?

19 MS. BARKLEY: To my knowledge, the
20 treatment is settlement in the ash pond. I'm not
21 aware of any other treatment that is employed at
22 this site, but I would argue that when you have
23 water from the river reversing flow into the ash
24 pond that that is undoing any settlement that has

1 happened in that ash pond and that is exactly the
2 reason for our concern. If you have high water
3 elevation backing up and mixing with the ash, I
4 really question whether that treatment at that
5 point is effective and whether they would be able
6 to meet their limits at that outfall.

7 MS. LIU: But under the permit, they
8 would still be required to meet their limits,
9 correct?

10 MS. BARKLEY: I don't know what
11 their new permit will look like. Their existing
12 permit right now there are limits at 001 and I
13 don't right now know what those limits are, but we
14 could put that into the record what their existing
15 NPDES permit is.

16 HEARING OFFICER FOX: Anything
17 further, Ms. Liu?

18 MS. LIU: No.

19 HEARING OFFICER FOX: Mr. Rieser, I
20 saw your hand.

21 MR. RIESER: Dr. Glosser had a
22 question.

23 HEARING OFFICER FOX: I'm sorry. My
24 peripheral vision is bad.

1 MS. GLOSSER: I'm trying to make
2 sure I understand this. Is your concern that
3 you're trying to demonstrate more that -- the
4 effect of the river infiltrating the pond or a
5 combination with the request to EPA for a special
6 condition? Are you trying to illustrate the
7 ecological factors that are going on here or is
8 your concern that EPA is being asked to address it
9 in the permit or both?

10 MS. BARKLEY: Both. But I would say
11 that this is an example of a situation that is not
12 likely to change. The Illinois Rivers floods and
13 if it has -- I have no evidence that they have
14 been pumping into the river, although there is
15 evidence that the river had flooded multiple times
16 while those ash ponds have been in the floodplain.
17 Our concern is that this will be an ongoing
18 situation for them and if they're not able to
19 maintain treatment through settlement and are
20 taking on water that is not part of the
21 engineering design plan for how that ash pond is
22 supposed to operate and allow for them to reduce
23 pollution in Illinois rivers, then we would
24 contend this is not an appropriate site for these

1 ash pits to be maintained.

2 HEARING OFFICER FOX: Anything
3 further, Dr. Glosser?

4 MS. GLOSSER: No.

5 HEARING OFFICER FOX: Mr. Rieser?

6 MR. RIESER: Ms. Barkley, under the
7 part that you read there are two bullet points.
8 Could you read the first two sentences of the
9 bullet points that starts "special condition 18".

10 MS. BARKLEY: "Special condition 18
11 requires monitoring of several ash pond discharge
12 constituents. It is also our position that this
13 monitoring is of little or no merit as nearly all
14 values submitted with the facility renewal
15 application for these constituents were below the
16 required method detection limit consistent with
17 previous permit renewal applications."

18 MR. RIESER: Thank you.

19 HEARING OFFICER FOX: Anything
20 further?

21 MR. RIESER: No.

22 HEARING OFFICER FOX: Mr. King, I
23 believe we were addressing some of your series --
24 let me go to Mr. Armstrong very quickly.

1 MR. ARMSTRONG: I have a follow-up
2 question. Ms. Barkley, do you have any further
3 thoughts on that bullet point you just read?

4 MS. BARKLEY: I would just like to
5 point out that I'm not aware of special condition
6 18 of how frequent that monitoring is. It might
7 be that is just once per year annual monitoring
8 and I'm not sure under which condition that
9 monitoring must take place. One of our concerns
10 with this pumping of the flooded ash pond into the
11 river is whether or not the Agency is going to
12 require that every single time that pumping takes
13 place that that monitoring -- that monitoring be
14 conducted. If it is -- if monitoring is required
15 under the discharge monitoring reporting
16 requirement, it's possible that pumping as the
17 permit is written right now would not require
18 monitoring of that flooded discharge, but instead
19 would be met by regular monthly monitoring at that
20 site.

21 HEARING OFFICER FOX: Anything
22 further, Mr. Armstrong?

23 MR. ARMSTRONG: No.

24 HEARING OFFICER FOX: Very good.

1 Mr. King, we were dealing with some of your
2 questions on proposed Subpart 841.400(b) and your
3 gesture seems to indicate that you have wrapped
4 those up?

5 MR. KING: Yes.

6 HEARING OFFICER FOX: Do we have any
7 other follow up on what originally seemed to be a
8 long time ago as --

9 MS. FRANZETTI: I've aged ten years
10 in the last few minutes.

11 HEARING OFFICER FOX: With admirable
12 patience, Ms. Franzetti. I think that exhausts
13 both your questions number 32 through 40
14 addressing the proposed Subpart D. I do see a
15 hand from the Agency before we move on.

16 MS. OLSON: I had briefly mentioned
17 voids. I have a series of questions on voids.

18 HEARING OFFICER FOX: Please go
19 ahead.

20 MS. OLSON: I will try to make this
21 quick. So I'm referring to proposed Section
22 841.400(b) of the environmental groups proposal
23 and specifically (b)(3). Would the environmental
24 groups be willing to provide a definition of mine,

1 void and other unstable terrain so that we can
2 adequately evaluate this provision of the
3 proposal?

4 MR. ARMSTRONG: Yes, we would be
5 willing to provide a definition for the Agency's
6 consideration. We would note that in the March
7 25th, 2014, Illinois Environmental Protection
8 Agency's post-hearing comments in attachment one
9 Agency's responses to questions raised at the
10 first hearing, the environmental groups previously
11 asked "Can the Agency identify all CCW
12 impoundments known by the Agency to have been
13 constructed over a mine void?" The Agency did
14 answer with respect to specific impoundments, but
15 we have no problem providing further clarification
16 for the purpose of this rule.

17 MS. OLSON: Would you please also
18 specify the size of the void that would trigger
19 these rules?

20 MR. ARMSTRONG: Certainly. We can
21 put that in our proposed definition.

22 MS. OLSON: And would it be possible
23 to provide examples of unstable terrain?

24 MR. ARMSTRONG: Sure.

1 MS. OLSON: And did the
2 environmental groups consult a published study or
3 research report in generating the language in
4 (b) (1), (2) or (3)?

5 MS. BARKLEY: So (1), (2) and (3)
6 under Section B 841.400 does not come from a
7 published study or journal article, though it is
8 informed by a consortium of experts and folks
9 working with the environmental community that have
10 been working on issues on foreclosure at coal ash
11 impoundments nationwide.

12 MS. OLSON: I think you said that
13 there was no published study or research report
14 that formed the basis of this, but it was the
15 experts in house, is that a fair characterization
16 of what you said?

17 MS. BARKLEY: Well, yes. Although
18 in-house is not just folks that are here. We're
19 working with a group of people nationwide that are
20 looking at how to responsibly, comprehensively
21 close coal ash impoundments, not just in Illinois,
22 but nationwide.

23 MS. OLSON: Are any of those experts
24 present today?

1 MS. BARKLEY: I am.

2 MS. OLSON: Can you please provide
3 the credentials of those experts?

4 MS. BARKLEY: I think I can do that.

5 MS. OLSON: That's all I have.

6 MR. RAO: Are there any provisions
7 in the proposed US EPA's regulations for ash ponds
8 compared with these three criteria that you have
9 proposed here?

10 MS. BARKLEY: So EPA has proposed a
11 rule on coal ash management. The 2010 40 CFR Part
12 257 proposed rule does address unstable areas in
13 Section 257.64 and, if exhibited, requires closure
14 by five years after the effective date of the
15 final rule. Section 257.83 also requires that all
16 CCR coal combustion residuals, surface
17 impoundments be examined at intervals not
18 exceeding seven days for appearances of structural
19 weakness and other hazardous conditions. We also
20 feel that it is clear that structural integrity of
21 ash impoundments is highly valued by EPA since
22 they undertook a nationwide assessment of
23 impoundment stability in 2010 and 2011 and, in
24 fact, they released a notice of date of

1 availability on August 2nd, 2013, which announced
2 and invited comments on additional information
3 obtained by EPA in conjunction with the June 21st,
4 2010, proposed CCR rule. The information on which
5 they sought comment is categorized three ways.
6 The first is additional data to supplement the
7 regulatory impact analysis of the risk assessment;
8 two, information on large scale fill and, third,
9 and what is relevant here, is data on the surface
10 impoundment structure integrity assessments.

11 MR. RAO: Also, the Agency was
12 asking you for definitions of mine, void, terms
13 like that. When you refer to floodplain, are you
14 referring to a 100-year floodplain or a 50-year
15 floodplain or is there a specific type of
16 floodplain you're referring to?

17 MS. BARKLEY: We have not specified
18 in our proposed edits to the rule what level of
19 floodplain, but we'll take a look at that.

20 MR. RAO: And also the term wetland
21 if there is a definition of wetland.

22 MS. BARKLEY: We'll also look at
23 that.

24 MR. RAO: Thanks.

1 HEARING OFFICER FOX: Anything else,
2 Mr. Rao?

3 MR. RAO: No.

4 HEARING OFFICER FOX: Do I see any
5 other questions before we move on? I do see
6 Ms. Olson's hand.

7 MS. OLSON: Just one. Does US EPA's
8 proposal require removal, irrebuttable or
9 presumptive removal, when in unstable areas?

10 MS. BARKLEY: Not that I'm aware of.
11 They require closure by five years in unstable
12 areas, but I'm not aware that they require
13 removal -- closure by removal.

14 MS. OLSON: Thank you.

15 HEARING OFFICER FOX: Anything else?
16 Very good. I don't see any other questions.
17 Ms. Franzetti, it's been ten years and fifteen
18 minutes. At this point, I believe we are ready to
19 turn to your Subsection 7 surface water. It looks
20 like there are three questions including one that
21 has a second part. Why don't we at least get
22 started on those and see how we move along.

23 MS. FRANZETTI: It truly pains me to
24 say this, but I have one question before I read

1 question 41 and that is simply this clarifying
2 point here on (b) (1). Do you intend to interpret
3 coal combustion waste as being present in the
4 water table if there is a liner on the unit that
5 separates the CCW from the water table and that
6 liner meets the design requirements or
7 specifications that are contained in the final
8 rule adopted here?

9 MS. BARKLEY: I think when we look
10 at (b) (1) we were looking at coal combustion waste
11 in contact with the water table.

12 MS. FRANZETTI: Which wouldn't be
13 the case if there was an adequate liner under the
14 rules present?

15 MS. BARKLEY: Intact adequate liner.

16 MS. FRANZETTI: Thank you. Okay.
17 Question 41. On page 11 of your pre-filed
18 testimony, explain what type of monitoring system
19 you mean by your statement that the "monitoring
20 should include conventional monitoring wells
21 sufficient to establish the hydraulic gradient
22 between CCW impoundments and area where
23 groundwater may discharge to surface water."

24 And I acknowledge you talked

1 earlier and I think it was maybe yesterday about
2 mini piezometers, but this sounds different from
3 that because you refer to conventual monitoring
4 wells. So could you just explain what you're
5 envisioning by this statement?

6 MR. SODERBERG: Right. So part of
7 trying to quantify the flux of groundwater and
8 potentially flux of contaminants from the
9 groundwater to surface water, we need to establish
10 the hydraulic gradient that would exist between
11 the potential leaching impoundment and the
12 potential receiving surface water. That would --
13 I would envision be incorporated into the
14 monitoring well system for the site and, in
15 addition, there would be an assessment of some --
16 whether the groundwater is actually discharging to
17 the surface water.

18 MS. FRANZETTI: If the groundwater
19 is not discharging to the surface water, does it
20 then negate the need for any further monitoring
21 for that -- for this purpose?

22 MR. SODERBERG: Well, that as I
23 discussed yesterday is a dynamic system. So it
24 could change based on the seasons. I would leave

1 that in the environments where we're talking
2 about, you know, it is possible -- I would say
3 that it is likely that you would need to maintain
4 that monitoring. I would leave that up to the
5 Agency to determine that level of monitoring that
6 is required in each situation.

7 MS. FRANZETTI: Question 41(a).
8 Explain the frequency and scope of monitoring that
9 you're recommending would be performed on this
10 type of monitoring system.

11 MR. SODERBERG: Again, I think much
12 of it could be incorporated into the monitoring
13 system for the site on a quarterly basis. That
14 would presumably provide enough information about
15 seasonal changes to the water table and to the
16 discharge to the surface water.

17 MS. FRANZETTI: Am I correct then
18 that the monitoring wells that would be installed
19 for purposes of establishing the hydraulic
20 gradient between the impoundments and where the
21 discharge to surface water occurs would be
22 monitored for the same parameters, same
23 frequency -- and at the same frequency per the
24 rules as any other down-gradient monitoring well?

1 MR. SODERBERG: I would say yes
2 unless it is determined by the Agency that there
3 is a need for additional sort of hydrology only
4 monitoring to characterize that pathway.

5 MS. FRANZETTI: 41(b). Explain
6 whether any statistical analysis requirements
7 would also apply to this monitoring system as they
8 apply under the proposed rules to the impoundment
9 monitoring well system.

10 MR. SODERBERG: In terms of the
11 hydrology, there is geo-statistics that are
12 involved in establishing the hydraulic gradient of
13 the groundwater. The statistics that we were
14 talking about in terms of the chemical
15 constituents if this monitoring is done in the --
16 is built into the scope of the monitoring well
17 network on site, yes, then the statistical methods
18 would apply.

19 MS. FRANZETTI: I believe you've
20 already answered yesterday questions 42 and 43.
21 So I am done with my questions. Thank you very
22 much, Dr. Soderberg.

23 HEARING OFFICER FOX: Let's see if
24 there are any follow-up questions. Mr. Bugel, I

1 saw your hand up.

2 MS. BUGEL: I do. I have a couple
3 of follow up on this topic and then I have a
4 couple of follow up on earlier topics. I don't
5 know -- first, have you -- are you aware of this
6 type of monitoring of the hyporheic zone being
7 done for any remediation projects?

8 MR. SODERBERG: Yes, I believe there
9 was some discussion of this yesterday. There is a
10 workshop proceeding from the US EPA workshop
11 occurred in the year 2000 on groundwater/surface
12 water interactions and there is -- I would point
13 us to that. Fourteen case studies where this type
14 of characterization is performed and various ways
15 that it is performed whether it's a physical
16 direct measurement or a chemical technique.

17 MS. BUGEL: And just for the record
18 that is a document. We do not actually have
19 hardcopies of it today, but we can file it with
20 the Board after the proceedings today.

21 HEARING OFFICER FOX: Anything else,
22 Ms. Bugel?

23 MS. BUGEL: I do. Yeah, I have a
24 couple other questions on this topic. One other

1 on this topic. Yesterday, you were asked a
2 question about groundwater quality standards in
3 Illinois and your awareness of whether or not they
4 apply to a hyporheic zone. Assuming groundwater
5 policy standards in Illinois do apply to the
6 hyporheic zone, is there still a need to monitor
7 the hyporheic zone?

8 MR. SODERBERG: Yes. Whether
9 groundwater or surface water standards apply,
10 there is -- it appears groundwater standards
11 apply -- a need to characterize whether or not
12 there is a flux of contamination going from the
13 groundwater to the surface water and that was the
14 drive -- the reason I brought this monitoring up.

15 HEARING OFFICER FOX: Ms. Bugel, if
16 I may just interrupt you. Member Burke had a
17 question that she wished to pose.

18 MS. BURKE: We were just talking
19 about the monitoring on this issue of the
20 connection between groundwater and surface water.
21 In the environmental group's proposed language, I
22 see where those concerns might have made it into
23 the rules in Subpart B on monitoring, but my
24 question has to do with Subpart C and Subpart D.

1 Did you make any recommendations to reflect that
2 concern in the closure -- or the corrective action
3 or closure parts of the rule?

4 MR. ARMSTRONG: I can take a quick
5 look at that.

6 MS. BURKE: Okay. Not to keep you
7 guessing, but I was specifically going to point
8 you to the antidegradation language.

9 MR. ARMSTRONG: Yes. So you refer
10 to Section 841.310 on page 31. 841.310(g) -- I'm
11 sorry. 841.310(e)(6) is the first time that it is
12 mentioned. Under the corrective action plan, if
13 corrective action would lead to a new or increased
14 load of pollutants to surface waters, an
15 antidegradation demonstration as required by
16 35 Ill. Adm. Code 302.105(f) must be contained
17 within the corrective action plan and under
18 Subsection G must be put on public notice.

19 MS. BURKE: So was the intent of
20 that language and similar language to analyze the
21 possible discharge of groundwater to surface water
22 only or also any overland discharges to surface
23 water?

24 MR. ARMSTRONG: The sentence was to

1 cover any discharge to surface waters that could
2 result from the corrective action plan regardless
3 of the source, whether it be overland discharge --
4 Tracey, why don't you explain it.

5 MS. BARKLEY: So the reason behind
6 this is that for corrective action plans and
7 closure plans, there may be proposed discharges to
8 surface waters. It could be from dewatering of
9 the ash pond. It could be from pumping of the
10 contaminated groundwater plume and we want to make
11 sure that that proposed discharge of surface
12 waters is considered at the front end and is part
13 of the proposed corrective action and closure plan
14 so that that next plan isn't approved and put into
15 place and then considered under antideg when it
16 comes to the permitting which could happen a few
17 years later.

18 MS. BURKE: So what I'm trying to
19 understand is whether there is any gap in our
20 regulatory system. So we have regulations that
21 deal with surface water and we have NPDES
22 permitting and such and these rules, perhaps, are
23 going to address any impacts to groundwater and
24 exceedances to our groundwater standards. Does

1 this -- does an antidegradation demonstration, you
2 know, as you've pointed out in your proposal close
3 any gap that is not covered by those two systems
4 already?

5 MS. BARKLEY: We believe it does and
6 primarily because of the timeline. Certainly if
7 there is water that will be discharged to surface
8 waters like I mentioned the dewatering of the ash
9 pit or pumping of contaminant groundwater before
10 that is discharged to waters of the state that
11 would need to go through the NPDES permitting
12 process and often that happens much later and if a
13 closure plan has already been approved and then
14 there is -- that comes up for proposal through the
15 NPDES permitting process and it is denied, that
16 ends up being a problem at the front end of this
17 potential investment that they made into this
18 corrective action plan or closure plan.

19 So we would like to see if there
20 is -- as part of the corrective action plan or
21 closure plan, if there are any -- going to be any
22 proposed discharges, you know, three years down
23 the road once the plan is already in place we
24 would like for that to be considered upfront and

1 approved upfront so that it doesn't become a
2 problem later on.

3 HEARING OFFICER FOX: Ms. Franzetti,
4 you had a question?

5 MS. FRANZETTI: The language that is
6 proposed here about the antidegradation
7 demonstration, is it the intention to eliminate
8 any of the exceptions to the requirement of an
9 antidegradation demonstration that are contained
10 in 302.105 of the regs?

11 MS. BARKLEY: I would say what we
12 are seeking is that antideg be applied as it is in
13 302.105(f)(3) although I would say that we do have
14 concern with a lack of a definition of temporary
15 under the language of the antideg regulation and
16 I'll give a specific example. The dewatering of
17 the ash ponds right now, I'm not aware of that
18 actually going through the antideg process and we
19 have concern that ponds as they're dewatered that
20 that water is -- could be concentrated with
21 dissolved constituents and that that would be an
22 increased loading that should be considered under
23 the antideg to the receiving waters.

24 MS. FRANZETTI: So what you're

1 saying is in the event that the Agency would
2 interpret the exception to an antideg
3 demonstration requirement for a temporary
4 discharge to apply to a dewatering of an ash pond,
5 you disagree?

6 MS. BARKLEY: Yes, we do disagree
7 that -- with that being a temporary discharge
8 although that is not brought into this rulemaking
9 specifically.

10 MS. FRANZETTI: That's where you
11 threw me when you add that last part. I'm just
12 trying to understand whether this is simply
13 intended as a cross reference to the
14 antidegradation regulations taken as a whole or
15 are you trying to make the applicability of
16 antidegradation demonstrations broader than it is
17 under the existing regulation? Does that make
18 sense?

19 MS. BARKLEY: I think it is a direct
20 cross reference to the antideg rule. We want to
21 see this used in this process at the front end
22 instead of being used after the corrective action
23 plan, closure plan has been approved and the
24 antideg will come into play. It's just when and

1 where. I just wanted to make that point about the
2 dewatering of the coal ash pits because that is a
3 point that the environmental groups feel like the
4 dewatering of these ash ponds should come under
5 antidegradation regulations, should not meet that
6 temporary exemption.

7 MS. FRANZETTI: One last question.
8 You are not asserting that owners or operators of
9 ash ponds have actually started discharging as
10 part of a closure plan or corrective action plan
11 from a point source?

12 MS. BARKLEY: Are you asking me if I
13 am asserting?

14 MS. FRANZETTI: Let me start again.
15 With regard to your testimony about wanting
16 antideg upfront and not a few years down the road,
17 do you know of any instances where the Agency has
18 allowed a discharge that meets the definition of a
19 point source needing an NPDES permit to occur
20 before it's been permitted under the NPDES permit
21 program?

22 MS. BARKLEY: So the question is am
23 I aware of dewatering of an ash pit without
24 approval through the NPDES process?

1 MS. FRANZETTI: I'm sorry. Let me
2 try to explain. I'm having trouble understanding
3 your concern about the antidegradation issue.
4 Even if a closure plan may get approved by the
5 Agency because perchance that is not going through
6 the NPDES permit -- permitting group at the
7 Agency, that closure plan is approved for
8 corrective -- for the unit, but isn't it true that
9 that closure plan to the extent it calls for a
10 discharge to a surface water has to get an NPDES
11 permit and hence if antideg is applicable an
12 antidegradation demonstration will be required
13 before there is any actual discharge?

14 MS. BARKLEY: That's correct.
15 Before there is discharge, but not before there
16 are investments made in that closure plan. An
17 example is Hutsonville where part of the site
18 specific ruling Hutsonville's proposal of pumping
19 to the back of the contamination plume without --
20 and so then during that proceeding there wasn't
21 any surface water that was named at that time that
22 would be receiving that large amount of pumped
23 contaminated waste water, but we all know that has
24 to go somewhere and what ended up happening was

1 years later the NPDES permit was sought for
2 increased discharges of that contaminated water
3 into the Wabash River.

4 We would like to see that
5 consideration of discharge to surface water
6 considered at the front end so if there are
7 problems, say there is a drinking water supply
8 that may be impacted by contaminated water that
9 that is considered under antideg before there is
10 investments into groundwater trenches being built,
11 pumping equipment, other permits. It is -- and
12 also another part of antideg is that you consider
13 alternatives to that increased pollutant -- newer
14 increased pollutant loading and if you've already
15 got the approved -- the closure plan approved that
16 really in any sort of meaningful spirit -- spirit
17 of antidegradation it negates that alternatives
18 analysis. Why would you three years later go
19 through an alternatives analysis if the closure
20 plan has already been approved for one specific
21 plan?

22 MS. FRANZETTI: Because if antideg
23 does apply, the regulation says you do have to
24 consider alternatives.

1 MS. BARKLEY: It is true, but it's a
2 lot more meaningful for everybody involved if that
3 is at the front end when the closure plan is being
4 decided upon.

5 MS. FRANZETTI: I think I
6 understand. It just strikes me as that is really
7 the risk of the owner or operator and does not
8 really have any impact on the environment because
9 that demonstration, if it is triggered, will need
10 to be done before there is any discharge.

11 HEARING OFFICER FOX: Did you want
12 to wrap up with a question, Ms. Franzetti?

13 MS. FRANZETTI: Do you agree?

14 MS. BARKLEY: I just don't see any
15 reason why you wouldn't do the alternatives
16 analysis and the antidegradation consideration at
17 the same time you're coming up with your closure
18 plan. It is more efficient, more effective for
19 all of the short and long-term considerations.

20 MS. FRANZETTI: Okay.

21 HEARING OFFICER FOX: Anything else,
22 Ms. Franzetti?

23 MS. FRANZETTI: No.

24 HEARING OFFICER FOX: Ms. Olson, I

1 don't mean to overlook you, but I think I had seen
2 Mr. Rieser's hand first.

3 MR. RIESER: I have a question on
4 the same thing, but then I also have a point of
5 order, which is sort of how we're going to
6 approach this. My understanding is we're sort of
7 holding the questions on the proposal itself so
8 that we make the best use of Dr. Soderberg's time
9 and I know that there are a number of questions
10 that the Agency and I and the Board have for Dr.
11 Soderberg. So I can ask it now or I can hold it
12 until the questions of Dr. Soderberg are done. So
13 I don't really know how you want to approach this.

14 HEARING OFFICER FOX: Let me respond
15 to that maybe this way, Mr. Rieser. Ms. Franzetti
16 has indicated that we've wrapped up the 43
17 questions I believe that she had submitted and we
18 are just dealing with a couple of cleanup
19 questions so to speak. My intention was to take a
20 break shortly. I think we were really wrapping up
21 with the follow-up questions based on
22 Ms. Franzetti's questions and then resume and turn
23 to the pre-filed questions by the Agency so that
24 we can get underway with those as soon as possible

1 after a short break of 10 or 15 minutes, does that
2 eliminate your predicament a little better?

3 MS. OLSON: I have a question which
4 may help resolve this. Are the parties going to
5 be given an opportunity to ask the witness -- the
6 witnesses other than Dr. Soderberg questions about
7 the proposal in considering that it was filed
8 yesterday or two days ago, there is nothing
9 pre-filed so it would all just be new stuff?

10 HEARING OFFICER FOX: Ms. Olson, I'm
11 not sure I understand your question so I will
12 respond this way. Certainly there have been
13 questions both yesterday and today on the basis of
14 that so in saying that I'm probably revealing that
15 I'm not understanding exactly what you're asking.

16 MS. OLSON: Sure. I went through
17 this and I have questions on the changes and they
18 may or may not have come up in response to the
19 questions that were raised while we went through
20 the pre-filed questions. So my question is are we
21 going to be -- and I think this is Mr. Rieser's
22 question, too.

23 Are we going to be given an
24 opportunity after we finish with Mr. Soderberg,

1 after we finish the pre-filed questions for
2 Ms. Barkley and after we finish the Agency's
3 response, will there be an opportunity for any
4 participant to question the environmental groups
5 on the proposal itself? So if there is something
6 that was not addressed otherwise, can we then
7 question -- ask questions of the panel?

8 HEARING OFFICER FOX: Let's adjourn
9 or -- not adjourn. Let's recess for a break
10 quickly and I -- first of all, into the pre-filed
11 questions you have had and certainly it would be
12 in order to include follow ups of other questions
13 pertaining to the proposal that they had filed
14 earlier this week and while I don't mean to sound
15 glib let's see where we are at the conclusion of
16 the 60 plus questions you have filed and we can
17 see exactly what the participants may wish to
18 propose in terms of if you'd like post-hearing
19 comments.

20 MR. RIESER: It does create
21 something of a problem because I certainly want to
22 respect the time of the people who pre-filed
23 questions and I don't want to take up that time.
24 I don't think there is any questions -- to sort of

1 get to the nub of this. I don't think there is
2 any question that we're going to need more time
3 and an additional hearing. If we know that is
4 going to happen, then we might save these more
5 generic proposal questions for later. If we
6 don't, then we're going to be competing with each
7 other for want of a better term or competing for
8 your attention.

9 So we can ask those questions
10 now if we're not going to have -- if we know we're
11 not going to have a chance to ask them and I
12 thought the discussion yesterday was fine. We'll
13 talk to Dr. Soderberg because he is being paid to
14 be here and we want to respect that. So people
15 should get done with the questions, but there
16 is -- based on our current pace, there is no way
17 we're going to go through 60 questions by the end
18 of today and I think it would be useful to know in
19 short order whether another hearing will be
20 scheduled.

21 HEARING OFFICER FOX: Let's do this.
22 Since I think we have reached the end of
23 Ms. Franzetti's questions and I don't sense there
24 were some immediate follow ups based on hers --

1 let's go ahead having been back for nearly two
2 hours now take about a 15-minute break and that
3 will give a chance for the Board to perhaps
4 informally consider what it may like to do in
5 response to the concerns that you've raised.

6 MR. RIESER: Thank you very much.

7 MS. FRANZETTI: And let's not
8 forget. There are questions -- weren't there
9 questions of Traci Barkley?

10 MS. OLSON: Yes, and those questions
11 are directed to the Agency.

12 HEARING OFFICER FOX: Since we're
13 not on the record -- I'm sorry. My mistake,
14 Steven. We are still on the record. I want to
15 offer this clarification. There were questions
16 for the environmental communities, the
17 environmental group's witnesses, two of which were
18 specifically directed to Ms. Barkley, one of which
19 I believe has fully been addressed by the
20 submission of the documents at the top of the
21 hearing yesterday.

22 So we will not have extensive
23 questions based on the single one that was not
24 addressed by those documents. I also want to note

1 for the record that the questions posed by the
2 Board to the Agency in specific response to its
3 post-hearing comments did generate, and we
4 appreciate the Agency's time and effort in
5 preparing it, written responses that were admitted
6 as Hearing Exhibit No. 32.

7 We have had a chance to look
8 over those. They are largely satisfactory to the
9 Board. We will have a very, very limited number
10 of follow ups so that once we turn to that issue
11 after dealing with the Agency's pre-filed
12 questions we will not require a great deal of the
13 Agency's time or the witness's time in addressing
14 those.

15 So if that is helpful at all in
16 knowing, we will certainly share that reaction
17 with you. Let's, however, take a break. It is
18 now 1:30. Let's resume at 1:45 right here, of
19 course.

20 (Whereupon, a break was taken
21 after which the following
22 proceedings were had.)

23 HEARING OFFICER FOX: Thank you very
24 much for returning from the break. We had some

1 questions just before we did recess briefly about
2 our road map forward and in discussing procedural
3 matters with the Board members and staff who are
4 present here. What the Board would like to
5 propose simply is this. We're taking into account
6 a number of factors here, one of which is that the
7 Agency hopefully had filed pre-filed questions, of
8 course, pursuant to the Hearing Officer order of
9 which there are a number, which we can begin to go
10 through.

11 The Board still does have some
12 issues that it does desire to take up although I
13 half tried to assure you that we do not expect a
14 lengthy series of questions and responses and we
15 will, of course, at a minimum have a couple of
16 housekeeping issues to take care of. There is a
17 lot ahead of us and it seems quite likely, if not
18 virtually certain at this point, that it will take
19 a marathon of a day today to wrap that up.

20 Secondly, we do have some
21 witnesses, some sworn witnesses here today.
22 Ms. Barkley and, of course, Dr. Soderberg who are
23 not local. I don't mean to overlook the fact that
24 the Agency and its staff are not local either, but

1 I am certain that they would desire to wrap up
2 testimony as they can. That is the issue,
3 Mr. Rieser, that you had pointed out that their
4 availability perhaps poses some more difficulty
5 than other witnesses today. There also have been
6 some questions -- Ms. Olson, you, not only you,
7 have raised about the filing on Tuesday on the
8 suggested amendments to the proposal and I think
9 it's fair to say that you had wished some further
10 opportunity to pose questions about that.

11 So what the Board would like to
12 propose is that we schedule a third hearing so
13 that we can first resume if we need to with the
14 Agency's pre-filed questions and any follow ups
15 that may remain at the end of business today, say,
16 4:00, 4:30 or 5:00 p.m. That would give us a
17 significant amount of time still since it is not
18 quite 2:00 p.m. to focus on questions
19 specifically, not exclusively, but at least
20 specifically for Ms. Barkley and Dr. Soderberg so
21 that we can capitalize as well as possible on
22 their presence here today. Ms. Franzetti, you
23 have just arrived at sort of the culmination of
24 the process --

1 MS. FRANZETTI: That's fine. Keep
2 going.

3 HEARING OFFICER FOX: -- our thought
4 process. We're proposing the scheduling of a
5 third hearing to address some of the procedural
6 questions that arose before the break began. I am
7 certain that the Agency and other parties,
8 participants, would like to move forward with this
9 about as quickly as reasonably possible.

10 It would be the Board's strong
11 preference to have a hearing begin here in the
12 Thompson Center on Wednesday, June 18th which is
13 five weeks from yesterday. That is five weeks
14 from now and continue if necessary on Thursday,
15 June 19th. I realize that you have not had a
16 chance to consider that, but do any of the
17 participants here have a strenuous objection to
18 proceeding on that date? Those two dates -- I
19 apologize -- as suggested.

20 MS. OLSON: Can we take a minute?

21 HEARING OFFICER FOX: Sure. That's
22 absolutely fine.

23 MS. FRANZETTI: That's the 18th and
24 19th, right?

1 HEARING OFFICER FOX: Correct. That
2 should be Wednesday, June 18th and Thursday the
3 19th, am I correct on those line ups?

4 MS. FRANZETTI: You are.

5 HEARING OFFICER FOX: For once.

6 MS. FRANZETTI: No, I expect nothing
7 less.

8 MS. OLSON: It appears those dates
9 will work for the Agency.

10 HEARING OFFICER FOX: Very good.
11 Ms. Franzetti, turning to you. Would those
12 dates --

13 MS. FRANZETTI: Fine with me.

14 HEARING OFFICER FOX: Ms.
15 Antonioli, do you have any issues with those
16 dates?

17 MS. ANTONIOLLI: No.

18 HEARING OFFICER FOX: Ms. Bugel,
19 would you care to address that?

20 MS. BUGEL: For the attorneys and
21 some of the attorneys here we can do it. If it
22 required calling Dr. Soderberg back, he is not
23 available to come back on those dates. He is out
24 of the country.

1 HEARING OFFICER FOX: Let's do this.
2 I am going to rely on Mr. Rieser's suggestion I
3 think that we can concentrate specifically today
4 and I would urge all of the questioners to
5 concentrate specifically on those technical and
6 engineering questions for which Dr. Soderberg
7 would be the key witness, the obvious witness, so
8 to the extent we reach an end of the day we really
9 have exhausted the questions that are suitable for
10 him to answer and then to rely on Mr. Armstrong or
11 any of the other environmental group's witnesses
12 on June 18th or 19th.

13 I understand your concern, but I
14 think if we can -- you know, engineer questions to
15 take advantage of your presence here to the best
16 extent possible we can use his time well and have
17 a hearing in June that is productive as well.
18 Does that make sense?

19 MS. BUGEL: Yes.

20 HEARING OFFICER FOX: Very good. Do
21 I hear any objection to the dates of June 18th and
22 19th? Mr. Rieser, I don't believe I asked you if
23 that worked.

24 MR. RIESER: Other than depriving me

1 of some free golf, I think those dates will work.

2 HEARING OFFICER FOX: It sounds like
3 you recognize that that is not a legal defense to
4 scheduling.

5 MR. RIESER: I'm perfectly aware of
6 it. It's not a problem.

7 MS. ANTONIOLLI: I just want to
8 check with Mr. King before we make a final
9 decision, but I don't anticipate there being --

10 HEARING OFFICER FOX: Very good.
11 That will require me to make sure that we have a
12 location. I don't expect any significant issues
13 with that, but I will place that in an Hearing
14 Officer order. What I would also ask is that we
15 set a deadline seven days before that on
16 Wednesday, June 11th so that particularly on the
17 basis of the proposed changes we have pre-filed
18 questions so that that hearing -- that hearing
19 date can move as expeditiously and efficiently as
20 possible. Does anyone object to pre-filing
21 questions seven days in advance of that? Neither
22 seeing nor hearing any, I will recollect that and
23 ask that the mailbox rule not apply so we do have
24 those questions in hand seven days before and we

1 can prepare for hearing on that basis.

2 Any questions about what I've
3 just run through our any points anyone wishes to
4 raise before we verify that we have exhausted
5 Ms. Franzetti's questions and move onto the
6 Agency?

7 MS. GLOSSER: Did you say what time
8 you'll start?

9 HEARING OFFICER FOX: What I would
10 propose is we begin on Wednesday, June 18th at
11 10:00 a.m. and then, if necessary, continue on
12 Thursday beginning at 9:00 a.m. Effectively as we
13 have here today -- here yesterday and today.

14 MS. DEXTER: Forgive me if you said
15 this already. What city are you --

16 HEARING OFFICER FOX: It would be in
17 Chicago in this building and I'm sorry if I wasn't
18 clear. I've been asked quite reasonably to begin
19 on Wednesday, June 18th at 11:00 since there may
20 be some travel by various participants. That
21 additional hour may give some valuable additional
22 time for that.

23 MS. OLSON: We'd most likely come up
24 the night before. The Agency appreciates the

1 gesture, but we will be ready. We could be ready
2 earlier, if necessary.

3 MR. O'LEARY: You'll have a heck of
4 a time getting rooms, getting lodging. Seriously.

5 MS. OLSON: We'll have to find
6 something because Thursday --

7 HEARING OFFICER FOX: Let's plan on
8 11:00 a.m. and I will reflect that in the Hearing
9 Officer order that is scheduled to hearing that
10 day. I appreciate your concession on that,
11 Ms. Olson, but I'm hopeful we can wrap up in a
12 single day on Wednesday, June 18th. Continuation
13 would be only as necessary, of course. Did I
14 exhaust all of the questions about that scheduling
15 and those procedures? Very well.

16 Ms. Franzetti, I'll return to
17 you just for a moment. Do you have any additional
18 questions based on the pre-filed questions that
19 you had submitted to the Board?

20 MS. FRANZETTI: No.

21 HEARING OFFICER FOX: Truly wrapped
22 up. Are there any follow ups?

23 MS. BUGEL: Yes.

24 HEARING OFFICER FOX: Ms. Bugel, I

1 see your hand.

2 MS. BUGEL: I have just four follow
3 ups based on Ms. Franzetti's questions.

4 HEARING OFFICER FOX: Please go
5 ahead.

6 MS. BUGEL: Dr. Soderberg, there has
7 been testimony earlier about eight data points in
8 your recommendation, do you recall that?

9 MR. SODERBERG: Yes.

10 MS. BUGEL: Can you explain the
11 options for obtaining eight data points
12 specifically that could be done in less than two
13 years timeframe?

14 MR. SODERBERG: Well, as I mentioned
15 in my pre-filed testimony and we discussed
16 previously a couple of times, you can have more
17 frequent monitoring to establish the eight data
18 points. There is a limitation to that. You don't
19 want to have too frequent of monitoring as
20 described in the unified guidance. Some
21 statistical tests could also be able to make use
22 of multiple monitoring well data. So you could,
23 again, generate eight data points from multiple
24 monitoring wells in less than two years.

1 MS. BUGEL: Thank you. And we --
2 you also mentioned the option of using a trench or
3 a slurry wall as corrective action, do you
4 remember that?

5 MR. SODERBERG: I don't believe I
6 mentioned trench, but, yeah, it's in there, yes.

7 MS. BUGEL: Okay. Would those be
8 suitable for long-term corrective action?

9 MR. SODERBERG: Well, provided
10 financial assurance of this corrective action
11 could be carried forward indefinitely, it does
12 stop the migration of groundwater in that
13 direction for the transport of contaminants in the
14 case of slurry wall or reactive barrier, but
15 that's not the only source of risk in terms of
16 long-term control. Obviously there is still
17 potential risk associated with the impoundment
18 if -- in terms of berm failure and that sort of
19 thing.

20 MS. BUGEL: So trenches and slurry
21 walls do not address structural integrity issues?

22 MR. SODERBERG: Correct.

23 MS. BUGEL: And we also -- you also
24 testified on -- you provided an opinion stating

1 that you were not supportive of a five year
2 monitoring period for reduced monitoring. Can you
3 explain your concerns with monitoring once every
4 five years?

5 MR. SODERBERG: One of my main
6 concerns would be placing a large amount of
7 statistical weight on a single data point that
8 would need to be confirmed.

9 MS. BUGEL: And this is my one last
10 question. We also -- you also testified as to the
11 rules exclusion -- I'm sorry. IEPA's proposed
12 rules exclusion of nonoperating units or units
13 that are not having exceedances from the rule.
14 What is -- are there -- besides monitoring, what
15 indicators are there of possible contamination
16 from impoundments?

17 MR. SODERBERG: So you need to do
18 some kind of monitoring. If there is no
19 groundwater monitoring of a specific unit, you may
20 have data potentially about from seepage or from
21 maybe toe drains that you can get some indication
22 of what the concentration of the contaminants in
23 the leachate is, but that is an indirect measure
24 of maybe what is seeping into the groundwater.

1 MS. BUGEL: And when you said toe
2 drains and seepage, were those the two examples
3 you made?

4 MR. SODERBERG: Yes.

5 MS. BUGEL: Can you explain why
6 these are not adequate indicators of potential
7 contamination?

8 MR. SODERBERG: It depends on where
9 the seeps or toe drains are with respect to the
10 leachate. They may or may not be a good
11 representation of what is infiltrating vertically
12 into the groundwater. For example, you could have
13 the inclusion of precipitation in the upper
14 portions of the saturated zone within the
15 impoundment that would be potentially more
16 representative in the seeps of the toe drains
17 that, you know, may or may not be more dilute than
18 what is migrating vertically.

19 MS. BUGEL: That's all the follow up
20 I have right now.

21 HEARING OFFICER FOX: Very good.
22 Thank you, Ms. Bugel. Any other follow up?
23 Mr. Jennings?

24 MR. JENNINGS: We have one follow-up

1 question on one of those points. Dr. Soderberg,
2 can a slurry wall be a long-term corrective
3 action? So, in other words, would there be some
4 sort of ongoing maintenance requirement for a
5 slurry wall?

6 MR. SODERBERG: I would have to go
7 back to the guidance documents for that, but I
8 believe there could be some maintenance of that,
9 yes.

10 MR. JENNINGS: What kind of
11 maintenance?

12 MR. SODERBERG: I haven't done that
13 myself. I would have to go back to some of the
14 guidance documents to check.

15 MR. JENNINGS: Do you know whether
16 there is any kind of extended maintenance for a
17 slurry wall?

18 MR. SODERBERG: Not off the top of
19 my head, no.

20 MR. JENNINGS: Can you explain what
21 a slurry wall is?

22 MR. SODERBERG: Well, I was
23 referring in my testimony to reactive barriers.
24 That's what -- these are permeable barriers that

1 are -- that are used and react with the
2 contaminants that are flowing through them. The
3 slurry wall I haven't had direct experience with
4 so I would refrain from defining that.

5 MR. JENNINGS: In one of your
6 responses earlier, you mentioned seeps. In
7 mentioning seeping, do you mean seeping from dams
8 or seeping from river banks?

9 MR. SODERBERG: I'm envisioning
10 potentially a seep from an embankment that may be
11 collected in a ditch. That could be an earth and
12 berm for the embankment or for the impoundment is
13 what I envision.

14 MR. JENNINGS: We have nothing
15 further.

16 HEARING OFFICER FOX: Thank you,
17 Mr. Jennings. Any other follow ups before we turn
18 to the Agency for its pre-filed questions?
19 Neither seeing nor hearing any, Ms. Olson, we are
20 in order for the Agency to presumably begin at
21 number one with its pre-filed questions. Of
22 course, Dr. Soderberg and Ms. Barkley and
23 Mr. Armstrong have been sworn are ready to go I'm
24 guessing. They are indicating that they are.

1 MS. OLSON: Thank you. Before we
2 get started, I just want to see if anyone has an
3 objection to both James Jennings and myself asking
4 questions. It would be along the lines if there
5 is a question one, I would handle that question
6 and all follow ups, but to a second question would
7 it be okay for the participants if Mr. Jennings
8 would then handle that question?

9 MS. BUGEL: Assuming it's not going
10 to be tag-teaming and confusing the witness, we're
11 good.

12 MS. OLSON: That is what I'm trying
13 to avoid, but then also divide some of the
14 questions. Thank you.

15 Mr. Soderberg, we've spent a lot
16 of time talking about your background. So I think
17 a lot of these questions in the first part of our
18 pre-filed questions have been addressed, but
19 briefly I want to ask some of these questions.
20 They've been phrased in terms of have you been the
21 project manager or lead worker, but I'd like to
22 broaden that to say any project you've worked on
23 if that's okay with you.

24 MR. SODERBERG: Okay.

1 MS. OLSON: So can you look at
2 question two. It says "Of the remediation
3 projects where you have been the project manager
4 or lead worker or been involved, how many included
5 inorganic chemicals as contaminants of concern?"

6 MR. SODERBERG: So I mentioned a
7 list of about 14 or 15 yesterday. These
8 industrial sites they all involve some aspect of
9 remediation and probably maybe of those 14 or 15
10 maybe eight or nine had organic -- inorganic
11 constituents of concern.

12 MS. OLSON: Was any treatment
13 applied to the groundwater to reduce the
14 concentrations of inorganic contaminants of
15 concern?

16 MR. SODERBERG: In the cases that
17 I -- where there was some treatment it was done
18 after the groundwater was pumped to the surface.
19 So yes.

20 MS. OLSON: And then the next
21 question is 2.3. Please describe the treatments
22 that were used to reduce the inorganics.

23 MR. SODERBERG: So there was some
24 coprecipitation. This was a radium -- to reduce

1 the radium concentration, coprecipitation. So you
2 add a chemical to precipitate radium.

3 MS. OLSON: Do you recall what
4 chemical was added?

5 MR. SODERBERG: I believe it was
6 barium chloride. And then that's one example.
7 There are other examples. With perchlorate, there
8 was attempts with bioremediation aboveground after
9 the perchlorate contaminant groundwater was pumped
10 to the surface and there was also ion exchange
11 that was attempted.

12 MS. OLSON: Was the treatment for
13 ion exchange successful?

14 MR. SODERBERG: Yes, I believe that
15 is was successful.

16 MS. OLSON: Moving onto question
17 three. Did any of the projects use groundwater
18 collection or any type of control -- any type of
19 control to mitigate the contaminants of concern?
20 And I believe you just answered yes to that.

21 MR. SODERBERG: Yes, pump and treat.

22 MS. OLSON: Looking at question 3.3.
23 Was the water disposed via a National Pollutant
24 Discharge Elimination System permit or by other

1 means?

2 MR. SODERBERG: Yes. By NPDES, yes.

3 MS. OLSON: Were there any other
4 methods of disposal?

5 MR. SODERBERG: Not that -- not that
6 I recall of the clean water.

7 MS. OLSON: Moving to question four.
8 Did the remediation projects that we've been
9 discussing meet the objectives for the inorganics,
10 the cleanup objectives for the inorganics?

11 MR. SODERBERG: I believe so. We
12 come in and leave projects at different stages.
13 So I haven't followed through on each of those
14 objectives, but I believe that the perchlorate an
15 example was -- it's ongoing. I believe it is --
16 it is successful. Other projects that have
17 involved inorganics have involved some soil and
18 sediment removal with respect to meeting cleanup
19 goals with what is left. Yes, those were met.

20 MS. OLSON: Looking at 5.1. I just
21 want to highlight the last part of that question,
22 which was can you tell us the time -- the amount
23 of time to complete the remediation for the two
24 projects that you mentioned previously?

1 MR. SODERBERG: Yes, the one that
2 was removal of sediment and sludge, that was
3 involving chromium and that was about six months
4 as I mentioned previously. The perchlorate was --
5 it is an ongoing project. It has probably been
6 about a decade.

7 MS. OLSON: Was there --

8 MS. BUGEL: Can I ask a follow up?

9 MS. OLSON: Sure.

10 MS. BUGEL: Did any of those
11 projects involve source control?

12 MR. SODERBERG: Yes. Well, let's
13 see here. The removal project removing soil and
14 sentiment was source controlled and I believe that
15 there is some attempt at source control with the
16 perchlorate project, but I'm not familiar with
17 that. It's complicated.

18 MS. BUGEL: Earlier in your
19 testimony you also mentioned a coprecipitation
20 project to reduce radium?

21 MR. SODERBERG: Yes, that was a
22 project we were commenting on. The treatment was
23 done back in the 1970's and it certainly did
24 reduce the concentration of radium.

1 MS. BUGEL: Was that a source
2 control project as well?

3 MR. SODERBERG: No.

4 MS. BUGEL: Okay. And do you know
5 how long the remediation work took on that
6 project?

7 MR. SODERBERG: That was ongoing as
8 part of meeting NPDES requirements, the addition
9 of that chemical.

10 MS. BUGEL: Okay.

11 HEARING OFFICER FOX: Any further
12 questions, Ms. Bugel?

13 MS. BUGEL: No, thank you. No
14 follow up.

15 MS. OLSON: Just a few. Is the
16 coprecipitation of radium done in the 1970's still
17 ongoing?

18 MR. SODERBERG: No.

19 MS. OLSON: When did it end?

20 MR. SODERBERG: I believe it ended
21 in 1982 or so.

22 MS. OLSON: You previously mentioned
23 a project where you were talking about the
24 remediation of soils?

1 MR. SODERBERG: Yes.

2 MS. OLSON: Did that project involve
3 groundwater cleanup as well?

4 MR. SODERBERG: There was a concern
5 about groundwater, but the concentrations were low
6 so it was determined just to be a source removal.

7 MS. OLSON: I'm ready to move onto
8 question six. I think there was some testimony on
9 this yesterday. Question six is asking about raw
10 coal. On page two of your testimony, you state
11 "It is also unclear whether storm water runoff
12 that comes in contact with raw coal is considered
13 as containing leachate."

14 Question 6.1 there. Are you
15 aware of any definition of coal combustion waste
16 that includes raw coal in the definition?

17 MR. SODERBERG: No. And as I stated
18 yesterday, I believe that the definition in the
19 proposed rule is clear. It does not include raw
20 coal in the definition and I would bring that up
21 because sort of for -- for discussion so that we
22 can talk about potentially additional constituents
23 of concern that may be not considered when you're
24 only talking about CCW.

1 MS. OLSON: Thank you. Moving onto
2 question seven. On page five of your testimony
3 you state "Under the proposed rules, it would take
4 four years of semiannual monitoring to generate
5 eight data points." Are you aware of any
6 electrical generating stations listed in Exhibit 5
7 of this proceeding that do not have existing
8 groundwater monitoring data?

9 MS. BUGEL: Can we please get
10 Exhibit 5 in front of the witness?

11 MS. OLSON: Sure.

12 MS. BUGEL: Thanks. Can you provide
13 us some guidance of where Exhibit 5 --

14 MS. OLSON: It's on page 141, I
15 believe. Exhibit 5 is a hearing exhibit and it
16 has Exhibit's A through P attached to it. I
17 believe it is in Exhibit C.

18 MR. SODERBERG: Okay.

19 MS. OLSON: I'm not sure of the
20 exact page. The page reference here, page 141 is
21 what is in reference to what was on the Board's
22 website.

23 HEARING OFFICER FOX: Just for the
24 sake of the record, Ms. Olson, am I correct that

1 Exhibit No. 5 consists of the pre-filed answers
2 that the Agency submitted in response to the
3 questions that were filed for the first hearing in
4 February, is that correct?

5 MS. OLSON: That's correct.

6 HEARING OFFICER FOX: Very good.
7 Thank you.

8 MR. SODERBERG: Okay. Can you give
9 me a little guidance on the top of the page maybe
10 for that page 141?

11 MS. OLSON: Yeah. Let me see --

12 MR. SODERBERG: I'm seeing things
13 like page five of ten in that Appendix C --
14 Exhibit C.

15 MS. OLSON: Do you see Exhibit C?

16 MR. SODERBERG: Yes.

17 MS. OLSON: It is called Illinois
18 EPA's Action Impoundment Strategy Progress Reports
19 October 2011 and then if you just flip to page two
20 there is a table.

21 MR. SODERBERG: Okay. I haven't
22 done any investigation myself on this list in
23 terms of what monitoring data is available at each
24 of these sites, but I would just reference the

1 IEPA or the Agency's responses provided yesterday.
2 What exhibit is that?

3 MR. ARMSTRONG: That is the Agency's
4 responses.

5 HEARING OFFICER FOX: If it was the
6 Agency's responses, written responses to the
7 Board's questions for this hearing, that is,
8 Dr. Soderberg, Exhibit 32.

9 MR. SODERBERG: Yes, Exhibit 32 page
10 three there is a listing of four impoundments that
11 are not receiving coal combustion waste. One is
12 at Hutsonville, the southern Illinois co-op
13 facility. There are two and one at Crawford
14 Generating Station and I'm just checking to see if
15 they're on this list here that you referenced on
16 page 141.

17 MS. BUGEL: Traci Barkley is also
18 prepared to answer this line of questions if you
19 want to direct these questions at her.

20 MS. OLSON: Would you like me to
21 save them for later?

22 MS. BUGEL: Yeah. Actually, that
23 would be fantastic.

24 MS. OLSON: I'm ready to move on. I

1 want to jump to question 8.2. Is it possible for
2 the owner or operator of a regulated unit to
3 combine data collected after the effective date of
4 this part with groundwater quality data that was
5 collected prior to the effective date of this part
6 to be in compliance with Section's 841.130 and
7 841.220?

8 MR. SODERBERG: Let me just look at
9 those sections.

10 MS. OLSON: 841.130, and 841.220 and
11 I think this is of the Agency's proposal.

12 MR. SODERBERG: Yes, I believe it is
13 possible to combine the existing data.

14 MS. OLSON: Thank you. Question
15 nine. On page five of your testimony, you state
16 "The rule should also specify what to do when very
17 few data points are available to characterize
18 site-specific background concentrations and/or the
19 potentially impacted groundwater concentrations."

20 Question 9.1, do statistical
21 methods determine how non-detects should be
22 considered for the application of that statistical
23 method?

24 A. Yes.

1 MS. OLSON: Question 9.2. Would
2 inclusion of a requirement to treat non-detects in
3 a specific manner limit the statistical methods
4 allowed to be considered by the owner or operator?

5 MR. SODERBERG: I mean, I believe
6 that the unified guidance provides provisions for
7 dealing with non-detects in a way that treatment
8 can apply to many different statistical tests. My
9 testimony I wasn't speaking specifically about the
10 presence of non-detects, but I believe that it is
11 possible to deal with non-detects in the scope of
12 the unified guidance.

13 MS. OLSON: Question 10. Would a
14 statewide background concentration that was
15 developed from community water supply wells all
16 across the state, from aquifers of various depths
17 and compositions provide a better representation
18 of site specific background data than monitoring
19 wells installed at a site to monitor groundwater
20 within specific geologic units that exist at a
21 site?

22 MR. SODERBERG: No. If possible,
23 the site specific background would be preferred.

24 MS. OLSON: Question 11. Does the

1 selection of appropriate statistical methods
2 depend on a number of site specific circumstances,
3 such as the number of non-detects for a particular
4 chemical, the presence or absence of other
5 regulated and/or unregulated sources, monitoring
6 purpose (e.g. compliance versus assessment,
7 corrective action or closure)?

8 MR. SODERBERG: Yes.

9 MS. OLSON: Question 12. Do you
10 believe this proposed part should be a rule of
11 general applicability, which applies to regulated
12 units at sites with variable hydro-geologic
13 conditions, variable site geometries, variable
14 modes of operation and are at various stages in
15 their operational life cycle?

16 MR. SODERBERG: Yes.

17 MS. OLSON: Question 12.1. Do you
18 think that providing a professional with the
19 latitude to use new approaches and scientific
20 methods which may be developed is more effective
21 than a prescriptive approach?

22 MR. SODERBERG: Yes, I think that's
23 a good, general characterization and I would couch
24 that, you know, within the context of the

1 guidance, statistical guidance, that is
2 incorporated into the rule.

3 MS. OLSON: Question 13. On page
4 six of your testimony, you state "If two different
5 statistical procedures are used, however, it could
6 lead to a conflict. The rule therefore should
7 provide what will happen when two viable
8 statistical procedures disagree." Later in the
9 same paragraph you state "Alternatively, the Board
10 could require that several statistical tests be
11 performed." Please explain further why the Board
12 should add additional requirements to proposed
13 Part 841 that may create a conflict that you have
14 warned against.

15 MR. SODERBERG: So I would say it a
16 different way. I would say that you in making
17 that comparison through multiple tests are
18 reviewing a conflict that exists within the data.
19 You're not generating a conflict. So it is an
20 important piece of information to consider when
21 you're looking at the result of the statistical
22 test.

23 MS. OLSON: Question 14. If an
24 up-gradient well has a higher concentration for

1 its particular contaminants than a down-gradient
2 well, is it true that one possible explanation is
3 that some unidentified up-gradient source exists?

4 MR. SODERBERG: Yes. And that
5 obviously requires the clear understanding of what
6 is up-gradient and down-gradient for your
7 question, but if that is clear then, yes, that is
8 one explanation.

9 MS. OLSON: Question 15. On page
10 six of your testimony, you state "Fifth, under
11 Section 841.215, the Agency excludes radium-226
12 and radium-228 from the list of chemical
13 constituents to be monitored. These radioactive
14 constituents are not present in very high
15 concentrations in CCW leachate, and their
16 transport via groundwater can be retarded relative
17 to constituents such as boron. However, in sample
18 results presented by the Agency as part of these
19 hearings, concentrations were reported that
20 exceeded the federal MCL for drinking water of
21 5 pCi/L (for the combined Ra-226 + Ra-228) in two
22 locations.

23 Question 15.1. Is monitoring
24 well AP-5 up-gradient or down-gradient from the

1 ash impoundment?

2 MR. SODERBERG: I don't know.

3 MS. OLSON: Question 15.2. Is the
4 monitoring well AP-2 up-gradient or down-gradient
5 from the ash impoundment?

6 MR. SODERBERG: I don't know.

7 MS. OLSON: Question 16. On page
8 seven of your testimony, you state "However, the
9 prohibition, "reduced monitoring is prohibited
10 when the unit or units associated with monitoring
11 well does not have a liner," assumes that a given
12 monitoring well can be associated with a specific
13 unit." Later in the same paragraph you state "A
14 better provision would be to prohibit a reduction
15 in monitoring for any facility with unlined
16 impoundments that are subject to the proposed
17 rule." So the next set of questions asks you what
18 the rule says and feel free to paraphrase. You
19 don't have to read, but please tell us what
20 proposed Section 841.230(c) whether that section
21 prohibits reduced monitoring when all units
22 associated with a monitoring well have not been
23 lined and to be clear this is the Agency's
24 proposed Section 841.230(c).

1 MR. SODERBERG: Yes, I believe that
2 is -- yes.

3 MS. OLSON: Does proposed Section
4 841.230(d) of the Agency's proposal require the
5 Agency to approve pursuant to Subpart E a
6 monitoring schedule that has been reduced?

7 MR. SODERBERG: Yes.

8 MS. OLSON: Does Subpart E give the
9 Agency the authority to deny any proposed plan
10 modification that does not contain adequate data
11 supporting the proposed modification?

12 MR. SODERBERG: Yes.

13 MS. OLSON: Question 16.4. Does
14 proposed Section 841.230(c) require a chemical
15 constituent to be below the limit of detection for
16 at least five years before the monitoring
17 frequency may be reduced?

18 MR. SODERBERG: Yes.

19 MS. OLSON: 16.5. Does proposed
20 Section 841.230(c) require monitoring at least
21 every five years of any chemical constituent for
22 which monitoring has been reduced?

23 MR. SODERBERG: Yes.

24 MS. OLSON: Question 17. On page

1 seven of your testimony, you state "First, if a
2 constituent is only monitored once every five
3 years in an up-gradient well, and it is
4 subsequently detected in a down-gradient well,
5 alternative causes would be much more difficult to
6 demonstrate and evaluate compared to having
7 semi-annual monitoring."

8 Question 17.1. Under the
9 proposed rules, who do you believe has the burden
10 of proof to make an alternative cause
11 demonstration?

12 MR. SODERBERG: It is my opinion
13 that the owner or operator has that burden.

14 MS. OLSON: Question 17.2. Under
15 the proposed rules, what happens when an
16 alternative cause demonstration cannot be made
17 because of a lack of supporting evidence?

18 MR. SODERBERG: I'd like to just
19 read that section. I'm at 841.305(c). An owner
20 or operator who receives a written response of
21 non-conformance pursuant to Subsection D shall,
22 one, submit a corrective action plan in accordance
23 with the requirements of the subpart or a closure
24 plan in accordance with the requirements of Part D

1 of this part within 90 days of the date the
2 Agency's nonconcurrence was mailed to the owner or
3 operator or, two, appeal the Agency's decision of
4 nonconcurrence to the Board within 35 days of the
5 day the Agency's nonconcurrence was mailed to the
6 owner or operator.

7 MR. JENNINGS: Dr. Soderberg,
8 question 18. On page seven of your testimony, you
9 state "Second, late detection of contamination
10 will make remediation more difficult and costly,
11 and will unnecessarily threaten human health and
12 the environment. Third, monitoring once every
13 five years would place a large amount of
14 statistical weight on one individual sample.
15 Individual samples can be affected by seasonal
16 variations, sampling errors, and analytical
17 problems such as matrix interference. Fourth, it
18 is likely that CCW leachate plumes will have
19 multiple concentration fronts based on variability
20 in infiltration due to the use of different
21 impoundments at different times, precipitation
22 pulses, and changes to the type of waste deposited
23 in a given impoundment. Fifth, chemical
24 constituents in CCW leachate travel at different

1 rates in the subsurface due to conditions in the
2 groundwater (pH, Redox potential) and the type of
3 soil or aquifer material to which they are
4 exposed. Thus, the first rise in concentration
5 and the peak concentration will be seen at
6 different times for different chemical
7 constituents.

8 MR. SODERBERG: Yes.

9 MR. JENNINGS: Does proposed Section
10 841.235(e) require any detection of a chemical
11 constituent for which monitoring has been reduced
12 be considered statistically significant and
13 require investigation pursuant to proposed Section
14 841.235(c)?

15 MR. SODERBERG: So reading that
16 statement from 841.235(e) the last sentence "If
17 the chemical constituents exceed the numerical
18 groundwater standards in 35 Ill. Adm. Code 320
19 Subpart D, then the owner or operator shall
20 monitor the chemical constituents pursuant to
21 Section 841.230(b) (1). So I would just say that,
22 yes, it speaks for itself.

23 MR. JENNINGS: So 235 would just be
24 a typo?

1 MR. SODERBERG: Yeah.

2 MS. OLSON: Question 20. Do you
3 believe it likely that the concentration of any of
4 the chemical constituents required to be monitored
5 pursuant to this proposed part would increase from
6 less than detection to a concentration in excess
7 of a numerical groundwater standard, at a given
8 monitoring point, in less than five years?

9 MR. SODERBERG: The term likely is
10 subjective. I believe that it is possible. It is
11 probably not likely. It would have to involve the
12 five years of non-detects having some elevated
13 method of detection limits relative to what -- I
14 can envision a scenario in which there was some
15 elevated method detection limits during those five
16 years. Maybe there was a change in analytical
17 method being used and so a detection after -- not
18 monitoring for five years is possible, not whether
19 it is above the numerical groundwater standard is
20 even more unlikely. That method detection limit
21 problem is the matrix interference issue as I
22 mentioned previously in my testimony would have to
23 have been significant so it's an unlikely
24 scenario.

1 MS. OLSON: Does your opinion change
2 if the unit is lined?

3 MR. SODERBERG: That would depend on
4 the type of liner, but, yes, the liner would tend
5 to slow down the movement of leachate into the
6 subsurface so it would potentially make that
7 scenario even more unlikely.

8 MS. OLSON: Thank you.

9 HEARING OFFICER FOX: Ms. Olson, I
10 see Mr. Rieser's hand. I'll turn to him for a
11 quick question.

12 MR. RIESER: Have you reviewed --
13 have you reviewed groundwater results from a
14 number of -- I'm just using number in a generic
15 from a -- from coal ash impoundments going back
16 years? In other words, have you looked at the
17 sampling from coal ash impoundments over a
18 significant period of time?

19 MR. SODERBERG: The longest period
20 is probably maybe two years.

21 MR. RIESER: The longest that you
22 looked at? In other words, the one that you
23 looked at had two years of data?

24 MR. SODERBERG: I believe that's

1 correct.

2 MR. RIESER: So there are others out
3 there that may have longer periods of time?

4 MR. SODERBERG: Right.

5 MR. RIESER: Is it your opinion --
6 well, is it your opinion that the levels of
7 contaminants that come from coal ash impoundments
8 into groundwater fluctuate significantly over
9 time?

10 MR. SODERBERG: So what you mean by
11 significant is a subjective potential term.

12 MR. RIESER: I understand.

13 MR. SODERBERG: There is fluctuation
14 over time depending on the constituent and
15 depending on the conditions of the site.

16 MR. RIESER: What explains that
17 fluctuation?

18 MR. SODERBERG: It would, you know,
19 contain or it would depend on the things that were
20 mentioned in question 18 as read through.

21 MR. RIESER: I'm sorry. Is that the
22 answer? Are you looking at the question or is
23 that your answer?

24 MR. SODERBERG: That's my answer.

1 MR. RIESER: Okay. I'm sorry. I'm
2 sorry. So this discussion -- the answer that you
3 just gave about fluctuations, that is based on
4 your knowledge of chemistry and not on review of
5 data from coal ash impoundments over a period of
6 years?

7 MR. SODERBERG: It is based on my
8 knowledge of chemistry and my experience in
9 thinking with the tailings pile.

10 MR. RIESER: What was the data --
11 how long was that collected?

12 MR. SODERBERG: Probably 20 years of
13 infrequent monitoring.

14 MR. RIESER: And you saw
15 fluctuations in the contaminants as a concern of
16 that?

17 MR. SODERBERG: Yes.

18 MR. RIESER: How significant were
19 those fluctuations?

20 MR. SODERBERG: Again, the
21 definition of significant, but they were
22 observable.

23 MR. RIESER: Were they orders of
24 magnitude different?

1 MR. SODERBERG: I would say, you
2 know, based on the scenario we were discussing as
3 part of this current question, this highly
4 unlikely as I described it scenario of going from
5 a non-detect to above a numerical standard was --
6 I can't think of a situation where I've seen that.

7 MR. RIESER: Thank you.

8 HEARING OFFICER FOX: Ms. Olson?

9 MS. OLSON: Thank you. I'm going to
10 move onto question 21, but before I do that I just
11 want to read the last -- on page -- question 18 I
12 quote a chunk of your testimony. The last
13 sentence is "Thus the first rise in concentration
14 and peak concentration will be seen at different
15 times for different chemical constituents."

16 Question 21. What is the
17 relevance of the peak chemical constituent
18 concentration when compliance is based on a
19 comparison to either a background concentration
20 that is unit specific or a fixed numeric value?

21 MR. SODERBERG: So this peak
22 chemical concentration would give you a sense of
23 what to expect in terms of that chemical
24 concentration in the future. How much of a mass

1 of that pulse of chemical has moved through that
2 monitoring point.

3 So I believe, you know, that
4 should be considered. I'm not sure how relevant
5 that is to compliance, but certainly for any
6 corrective action you should be able to consider
7 whether the peak of the chemical has passed.

8 MS. OLSON: Is the concentration of
9 the chemical constituent over time a continuous
10 function?

11 MR. SODERBERG: A continuous
12 function is the concentration -- is continuous in
13 the subsurface.

14 MS. OLSON: So, in other words, will
15 one day you have a concentration of, say, five and
16 then could it jump to ten or does it have to go
17 five, six, seven, eight, nine and then ten?

18 MR. SODERBERG: That's what you mean
19 by continuous function?

20 MS. OLSON: Yes. I'm sorry.

21 MR. SODERBERG: The concentration
22 depends on many different things. It is
23 variable -- in reality, it is variable in what we
24 measure. I hope that answers the question.

1 MS. OLSON: So in reality versus
2 what we measure, I understand that when we do
3 monitoring well data we'll get different numbers
4 at different times, but in reality can the
5 chemical concentration change from let's say five
6 to ten without being at one point six, seven,
7 eight, nine?

8 MR. SODERBERG: No, it would go
9 through the concentrations.

10 MS. OLSON: And then -- thank you.
11 Prior to that peak concentration, will there be a
12 detection of that chemical constituent prior to
13 reaching the peak?

14 MR. SODERBERG: Most likely, yes.

15 MS. OLSON: And is it possible that
16 a corrective action can be taken with that
17 detection?

18 MR. SODERBERG: Yes.

19 MS. OLSON: And is it possible that
20 the corrective action could change the peak
21 chemical constituent concentration?

22 MR. SODERBERG: Yes.

23 MS. OLSON: Under the --

24 MS. BUGEL: Can I --

1 MS. OLSON: I've got two more.

2 MS. BUGEL: Okay.

3 MS. OLSON: What do you expect to
4 happen to the chemical concentration after
5 corrective action?

6 MR. SODERBERG: It depends on
7 corrective action. It depends on the corrective
8 action. Hopefully it goes down.

9 MS. OLSON: Would it be fair to say
10 that is the goal of the corrective action is to
11 make it go down?

12 MR. SODERBERG: Yes.

13 MS. OLSON: Thank you. Faith?

14 MS. BUGEL: Thank you. When a unit
15 starts leaching CCW to groundwater, what are some
16 of the first constituents you would see?

17 MR. SODERBERG: I would expect to
18 see boron and potentially sulfate.

19 MS. BUGEL: And can you explain
20 whether there is seasonal variability in
21 monitoring results?

22 MR. SODERBERG: There can be.

23 MS. BUGEL: Can you explain why?

24 MR. SODERBERG: I believe I've

1 addressed that.

2 MS. BUGEL: Thank you. I have no
3 further questions.

4 HEARING OFFICER FOX: Ms. Olson, I
5 believe I saw Ms. Antoniolli raise her hand for a
6 question.

7 MS. ANTONIOLLI: In your knowledge
8 of chemistry, does the leachability of the
9 constituents that you might see from CCW increase
10 over time?

11 MR. SODERBERG: The leachability
12 probably does -- it changes over time and there is
13 certainly a chance of it decreasing over time.

14 MS. ANTONIOLLI: Over a period of 20
15 years, for example?

16 MR. SODERBERG: It would depend on
17 the conditions of the fluid that is doing the
18 leaching, but it's possible.

19 MS. ANTONIOLLI: Okay.

20 HEARING OFFICER FOX: All set,
21 Ms. Antoniolli?

22 MS. ANTONIOLLI: Yes.

23 HEARING OFFICER FOX: Ms. Olson, if
24 you're ready to continue.

1 MR. JENNINGS: On page nine of your
2 testimony, you state "The Board should revise the
3 corrective action plan requirements to include a
4 requirement for long-term source control, such as
5 permanent removal of CCW from the impoundment or
6 relining with a liner that meets US EPA design
7 criteria for a double walled liner and a leachate
8 collection system." Going to question 22.3. How
9 would an owner or operator move saturated CCW?

10 MR. SODERBERG: I suppose it depends
11 on the level of saturation, but I imagine it would
12 be some earth moving equipment. If it is highly
13 saturated, you could potentially move it as a
14 slurry.

15 MR. JENNINGS: Would pumping be an
16 option?

17 MR. SODERBERG: It's possible. I
18 think that it is probably going to involve more
19 earth moving equipment.

20 MR. JENNINGS: Would pumping be a
21 technically feasible option?

22 MR. SODERBERG: I don't think
23 pumping would necessarily move at all, but, yeah,
24 I think you can certainly give it a try.

1 MR. JENNINGS: In order to move the
2 CCW, would it have to be dewatered?

3 MR. SODERBERG: There would probably
4 be some dewatering involved to reduce the weight
5 of the material to be moved, but it is not
6 required in all removal actions of sediments.

7 MR. JENNINGS: So assuming that
8 you'd have earth moving equipment, would wheeled
9 or track equipment, such as a Backhoe, something
10 along those lines, be able to enter a CCW surface
11 impoundment that had not been dewatered and
12 successfully remove the CCW?

13 MR. SODERBERG: I think there would
14 potentially have to be some dewatering done before
15 that would enter.

16 MR. JENNINGS: Question 23. Is it
17 true that the volume of liquid contained in one
18 cubic foot of saturated --

19 MS. BUGEL: Before you go on, can I
20 ask a follow up on the last line of questions?
21 Thank you. Would it be possible -- would the
22 ability of earth moving equipment to enter an
23 impound be dependent on the size and type of the
24 impound?

1 MR. SODERBERG: I imagine so, yes.

2 MS. BUGEL: Thank you. That's all I
3 have.

4 MR. JENNINGS: Can you please
5 clarify that?

6 MR. SODERBERG: On the size and type
7 of impoundment, as I mentioned the -- if --
8 depending on the level of saturation, there may be
9 some dewatering that may need to occur before the
10 earth moving equipment can move in and I can
11 imagine that certain types of equipment would be
12 needed for certain types of impoundment.

13 MR. JENNINGS: So how does the size
14 of the impoundment relate to whether dewatering
15 would be necessary in order to get equipment into
16 the impoundment itself?

17 MR. SODERBERG: Well, you can
18 imagine an impoundment that may have sort of
19 standing water in one section and drier sediment
20 in another section. So you could potentially move
21 some of the drier sediments without dewatering.
22 That may be a larger impoundment.

23 MR. JENNINGS: Question 23. Is it
24 true that the volume of liquid contained in one

1 cubic foot of saturated CCW could be as high as
2 0.25 cubic feet or more?

3 MR. SODERBERG: Yes.

4 MR. JENNINGS: Question 23.1. Where
5 would an owner or operator place the liquid
6 components of CCW?

7 MS. BUGEL: I'll object to the form
8 of the question. I don't think there has been any
9 foundation laid for what -- why an owner or
10 operator needs to place it anywhere. It is
11 unclear.

12 MR. JENNINGS: What would an owner
13 or operator do with the liquid component of CCW
14 after dewatering?

15 MR. SODERBERG: Well, I think that
16 removal of liquid component is to some extent
17 required in a corrective action plan and disposal
18 or storage of that liquid component would be
19 covered under the corrective action plan.

20 MR. JENNINGS: Question 23.2. Is it
21 true that an owner or operator may need to dispose
22 of a liquid component of the CCW?

23 MS. BUGEL: I'm going to object
24 again. Can you explain under what circumstances

1 you're making this assumption?

2 MR. JENNINGS: After the CCW --
3 after the CCW has been dewatered, is it true that
4 an owner or operator may need to dispose of the
5 liquid component of that CCW?

6 MR. SODERBERG: Yes, dispose or
7 treat.

8 MR. JENNINGS: Again, after
9 dewatering, is it true that the contaminants of
10 the liquid components of the CCW could include
11 suspended solids as well as dissolved
12 constituents?

13 MR. SODERBERG: Yes.

14 MR. JENNINGS: Question 23.4. Is it
15 true that the liquid component of the CCW would
16 require treatment prior to disposal into the water
17 of the United States?

18 MR. SODERBERG: Most likely, yes.

19 MR. JENNINGS: 23.5. Is it true
20 that -- what type of treatment is required to
21 remove suspended solids and dissolved constituents
22 from the liquid component of the CCW?

23 MR. SODERBERG: There would be
24 various options for settling filtration of the

1 suspended solids and then in terms of treatment of
2 the dissolved constituents of chemical treatment
3 precipitation, ion exchange reverse osmosis for
4 example.

5 MR. JENNINGS: 23.6. Is it true
6 that constituents in the liquid component of the
7 CCW could be separated by evaporating a liquid
8 from the liquid component of the CCW?

9 MR. SODERBERG: Yes, you would leave
10 most virtually all of the dissolved components
11 behind if you were to precipitate the dryness.

12 MR. JENNINGS: 23.7. Would
13 evaporating the liquid from the liquid component
14 of the CCW be a heat intensive process?

15 MS. BUGEL: Can you explain what you
16 mean by heat extensive?

17 MR. JENNINGS: Dr. Soderberg, can
18 you explain the process by which liquid is
19 evaporated from a slurry?

20 MR. SODERBERG: Well, evaporation is
21 a natural process, but in order to do it
22 efficiently or quickly it would certainly -- one
23 option would be a heat intensive process. There
24 are other options that are -- centrifuging or a

1 physical method of sort of squeezing a slurry.

2 MR. JENNINGS: Do you know how large
3 of an impoundment you would need to not use
4 evaporation to remove the liquid component -- to
5 not use heat in order to evaporate the liquid
6 component of CCW?

7 MR. SODERBERG: So that would --
8 depending on how much CCW was there to be
9 dewatered, but I haven't made an assessment of
10 that.

11 MR. JENNINGS: Do you know how much
12 it would require for 34,000 tons of CCW?

13 MR. SODERBERG: No.

14 MR. JENNINGS: 23.8. Could this
15 heat intensive, energy intensive process be
16 costly?

17 MS. BUGEL: I'm going to object. I
18 don't think there has been any discussion of
19 energy intensive. So I'm going to object to the
20 form of the question, the characterization of the
21 witness's testimony and also to the term of the
22 use costly, which is subjective.

23 MR. JENNINGS: I'll rephrase the
24 question with respect to the use of energy

1 intensive. However, Dr. Soderberg has noted that
2 he's an expert with respect to the various
3 financial requirements for the industry. So it
4 seems at this point in time he'd be able to give a
5 fair characterization of what would or would not
6 be costly.

7 MS. BUGEL: He may be an expert on
8 financials of the industry, but costly is still
9 subjective.

10 HEARING OFFICER FOX: Ms. Bugel,
11 let's hold that in abeyance. Mr. Jennings, I
12 think you suggested you would rephrase your
13 question. Why don't we proceed with that first.

14 MR. JENNINGS: Dr. Soderberg, could
15 this heat intensive process cause an owner or
16 operator an amount of money in excess of \$1
17 million based on what you have seen?

18 MR. SODERBERG: Yes.

19 MR. JENNINGS: Could it cost an
20 owner or operator more than \$10 million?

21 MR. SODERBERG: Right. Again, that
22 depends on how much CCW you're talking about, the
23 size of the plant, but yes.

24 MR. JENNINGS: Using the 34,000 ton

1 example, could that cost more than \$10 million?

2 MR. SODERBERG: I don't know. I
3 would have to make a determination about that.

4 MS. OLSON: Question 23.9. Is it
5 true that contaminants in the liquid component of
6 CCW could be separated by utilizing the water
7 treatment process such as reverse osmosis?

8 MR. SODERBERG: Yes.

9 MR. JENNINGS: Question 23.10. I
10 will anticipate your objection and rephrase.

11 MS. BUGEL: Thank you.

12 MR. JENNINGS: Is it true that the
13 reverse osmosis process could cost more than the
14 evaporation process to remove dissolved
15 constituents from a liquid component of CCW?

16 MR. SODERBERG: It could.

17 MR. JENNINGS: Do you know how much
18 more that would cost?

19 MR. SODERBERG: No.

20 MR. JENNINGS: Would it cost more
21 than twice as much?

22 MR. SODERBERG: I don't know.

23 MR. JENNINGS: Question 23.11. What
24 is the nature of the waste that is produced by the

1 reverse osmosis process?

2 MR. SODERBERG: The concentrated
3 brime.

4 MR. JENNINGS: Question 23.12. How
5 would the owner or operator of a reverse osmosis
6 unit dispose of the concentrate which it produces?

7 MR. SODERBERG: There are various
8 modes of disposal. You could potentially put in a
9 landfill or a common method of disposal of brimes
10 is a deep injection well.

11 MR. JENNINGS: I'm sorry, Doctor.
12 Could you repeat the last word that you said.

13 MR. SODERBERG: Well.

14 MR. JENNINGS: Is a brime a liquid?

15 MR. SODERBERG: You know, it can be
16 kind of a muck that is produced, but brime refers
17 to a liquid, yes.

18 MR. JENNINGS: Do you know can
19 liquid be disposed of in a landfill in Illinois?

20 MR. SODERBERG: I do not know.

21 MR. JENNINGS: Can anybody else on
22 the panel answer that?

23 MS. BUGEL: We answered for --

24 MR. SODERBERG: Can I ask a question

1 of you? Are you referring to liquid on its own or
2 liquid as part of another waste?

3 MR. JENNINGS: Brime.

4 MS. BUGEL: I'm going to object
5 because the witness has also testified that brime
6 in the way he is using it is not always a liquid.
7 He's testified that it is a muck. I don't know
8 the technical definition of muck.

9 MR. JENNINGS: I believe he did
10 indeed confirm it was a liquid or had liquid
11 properties.

12 MR. SODERBERG: Brime, yes, could
13 be -- a definition of a brime could be liquid
14 only.

15 MR. JENNINGS: And if nobody has an
16 answer, obviously you can get back to us.

17 MR. SODERBERG: Maybe an answer
18 could be that waste in general contains liquid,
19 can contain liquid.

20 MR. ARMSTRONG: We can provide
21 further clarification on your question.

22 MR. JENNINGS: In the interest of
23 time, that may be --

24 MS. BUGEL: Forgive me for laughing,

1 but at this moment we're confused as to what the
2 question on the table is.

3 HEARING OFFICER FOX: Mr. Jennings,
4 do you want to rephrase the question or move onto
5 your next one?

6 MR. JENNINGS: The question pending
7 was can liquid be disposed of in a landfill in
8 Illinois?

9 MR. SODERBERG: And we can take that
10 question under advisement and provide the legal
11 opinion of our group.

12 MS. BUGEL: And I'd like to ask a
13 follow-up question in this line of questions. Is
14 coal ash a liquid?

15 MR. SODERBERG: Coal ash is not a
16 liquid.

17 HEARING OFFICER FOX: Anything
18 further, Ms. Bugel?

19 MS. BUGEL: No, thank you.

20 MR. ARMSTRONG: We did have one note
21 in response to your question. Ms. Barkley pointed
22 out --

23 HEARING OFFICER FOX: Do you want to
24 have Ms. Barkley respond to that since you're

1 referring to something she pointed out?

2 MS. OLSON: What is -- before --
3 what is being responded to? I didn't know there
4 was a question pending.

5 HEARING OFFICER FOX: Mr. Jennings
6 has posed a question regarding the disposal of
7 liquids in landfills. Mr. Armstrong, you're
8 indicating that the environmental groups will
9 respond to that and we provided a forum in June to
10 do that, but you've also indicated that
11 Ms. Barkley may have something to add to that.

12 MS. OLSON: Sorry.

13 HEARING OFFICER FOX: That is what I
14 wanted to illicit from her if she wanted to do
15 that.

16 MS. BARKLEY: I just want to point
17 out that Lincoln Stone Quarry has been permitted
18 as a landfill and that has a lot of water in it, a
19 lot of standing liquid in it.

20 HEARING OFFICER FOX: Anything
21 further from the environmental groups on that
22 issue? That's the full response. Mr. Jennings,
23 we're back to you for a question.

24 MR. JENNINGS: So we were on

1 question 23.13. Is it likely that the concentrate
2 produced by the reverse osmosis process can be
3 discharged to waters of the United States and meet
4 discharge effluent limitations?

5 MR. SODERBERG: No, that's not
6 likely.

7 MR. JENNINGS: Dr. Soderberg, I
8 believe you may have touched on this, but I wanted
9 to clarify. So we're looking at question 23.16.

10 Could the concentrate produced
11 by the reverse osmosis unit have to be disposed of
12 in a deep injection well?

13 MR. SODERBERG: Again, that is one
14 common method of disposal of brine. I'm not sure
15 if it would have to be disposed that way.

16 MR. JENNINGS: Is disposal in a deep
17 injection well more expensive than evaporation?

18 MR. SODERBERG: I'm not sure.

19 MR. JENNINGS: Question 24. Does
20 the United States Environmental Protection
21 Agency's proposed regulation in 40 C.F.R. Part 257
22 require permanent removal of CCW from existing
23 impoundments by an owner or operator?

24 MR. SODERBERG: I would have to

1 review that and say -- unless you'd like me to go
2 through it. I don't know.

3 MR. JENNINGS: In the interest of
4 time, if anybody from the panel would like to get
5 back to us, it would be questions 24, 25, 26, 27,
6 28, and --

7 MR. ARMSTRONG: I can answer the
8 questions now or we can just proceed with the
9 questions for Dr. Soderberg. Whichever you
10 prefer.

11 MS. OLSON: We actually have
12 technical questions that are in follow up to
13 question 25. So I don't think we want to save
14 them all.

15 MR. ARMSTRONG: Okay.

16 MS. OLSON: But we can maybe move
17 straight to those technical questions and then
18 we'll address these later.

19 MR. ARMSTRONG: Yeah, I think that's
20 a good idea.

21 MS. OLSON: So question 25 asks
22 whether or not the proposed federal regulations
23 allow the closure with ash left in place. Do you
24 know that Dr. Soderberg?

1 MR. SODERBERG: My recollection is
2 that it does allow for that.

3 MS. OLSON: Does the proposed
4 federal rule require a cover system, do you
5 recall, when ash is left in place?

6 MR. SODERBERG: I believe so. I
7 would have to look at a specific section, but,
8 yes, I believe so.

9 MS. OLSON: And do you know the
10 permeability of that cover system as proposed by
11 the federal rule.

12 MR. SODERBERG: If I remember, it is
13 the same permeability that is proposed by the
14 Agency in this rule. Can you point me to a
15 specific section?

16 **Q. Do you have the Federal Register?**

17 **A. Yes.**

18 **Q. I have a note for page 35243.**

19 **A. Okay. I got it.**

20 MR. ARMSTRONG: Can you please
21 repeat that number.

22 MS. OLSON: 35243. I'm sorry.
23 That's not the correct citation. I'm looking at
24 the wrong -- I've been looking at things for too

1 long. We found it. Page 35252. Section 257.100
2 Subsection (d)(1).

3 MR. SODERBERG: I'll read that
4 Section D. For closure with CCR's in place, a
5 final cover system must be installed at all CCR
6 landfills and surface impoundments that is
7 designed to minimize infiltration and erosion.
8 The final cover system must be designed and
9 constructed to, one, have a permeability less than
10 or equal to the permeability of any bottom liner
11 system or natural subsoils present, or a
12 permeability no greater than 1×10^{-5} cm/second.
13 Whichever is less

14 MS. OLSON: Thank you. Does a cover
15 system that you just described from the federal
16 rule reduce the amount of infiltration into any
17 coal combustion left in place in the surface
18 impoundment?

19 MR. SODERBERG: Yes.

20 MS. OLSON: Will a reduction in
21 infiltration result in a reduction in the volume
22 of leachate generated?

23 MR. SODERBERG: Yes.

24 MS. OLSON: Will a reduction in the

1 amount of leachate being generated reduce the
2 volume of leachate available to migrate to
3 groundwater?

4 MR. SODERBERG: Yes.

5 MS. OLSON: So if leachate with a
6 known concentration of a chemical contaminant
7 mixes with groundwater, is it true that the
8 resulting mixture will have some concentration of
9 that chemical constituent?

10 MR. SODERBERG: Yes.

11 MS. OLSON: So if the volume of
12 leachate that is reaching groundwater is reduced,
13 is it fair to say that the concentration of that
14 chemical within the groundwater will also be
15 reduced?

16 MR. SODERBERG: Without changes in
17 the groundwater movement, yes.

18 MS. OLSON: If groundwater having
19 some chemical concentration migrates to surface
20 water and that chemical concentration causes a
21 measurable increase in concentration of that
22 chemical in the surface water, will a reduction in
23 the chemical concentration in groundwater result
24 in a reduction of the chemical concentration in

1 surface water assuming neither the volume of the
2 groundwater migrating to the surface water nor the
3 volume of the surface water changes?

4 MR. SODERBERG: Yes.

5 MS. OLSON: In your pre-filed
6 testimony reference set three, United States
7 Environmental Protection Agency Human Ecological
8 Risk Assessment for Coal Combustion Waste April
9 2010 page 2-8 there is a figure, Figure 2.2. Are
10 you familiar with that figure?

11 MS. BUGEL: If you can give us a
12 minute, he's still getting that.

13 MR. ARMSTRONG: Would you repeat the
14 page number?

15 MS. OLSON: Page 2-8. Figure 2-2.
16 It is also attached to the Agency's responses to
17 Board questions that was submitted yesterday.

18 MR. SODERBERG: I have it.

19 MS. OLSON: Is the title Conceptual
20 Site Model of CCW Risk Assessment?

21 MR. SODERBERG: Yes.

22 MS. OLSON: Does that schematic
23 present a graphical representation of how the risk
24 of exposure to CCW leachate can occur?

1 MR. SODERBERG: Yes.

2 MS. OLSON: Does the schematic
3 indicate that leaching and infiltration pose a
4 risk to groundwater?

5 MR. SODERBERG: Yes.

6 MS. OLSON: Does the schematic
7 indicate that groundwater may cause exposure risk
8 by injection?

9 MR. SODERBERG: Yes.

10 MS. OLSON: Does the schematic
11 indicate groundwater may cause contamination --
12 excuse me.

13 Does the schematic indicate that
14 groundwater may cause contamination of sediments
15 by groundwater, which causes exposure risk by
16 contact or injection?

17 MR. SODERBERG: Yes.

18 MS. OLSON: Does the schematic
19 indicate that sentiments contaminated by
20 groundwater may cause contamination of surface
21 water, which may cause exposure risk by contact
22 and ingestion?

23 MR. SODERBERG: Yes, via the
24 sediment box here.

1 MS. OLSON: Does it hold true that
2 if infiltration and the resulting leachate from
3 CCW is reduced by the installation of a cover
4 system, that the risk to groundwater and hence the
5 risk to sediment and surface water would also be
6 reduced?

7 MR. SODERBERG: Yes.

8 HEARING OFFICER FOX: Ms. Olson,
9 Chairman Glosser has a question. We'll interrupt
10 you for just a moment.

11 MS. GLOSSER: I have a question
12 related to that line of thinking. If because the
13 concentration of the contaminants would be
14 reduced, would that suggest then that putting a
15 cover on it would solve the problem and that there
16 would be, therefore, no risk to human health or
17 the environment just by putting a cover on because
18 of the reduction?

19 MR. SODERBERG: I believe under that
20 scenario I'm assuming no changes to groundwater
21 and surface water volumes, there would be lower
22 risk.

23 MS. GLOSSER: A lower risk, but does
24 that mean there wouldn't be a risk to public

1 health for the environment?

2 MR. SODERBERG: No.

3 MS. GLOSSER: A reduced risk?

4 MR. SODERBERG: Yes.

5 MS. GLOSSER: Thank you.

6 MR. ARMSTRONG: Could I ask just a
7 follow-up question as well? Would putting a cover
8 on an impoundment necessarily address any issues
9 relating to the structural integrity of the
10 impoundment?

11 MR. SODERBERG: Not necessarily.

12 MS. GLOSSER: I'm done. Thank you.

13 MS. OLSON: I have a few more
14 questions.

15 MS. GLOSSER: I'm done. Thank you.

16 MS. OLSON: I began this line of
17 questioning by asking the permeability of the
18 cover system required by the federal proposal and
19 you said it was 1×10^{-5} cm/second, is that right?

20 MR. SODERBERG: Yes.

21 MS. OLSON: Do you know what the
22 Agency's proposed cover permeability requirements
23 are?

24 MR. SODERBERG: I'm looking at

1 841.420(b)(1). Standards for low permeability for
2 the low permeability layer. The low permeability
3 layer must have a permeability less than or equal
4 to 1×10^{-7} cm/second.

5 MS. OLSON: Can you explain the
6 difference between 1×10^{-5} cm/second and
7 1×10^{-7} cm/second?

8 MR. SODERBERG: That is two orders
9 of magnitude.

10 MS. OLSON: Is that a hundred times?

11 MR. SODERBERG: Yes.

12 MS. OLSON: In what direction? Is
13 it 200 times faster or 200 times slower?

14 MR. SODERBERG: The permeability is
15 200 times lower in the Agency's proposed rule than
16 in the -- sorry. One hundred times lower in the
17 Agency's proposed rule than in the US EPA's
18 proposed rules.

19 MS. OLSON: Okay. I want to move to
20 question 29 if everyone is ready to try to speed
21 things along with the understanding that we may
22 come back to questions 24 through 28 to have other
23 members of the panel respond.

24 Question 29. Does the

1 corrective action section in proposed Part 841 as
2 proposed by the Agency preclude a corrective
3 action plan from having both long-term and
4 short-term source control?

5 MR. SODERBERG: I would have to
6 either ask for a specific section or actually it
7 is probably in my reading legal determination of
8 the language.

9 MS. OLSON: We'll move on. On page
10 ten of your testimony, you state "Modeling of
11 contaminant transport for US EPA's risk assessment
12 predicted even longer timeframes for peak
13 concentrations to appear in drinking water wells
14 off-site (e.g. the median time to peak boron
15 concentration was 74 years from unlined
16 impoundments and 90 years from clay-lined
17 impoundments).

18 Question 30.3. Do the modeling
19 results in (US EPA 2010a) as presented, represent
20 any particular power generating facility in
21 Illinois?

22 A. The results don't refer to any
23 specific power generating facility. The data that
24 was included in the modeling apparently included

1 data from the Illinois power generating facilities
2 that were listed as one of the states that was
3 included.

4 Q. Do you know whether or not if the
5 facilities in Illinois were above or below the 74
6 years for peak boron concentration?

7 A. So the modeling that was done, if I
8 remember, was a stochastic or probabilistic type
9 modeling where you are considering a range of
10 input parameter values and are coming up with an
11 assessment of the uncertainty around the
12 calculated values based on the range or
13 distribution of the input parameters and so I
14 think the question they were trying to answer was
15 more of a national risk assessment and so I don't
16 think that those results applied to a specific
17 facility.

18 MS. OLSON: Can I just take a
19 minute?

20 HEARING OFFICER FOX: Yes.
21 Absolutely, Ms. Olson.

22 MS. OLSON: Thank you for the
23 minute.

24 HEARING OFFICER FOX: Not at all.

1 Is our court reporter ready to resume on the
2 record? Very good. He indicates he is.

3 MS. OLSON: We're going to skip 31.

4 MS. BUGEL: Before we move on, can I
5 follow up on Dr. Soderberg's answer to the last
6 question?

7 HEARING OFFICER FOX: Let's go to
8 that and then we can return with you, Ms. Olson.

9 MS. BUGEL: Thank you. In your last
10 answer, I believe you just said the results don't
11 apply to a single facility. Can you explain what
12 you meant by applied to?

13 MR. SODERBERG: Yes, I was referring
14 to the -- that the results were not meant to model
15 any specific scenario at a specific Illinois
16 generating facility, but they do serve some
17 purpose for the question that they were designed
18 to answer and in particular they allow for the
19 comparison of different types of liners versus
20 unlined impoundments and also relative migration
21 of different constituents.

22 MS. BUGEL: And one more question on
23 that. What is your opinion of US EPA's data in
24 that database?

1 MR. SODERBERG: From what I recall,
2 the input data was -- seemed to be fairly
3 representative. I didn't do a thorough
4 investigation of where the data came from, but it
5 seemed like they did cover the scope of the types
6 of concentration you would see in leachate.

7 MS. BUGEL: Thank you.

8 HEARING OFFICER FOX: Absolutely,
9 Ms. Olson. We're ready for you.

10 MS. OLSON: I have a follow up on
11 that line of questioning. Do you know we were
12 talking about the median time, right, for peak
13 boron concentration was 74 years, do you know what
14 the median conductivity was for the -- used to
15 establish the 74 years?

16 MR. SODERBERG: I do not. I'd have
17 to look back at that.

18 MS. OLSON: That's all I have.

19 HEARING OFFICER FOX: Very good.
20 Any further follow up, Ms. Bugel or Mr. Armstrong?
21 You had referred to question 31, Ms. Olson. I
22 believe indicating an interest in going ahead from
23 there, is that correct?

24 MS. OLSON: Yes, with the

1 understanding we may direct these questions to the
2 other witnesses later.

3 HEARING OFFICER FOX: So noted.

4 MS. OLSON: We're ready to move onto
5 question 32.

6 MR. JENNINGS: Dr. Soderberg, all
7 these questions relate to the federal proposal,
8 specifically the provisions that relate to double
9 walled liner. So that is on page 35 to 43 of the
10 Federal Register Section 257.71.

11 So question 32.2. Are you
12 familiar with the US EPA design criteria for the
13 double walled liner and leachate collection system
14 as proposed in this section?

15 MR. SODERBERG: So I realize there
16 is a little bit of confusion here. I'd like to
17 read two sections of this Federal Register.

18 MR. JENNINGS: Please go ahead.

19 MR. SODERBERG: So from reading
20 257.71 design criteria for adjusting CCR surface
21 impoundment. A, no later than five years after
22 effective date of final rule existing CCR surface
23 impoundment shall be constructed, one, with a
24 composite liner as defined in Paragraph (a)(2) of

1 this section and a leachate collection system
2 between the upper and lower components of the
3 composite liner. The design shall be in
4 accordance with the design prepared by or under
5 the direction of and certified by an independent
6 registered professional engineer. Two, for
7 purposes of this section, composite liner means a
8 system consisting of two components, the upper
9 component must consist of a minimum 30 mil
10 flexible membrane liner, FML, and lower component
11 must consist of at least a two foot layer of
12 compacted soil with a hydraulic conductivity of no
13 more than 1×10^{-7} cm/second.

14 FML components consisting of
15 high density polyethylene, HDPE, shall be at least
16 60 mil thick. The FML component must be installed
17 in direct and uniform contact with the compacted
18 soil component. Now, turning to the same Federal
19 Register page 35174. This is the second paragraph
20 on the third column. EPA is proposing to modify
21 the double lined leachate collection and removal
22 system requirement by substituting a requirement
23 to install a composite liner and leachate
24 collection and removal system.

1 As modeled in EPA's risk
2 assessment, composite liners effectively reduce
3 risks from all constituents of the low risk
4 criteria proposed landfill to surface impoundment.
5 Therefore, the Agency believes a composite liner
6 system would be adequately protective of human
7 health and the environment and a double liner
8 system would be unnecessarily burdensome.

9 The modified standards specify a
10 composite liner system that can consist of two
11 components. The uppermost -- the upper component
12 must consist of a minimum 30 mil flexible membrane
13 liner, FML, and the lower component must consist
14 of at least a two foot layer of compacted soil for
15 the hydraulic conductivity of no more than
16 1×10^{-7} cm/second.

17 FML components existing of high
18 density polyethylene, HDPE, shall be at least 60
19 mil thick. The FML component must be installed
20 and in direct and uniform contact. With the
21 compacted soil component, the leachate collection
22 system must be designed and constructed to
23 maintain less than a 30 centimeter depth of
24 leachate over the liner.

1 Now, reading those two I believe
2 there is an error in the first passage that I read
3 that discusses the leachate collection system
4 between the upper and lower components of the
5 composite liner. First of all, that -- and IEPA
6 has pointed out as well the -- that prevents the
7 FML component being installed and directing you
8 from contact with the compacted soil component.
9 And going to the second passage that I read that
10 system between the two components is not
11 consistent with the last sentence that a leachate
12 collection system must be designed and constructed
13 to maintain less than a 30 centimeter depth of
14 leachate over the liner.

15 So this -- given this
16 inconsistency within the US EPA rule, it seems
17 from the other language in this proposed rule what
18 they were potentially intending, I'm not speaking
19 for them, but was a leachate collection system
20 potentially above the FML component with some sort
21 of packing of high -- some granular material
22 around it to allow for the leachate to enter the
23 collection system above the FML component and then
24 the FML component in direct and uniform contact

1 with the underlying compacted soil layer.

2 Having said that, there is
3 language proposed in the Agency -- or the
4 environmental groups proposed amendments that
5 hopefully simplify that and avoids that error.
6 Before you read that, Andrew, I'd also like to
7 read from my own pre-filed testimony.

8 On page 11, the second paragraph
9 in the middle I stated the double liner systems
10 proposed by the US EPA having much lower failure
11 rate than single liner systems and should be
12 adopted here as best practice for any new
13 impoundments and the realigning of existing
14 impoundments.

15 So I believe I want to amend
16 that to reflect the composite liner system. The
17 confusion in my reading of the EPA's proposed rule
18 came from the description of a leachate collection
19 system between the two components. So, Andrew,
20 would you read the proposed amended language?

21 MR. ARMSTRONG: So on page 40 of the
22 environmental groups proposal 841.420(b) the
23 environmental groups proposal language that was
24 consistent with Dr. Soderberg's testimony of the

1 desirability of a composite liner with a leachate
2 collection system. So, therefore, we stated
3 that -- I'm sorry. I'm sorry. Page 46 of the
4 design impoundment. Design standards for existing
5 impoundments and --

6 MR. O'LEARY: What page did you say
7 again?

8 MR. ARMSTRONG: Page 45 and 46. The
9 language no later than five years after effective
10 date of final rule, existing CCR surface.
11 Impoundments shall be constructed, one, with a
12 composite liner, as defined in Paragraph (a)(2) of
13 this section and a leachate collection system
14 between the upper and lower components of the
15 composite liner. The design shall be in
16 accordance with a design prepared by, or under the
17 direction of, and certified by an independent
18 registered professional engineer and then the
19 composite liners is defined as two components and
20 his -- I believe in all respects identical to the
21 language used in the EPA's proposal.

22 MR. JENNINGS: So, Dr. Soderberg, I
23 want to use the term US EPA design criteria and in
24 doing so I'm referencing the design criteria laid

1 out on page 35174, the composite liner that you
2 have verbally amended your testimony to reflect.

3 So this was a modified version
4 of question 32.3. Do you know whether the US
5 EPA's design criteria for a composite liner and
6 leachate collection system has been used for any
7 waste disposal applications?

8 MR. SODERBERG: Yes.

9 MR. JENNINGS: Have you been
10 personally involved in any projects with that kind
11 of composite liner?

12 MR. SODERBERG: Yes.

13 MR. JENNINGS: What were those
14 projects?

15 MR. SODERBERG: There was the one
16 landfill in Ohio. Some portion of that landfill
17 had a composite liner with a leachate collection
18 system above the FML.

19 MR. JENNINGS: Was that liner part
20 of a remediation of a landfill or was it part of a
21 new design?

22 MR. SODERBERG: It was part of a
23 design of the landfill.

24 MR. JENNINGS: When you say design,

1 you mean it was a new construction of the
2 landfill, correct?

3 MR. SODERBERG: I mean, it was --
4 when it was constructed, it had this liner.

5 MR. JENNINGS: Okay. That's what I
6 was asking.

7 MR. SODERBERG: Okay.

8 MR. JENNINGS: Question 32.6. Would
9 realigning a CCW surface impoundment involve the
10 removal of CCW in construction of a liner using
11 the US EPA's design criteria for a composite liner
12 and leachate collection system?

13 MR. SODERBERG: Yes.

14 MR. JENNINGS: Question 32.7. What
15 type of the structure would the CCW be placed in
16 temporarily before being moved back to the newly
17 lined impoundment?

18 MS. BUGEL: Before you get to that
19 question, can I ask a follow-up question on the
20 previous one?

21 MR. JENNINGS: Yes.

22 MS. BUGEL: Thank you. Thank you.

23 Do you know in your testimony by recommending the
24 design criteria you recommend, are you

1 recommending the relining of all impoundments that
2 do not meet the design criteria? Would you
3 mandate that in your recommendation?

4 MR. SODERBERG: I think that that
5 is, again, part of the policy decision, but I
6 would say that would be protective of groundwater
7 quality.

8 MS. BUGEL: If an impoundment does
9 not meet the design criteria in your testimony, in
10 your opinion, are there other options besides
11 removal of the CCW and relining that impoundment?

12 MR. SODERBERG: Other options with
13 respect to corrective action or --

14 MS. BUGEL: Addressing concerns
15 about that impoundment not meeting your design
16 criteria.

17 MR. SODERBERG: No, if the design
18 criteria in the impoundment is subject to the rule
19 and the design criteria are not met, then closure
20 or relining would be most protective of
21 groundwater quality.

22 MS. BUGEL: And would it be -- would
23 you -- in your opinion, should it be relined prior
24 to closure or is there an option just to close it?

1 MR. SODERBERG: I think there -- I
2 think there is an option. I would refer to the
3 text of the rule.

4 MS. OLSON: Of which rule?

5 MR. SODERBERG: Of the environmental
6 groups proposed amended rule.

7 HEARING OFFICER FOX: Anything
8 further, Ms. Bugel?

9 MS. BUGEL: No, thank you. Not
10 right now.

11 HEARING OFFICER FOX: Ms. Olson, I
12 do see Mr. Rieser's hand and Mr. Jennings before
13 we go back to the Agency.

14 MR. RIESER: Have you been involved
15 in a situation where there was an impoundment
16 which contained material and then had to be --
17 then for whatever reason had to be relined I
18 should say or have a liner installed that wasn't
19 there before?

20 MR. SODERBERG: I can't think of a
21 site that I've been directly involved in.

22 MR. RIESER: Do you have any concept
23 of what the cost would be involved in doing
24 something like that?

1 MR. SODERBERG: I haven't made may
2 cost evaluation.

3 MR. RIESER: Thank you.

4 HEARING OFFICER FOX: Mr. Jennings,
5 if I can interrupt. I realize we're right in the
6 middle subpart of question number 32. We have
7 been back underway for nearly two hours. Why
8 don't we take a quick ten break and resume at 4:00
9 p.m.

10 (Whereupon, a break was taken
11 after which the following
12 proceedings were had.)

13 HEARING OFFICER FOX: The time of
14 4:00 having come. Thank you for returning
15 promptly from the break. Here would be our
16 intention for the remainder of this day. Having
17 indicated that we would schedule additional
18 hearing time next month in June, and you can
19 certainly expect a Hearing Officer order to
20 reflect that very soon, it does appear,
21 Mr. Jennings, and, Ms. Olson, that we are
22 approaching the end of the questions that were
23 specifically dedicated to Dr. Soderberg.

24 The Board's intention would be

1 to wrap those up and then at the conclusion of
2 that time, and any follow-ups generated by those
3 questions, to adjourn for the day and then we can
4 turn to the questions that you had directed
5 specifically to Ms. Barkley at the hearing
6 opportunity that we will be providing in June, on
7 June 18th and 19th, I believe. Any questions
8 about that? Very well, I think our course is set.
9 Mr. Jennings, I think you were asking questions
10 and we can resume with you.

11 MR. JENNINGS: Thank you. So
12 turning back to question 32.7 and this is a
13 preliminary matter. In order to line an existing
14 surface -- CCW surface impoundment, would the CCW
15 in the impoundment have to be removed and stored
16 elsewhere?

17 MR. SODERBERG: I believe there
18 would be various options available to the owner or
19 operator. I didn't testify to any process of
20 temporary storage, but, yeah, there could be a
21 disposal and reuse of that impoundment after it is
22 relined. There could also be some other dry ash
23 handling equipment installed at the facility.

24 MR. JENNINGS: And the site to which

1 the CCW would be moved, would that also have to be
2 lined in accordance with the US EPA proposal?

3 MR. SODERBERG: If it were disposed
4 of in a landfill, yes.

5 MR. JENNINGS: So we will be
6 skipping questions 32.9 through 32.15.

7 MS. OLSON: Is there any follow up
8 on that line of questioning?

9 MS. BUGEL: No, not right now.
10 Thank you.

11 MS. OLSON: I've got one other
12 question for Dr. Soderberg. Questions 33 through
13 38 we can skip with the understanding that we may
14 ask Ms. Barkley at the next hearing. So just to
15 kind of reiterate the questions that we're
16 skipping for your notes 33 through 38, 31 and then
17 to the extent that questions 24 through 28 were
18 not answered. Those questions.

19 HEARING OFFICER FOX: Just to be
20 clear, Ms. Olson. Those are questions
21 specifically at this point that you would like to
22 address on what will become our hearing that we
23 will hold in June, is that correct?

24 MS. OLSON: Yes, please.

1 HEARING OFFICER FOX: Okay.

2 MS. OLSON: The only other question
3 I have for Dr. Soderberg is that with these coal
4 combustion waste surface impoundments if there was
5 a detection or a release and a detection above the
6 numeric standards, is it acceptable in your
7 opinion to perform corrective action and not to
8 require closure?

9 MR. SODERBERG: Corrective action
10 that reduces that concentration is -- I believe
11 that is -- that would satisfy the groundwater
12 quality assurance -- it would be protective of
13 groundwater quality.

14 MR. JENNINGS: Just to make sure I
15 understand your testimony. If corrective action
16 was performed such that there was no longer an
17 exceedance of the groundwater quality standard, it
18 is your opinion that facility should not be
19 required to close?

20 MR. SODERBERG: Let me just confer
21 with my colleagues for a minute. So I believe I
22 testified that the corrective action that reduces
23 that concentration would be protective of
24 groundwater quality, but that would only address

1 kind of the symptom of the problem and that some
2 source control would also be appropriate if there
3 is an exceedance.

4 MS. OLSON: So by source control, am
5 I to assume that you mean closure, some sort of
6 closure?

7 MR. SODERBERG: Or relining.

8 MS. OLSON: So relining the facility
9 would be an acceptable alternative to closure, is
10 that right?

11 MR. SODERBERG: Yes.

12 MS. OLSON: Thank you,
13 Dr. Soderberg.

14 HEARING OFFICER FOX: Ms. Bugel, I'm
15 getting the sense that you'd like to ask a
16 question, is that correct?

17 MS. BUGEL: Yeah, I do have a couple
18 of follow-up questions for Dr. Soderberg.

19 HEARING OFFICER FOX: Please go
20 ahead.

21 MS. BUGEL: Turning back to Agency
22 question eight -- I'm sorry. Agency's question
23 14. I looked at the wrong spot in my notes.

24 The Agency had asked whether

1 there -- if an up-gradient well has a higher
2 concentration of a particular contaminant in it
3 than a down-gradient well, is it true that one
4 possible explanation is that some unidentified
5 up-gradient source exists, do you remember that
6 question?

7 MR. SODERBERG: Yes.

8 MS. BUGEL: Are there other possible
9 explanations for that higher concentration at the
10 up-gradient well?

11 MR. SODERBERG: Yes. Well, again as
12 I said before, this would require an accurate
13 understanding of the characterization of
14 up-gradient versus down-gradient. If there was
15 any mounding associated with an impoundment, that
16 would kind of disrupt that groundwater flow and
17 groundwater condition of up-gradient versus
18 down-gradient. So, in that case, they could --
19 that would be a different -- another explanation.
20 Natural matrix source of contamination or of
21 constituent concentrations could also be an
22 explanation.

23 MS. BUGEL: Thank you. That's all I
24 have right now.

1 HEARING OFFICER FOX: Very good.

2 Thank you, Ms. Bugel. Ms. Olson, am I --

3 MS. OLSON: Thank you.

4 HEARING OFFICER FOX: No problem.

5 Am I correct in understanding that aside from the
6 questions you have named that you have wrapped up
7 the questions that you wanted to pose specifically
8 to Dr. Soderberg here today?

9 MS. OLSON: That's correct.

10 HEARING OFFICER FOX: Any follow ups
11 at all for the time being?

12 MS. OLSON: Well, if you ask, we
13 have one more. Thank you.

14 Dr. Soderberg, you have given us
15 a detailed description of your work history and I
16 have one question regarding the projects that
17 you've worked on.

18 On how many of those remediation
19 projects has natural attenuation been how the
20 groundwater is remediated?

21 MR. SODERBERG: Natural attenuation
22 is typically one of the scenarios that is
23 considered as part of a remediation investigation
24 for an infeasibility study. So they were

1 considered and certainly at least some of the
2 sites I'm sure that was one of the -- that was
3 part of the solution. I'd have to go back and
4 look at how many of those sites.

5 MS. OLSON: So some of them were, is
6 that correct?

7 MR. SODERBERG: Yes.

8 MS. OLSON: But you can't recall
9 exactly how many?

10 MR. SODERBERG: No.

11 MS. OLSON: Do you feel that the use
12 of natural attenuation as a way to remediate
13 groundwater is an acceptable approach?

14 MR. SODERBERG: It can be
15 particularly with respect to organic
16 contamination.

17 MS. OLSON: Thank you very much.

18 MR. SODERBERG: Sure.

19 HEARING OFFICER FOX: Thank you,
20 Ms. Olson. It looks like we're wrapping up
21 questions specifically for you here,
22 Dr. Soderberg, but I do note that Mr. Rieser,
23 Ms. Franzetti and Mr. Sylvester are with us. Do
24 you have any questions you wish to ask before we

1 turn to wrapping up today? I'm not seeing nor
2 hearing any indication that they do.

3 In recognition that we're not
4 expecting to have Dr. Soderberg with us for
5 hearing on June 18th and 19th, am I correct in
6 understanding that you still have no questions
7 that you want to ask him?

8 Not seeing any indication that
9 there are questions, I know that Dr. Rao -- I
10 always give you a degree. Mr. Rao has a single
11 question for Dr. Soderberg before we move on.

12 MR. RAO: It's just a clarification.
13 We just want to make sure that the proposed
14 language in your counterproposal for design
15 standard for new and existing impoundments and the
16 financial assurance for the regions that you have
17 proposed that we could pose questions at the next
18 hearing or is it Dr. Soderberg who would be
19 responding to those comments?

20 MR. ARMSTRONG: We can answer
21 questions about design standards and financial
22 assurance requirements at the next hearing.

23 MR. RAO: Thank you. That's all.

24 HEARING OFFICER FOX: That's it,

1 Mr. Rao?

2 MR. RAO: Yes.

3 HEARING OFFICER FOX: We appear to
4 have wrapped up all the questions that we had
5 mapped out for today noting that some were
6 specifically preserved and we'll have some,
7 perhaps, additional pre-filed questions in June.
8 I want to turn to a couple of quick details, one
9 of which is that I had prepared a sign-in sheet
10 for persons on which persons could indicate to
11 offer public comment.

12 I only see the participants
13 present. No indication that there has been or is
14 now anyone who wishes to offer a public comment.
15 Also, the Economic Impact Statement issue I want
16 to address very quickly.

17 Section 27(b) of the
18 Environmental Protection Act provides that the
19 Board must request that the Department of Commerce
20 and Economic Opportunity, or DCEO, conduct an
21 Economic Impact Study of proposed rules before the
22 Board adopts them. The Board must then make
23 either the Economic Impact Study or the
24 department's explanation for not conducting one

1 available to the public at least 20 days before a
2 public hearing.

3 In a letter dated November 18th
4 of 2013, Chairman Dr. Deanna Glosser did request
5 that DCEO conduct this Economic Impact Study and
6 specifically requested a response no later than
7 January 31st of 2014. The Board has to-date
8 received no response to this request from DCEO.
9 Is there anyone who would like to testify
10 regarding either the Board's request for a study
11 or the response -- lack of response from DCEO at
12 that time? Neither seeing nor hearing anyone who
13 does wish to testify, this is the point at which
14 we would customarily turn to some housekeeping and
15 procedural issues such as the filing of
16 post-hearing comments, but it seems far wiser to
17 address that at the conclusion of the June hearing
18 once we've ascertained when the transcript will be
19 available.

20 My understanding is that the
21 transcript of these two days of hearing will be
22 available within eight business days. That does
23 place us right after the Memorial Day holiday. I
24 believe that is the Tuesday and Wednesday, 27th

1 and 28th of May. Once those are in the Board's
2 hands, we will very quickly post them to our web
3 page through the clerk's office online where they
4 can be viewed in their entirety and downloaded and
5 printed out. Am I overlooking any of those
6 procedural housekeeping issues before we adjourn
7 for the day?

8 I'm not seeing any indication
9 that there are questions or clarifications.

10 Dr. Soderberg, Ms. Barkley and Mr. Armstrong
11 particularly as witnesses for the environmental
12 groups today, we thank you for your testimony and
13 questions. Mr. King, we don't mean to overlook
14 you. Your testimony and questions are appreciated
15 as well and we are grateful for the assistance of
16 all of you. We're ready to adjourn and call it a
17 day. Thank you, everyone.

1 STATE OF ILLINOIS)
2) SS.
3 COUNTY OF COOK)
4

5 I, Steven Brickey, Certified Shorthand
6 Reporter, do hereby certify that I reported in
7 shorthand the proceedings had at the trial
8 aforesaid, and that the foregoing is a true,
9 complete and correct transcript of the proceedings
10 of said trial as appears from my stenographic
11 notes so taken and transcribed under my personal
12 direction.

13 Witness my official signature in and for
14 Cook County, Illinois, on this _____ day of
15 _____, A.D., 2014.
16
17
18
19
20

21 _____
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24

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