

BEFORE THE ENVIRONMENTAL APPEALS BOARD

U.S. ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

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ORAL ARGUMENT

IN THE MATTER OF: :
: :
: :
WABASH CARBON SERVICES, LLC, : Appeal No.
: UIC 24-01
Permit No. IN-165-6A-0001 :
Permit No. IN-167-6A-0001 :
: :
:

Wednesday,
October 23, 2024

The above-entitled matter came on for
hearing, pursuant to notice, at 1:30 p.m. EDT

BEFORE:

THE HONORABLE AMMIE ROSEMAN-ORR,
WENDY L. BLAKE, and AARON P. AVILA
Environmental Appeals Judges

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ALSO PRESENT:

KATIE SPIDALIERI, U.S. Environmental Protection
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P-R-O-C-E-E-D-I-N-G-S

(1:30 p.m.)

MR. CORTES: All rise. The Environmental Appeals Board of the United States Environmental Protection Agency is now in session for oral argument in the matter of Wabash Carbon Services, LLC, UIC Permit Appeal Number 24-01. The Honorable Judges Aaron P. Avila, Ammie Roseman-Orr and Wendy L. Blake presiding.

Please turn off all cell phones. No recordings of these proceedings is allowed. Additionally, for any of you in the courtroom, please do not log onto the Zoom link for the argument as this can cause or create audio issues. Please be seated.

JUDGE ROSEMAN-ORR: Thank you, Mr. Cortes. Good afternoon and welcome. We're here today to hear oral argument in a petition for review of two permits for carbon injection and sequestration wells under the Underground Injection Control program.

The Petitioners are Andrew Lenderman,

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1 Ben Lenderman, Floyd Lenderman and Jessie
2 Lenderman. The permits were issued by EPA Region
3 5 to Wabash Carbon Services under the Safe Drinking
4 Water Act.

5 We'll start with a few logistics. So we
6 have allocated 40 minutes total for this argument
7 and we will proceed as follows. The Petitioner will
8 go first. We have allocated 20 minutes for
9 Petitioners' argument. And Counsel may reserve up
10 to ten minutes of that time for rebuttal.

11 Second, we will hear from the Permit
12 Issuer, EPA Region 5, which has been allocated 15
13 minutes. And then we'll hear from Wabash Carbon
14 Services which has been allocated five minutes. If
15 the Petitioners reserve time for rebuttal we will
16 hear that last. The Clerk of the Board will keep
17 track of time.

18 We have a court reporter here today who
19 will be preparing a transcript of today's
20 proceeding. It is critically important that the
21 court reporter be able to hear everything that is
22 said, so we'll ask Counsel to please speak clearly

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1 and directly into the microphone. And sometimes
2 that means you have to lean in a little bit.

3 The completed transcript will be placed
4 on the Board's website under this docket for this
5 case.

6 The purpose of oral argument is to assist
7 the Board in our deliberations of this matter. As
8 provided in the Board's order scheduling this oral
9 argument we would like Counsel to focus primarily
10 on whether Region 5 erred in approving a ten-year
11 post-injection site care plan.

12 It's safe to assume we have read the
13 briefs and we're familiar with the record in this
14 matter. So now we would like for each of the Counsel
15 to introduce yourselves. Please state your name
16 for the record and who you represent. And for
17 Petitioners' Counsel, if you could for the record
18 state how much time you're reserving for rebuttal.

19 MR. HARVEY: Yes, Your Honor. Shane
20 Harvey here on behalf of Petitioners, the
21 Lendermans. And we will reserve five minutes for
22 oral argument.

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1 JUDGE ROSEMAN-ORR: Thank you.

2 MR. HARVEY: Rebuttal, excuse me.

3 MS. URBAN: Thank you, hi. Good
4 morning, Judge Ammie Roseman-Orr. Amanda Urban on
5 behalf of EPA Region 5, the Permit Issuer. And I
6 have with me today.

7 MS. SPIDALIERI: Katie Spidalieri,
8 EPA's Office of General Counsel.

9 JUDGE ROSEMAN-ORR: Thank you.

10 MS. MCGRATH: Hi, good afternoon. I'm
11 Kerry McGrath for the Permittee, Wabash Carbon
12 Services.

13 JUDGE ROSEMAN-ORR: Thank you. Okay,
14 Counsel, please make sure that your microphones at
15 the tables are turned off for the rest of the
16 argument. And, Mr. Harvey, when you're ready
17 please begin.

18 MR. HARVEY: May it please the Board,
19 good afternoon again, I am Shane Harvey here on
20 behalf of the Lenderman Family, the Petitioners in
21 this matter. Some of whom, I believe, are joining
22 us by Zoom today. And they've asked me to convey

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1 their appreciation for the Board granting oral
2 argument in this case. They greatly appreciate it,
3 as do I.

4 The Lendermans, as we point out in our
5 briefs, are farmers. They have farmed for many
6 generations the land sitting above the proposed
7 injection zone for this carbon sequestration
8 project.

9 They and their neighbors in the farming
10 community have serious, and I think rational
11 concerns, about this project. And we don't mean by
12 suggesting that that the EPA was insincere in its
13 efforts, we're not saying that. We are not saying
14 that the Permittee was insincere in its efforts. But
15 I think their concerns are rational because this
16 technology is just so new.

17 And I think the petitioner, and I'm
18 sorry, the Permittee suggests in its brief that this
19 is a tried and true technology with a long history
20 of success. That is just not the case.

21 JUDGE ROSEMAN-ORR: Mr. Harvey, can I
22 ask you a question?

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1 MR. HARVEY: Yes.

2 JUDGE ROSEMAN-ORR: In your petition
3 you have said that there is no indication in the
4 record that the information and analysis that needed
5 to be completed under the regulation was done. Can
6 you explain how that is with the amount of
7 information that is in the record for the revised
8 PISC plan, the area of review document and the
9 revised permit narrative?

10 MR. HARVEY: I can, Your Honor. I'm
11 somewhat handicapped because our case is that there
12 is an absence of information in the record. But we
13 think our duty, under this Board's, or EPA's duty
14 rather under this Board's decision in the FutureGen
15 Industries case, is to adequately explain its
16 rationale and support its reasoning in the record.

17 When we look at the record we don't see
18 that explanation. We don't see their rationale.
19 We do see some information submitted by the
20 Permittee, Wabash, suggesting that all ten factors
21 under this rule have been examined and there is
22 substantial evidence of each. But we see nothing

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1 in the record where EPA says that it agrees. That
2 it found the information to be substantial.

3 The requirement under the rule, 146.93,
4 Your Honor, is that there must be substantial
5 evidence in the record that there will be no
6 endangerment to underground sources of drinking
7 water. EPA does not make that explicit finding that
8 there was substantial evidence of each of the ten
9 criteria and approve compliance with the rule.

10 JUDGE AVILA: So under your view, I just
11 want to make sure I'm clear on this, what exactly
12 would the Region need to find that it did not find
13 in your view?

14 MR. HARVEY: I think the Region was
15 required to expressly walk through each of the ten
16 categories of information required by the rule and
17 explain how there was substantial evidence of each
18 that had been submitted by the Permittee and how each
19 piece of those, each of those ten elements of
20 evidence met the requirements of the rule. How each
21 of those ten elements have been met to show that
22 there was substantial evidence demonstrating that

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1 there should be a deviation from the rule's normal
2 requirement of 50 years. I don't see that done.

3 And let me say this. That the EPA does
4 know how to do that. If the Board will look at
5 Attachment 5 to EPA's response brief, there was a
6 technical review letter.

7 Earlier in this matter, the Permittee had
8 suggested a four-year period for post-injection
9 site care. The EPA looked at the information that
10 was submitted, walked through the factors and said,
11 we don't find this sufficient. It is deficient in
12 the following ways. So they know how to do it.

13 JUDGE ROSEMAN-ORR: Can we go back for
14 just a second --

15 MR. HARVEY: Yes.

16 JUDGE ROSEMAN-ORR: -- to what you were
17 saying, that the regulation requires. Is it your
18 position that the regulation says that the Region
19 needs to go through every one of those factors that
20 are in, or that they need to review the presentation
21 of those factors from the permit applicant and then
22 make a conclusion that a shorter duration PISC plan

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1 is appropriate and will not endanger underground
2 sources of drinking water?

3 MR. HARVEY: Thank you for that
4 question, Your Honor. I think it allows me to
5 clarify something that was raised in the briefs.
6 We are not suggesting in any way that the EPA has
7 to gather data or conduct analyses. Just to be
8 clear, there was some dispute in the briefs on that
9 point.

10 The rule clearly says that the owner or
11 operator submits the data and information. What we
12 are saying is the Agency is then required, pursuant
13 to the rule, to walk through the ten factors to
14 assure the public and themselves that each factor
15 has been analyzed. And there is substantial
16 evidence of each. That's what we find lacking in
17 the record, Your Honor

18 JUDGE BLAKE: But -- Counsel, I'm sorry.
19 The response to comments document does address the
20 PISC plan, correct?

21 MR. HARVEY: It does. Yes, Your Honor.

22 JUDGE BLAKE: So are there specific

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1 criteria in section 146.93(c) that you believe the
2 Region failed to address, and if so, which criteria
3 are those?

4 MR. HARVEY: Your Honor, the only one
5 that I know that they considered and addressed for
6 certain, is the first criterion which is
7 computational modeling. In response to comment 10
8 in the record you will see that they specifically
9 said, we've looked at the modeling and it appears
10 to be on point. They don't discuss the other nine
11 factors.

12 That is our issue here on appeal. That
13 there is no evidence one way or the other whether
14 they considered these other nine elements. And I
15 think --

16 JUDGE BLAKE: Can I stop you there. So,
17 some of the other elements, you know, do relate to
18 issues such as, you know, the conduits, and
19 pathways, fractures. So there is a lot of
20 information in the response to comments about the
21 computational model. And I didn't see any
22 challenge in your petition to the inputs or the

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1 assumptions in that model.

2 The Region focuses in the response to
3 comments on the lack of faults, fractures in the
4 confining zone. So I just want to make sure, your
5 position is they have only established a rationale
6 regarding one criteria, is that correct?

7 MR. HARVEY: That's what they explained
8 to the public, Your Honor, is only that one. To the
9 extent they addressed the other nine, we cannot tell
10 that, the public cannot tell that.

11 EPA, after the fact, does an admirable
12 job, I would say, of combing through the record and
13 trying to show that these topics were addressed in
14 some fashion. But it's unclear to us, even though
15 they were talked about, whether EPA found that the
16 evidence for each of those nine criteria was
17 substantial as required under the rule. And that
18 each of them merited a deviation from this rule.
19 Which is very important by the way.

20 This technology is very, very new. And
21 because of that the EPA was careful in establishing
22 the longest monitoring period I've seen under any

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1 regulatory program, one of 50 years. So to deviate
2 from that I think there is a reason the rule refers
3 to substantial evidence.

4 And I would also point out that the
5 notion that this technology is tried and true is
6 just not the case. Just this month the only other
7 project that has been approved for carbon
8 sequestration had a leak and stopped, injection was
9 halted by the Permittee, Archer Daniels Midland. If
10 the Board wishes it can, after the hearing, Google
11 the words Archer Daniels Midland and leak and see
12 that this technology is not tried and true.

13 JUDGE BLAKE: But Counsel, the
14 regulation, it's true, there is a 50-year default.
15 But the preamble to the regulation makes very clear
16 that it is up to the expertise of the permit issuer
17 to ascertain based on site-specific parameters and
18 variables what the appropriate period should be,
19 correct?

20 MR. HARVEY: I have no dispute with that
21 whatsoever, Your Honor. What I am saying is the
22 record is absent with facts that demonstrate that

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1 the Agency walked through each of those ten criteria
2 and found that each have been met, not just met,
3 but met with substantial evidence.

4 That is totally absent from the record.
5 That is our case.

6 JUDGE ROSEMAN-ORR: Mr. Harvey, can
7 we -- just for a second -- talk about what is in
8 the response to comments with respect to the
9 ultimate conclusion that the Region is required to
10 make?

11 In the response to comments it says there
12 was approximately 2,000 to 2,100 feet of confining
13 rock between the bottom of the lower most USDW and
14 the top of where the CO2 was anticipated to get.
15 So that's 2,100 feet of confining layers. And as
16 I read it, there is no expectation that that will
17 ever, that anything will ever make it all the way
18 up to the underground sources of drinking water.
19 And the Region did determine that.

20 So why is that not enough for the Region
21 to conclude, ultimately, that a ten-year time frame
22 was sufficient to not impose a risk of endangerment

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1 to USDW?

2 MR. HARVEY: It may be, Your Honor. But
3 the point is, they did not show their work. There
4 could have been similar facts present in the Archer
5 Daniels Midland case.

6 The point is, EPA has to wrestle with
7 the facts. They have to look at the facts you just
8 mentioned. The amount of rock between the
9 different strata. And they have to show that there
10 is substantial evidence given all the criteria in
11 the rule that this will be safe. And that something
12 less than 50 years is appropriate for monitoring
13 purposes.

14 JUDGE BLAKE: Counsel, you talked a lot
15 in your briefs about the lack of site-specific data.
16 But in the response to comments, and various other
17 record documents, the Region points to various
18 places where the Permittee addressed the factors in
19 the regulation, in paragraph c, using site-specific
20 information.

21 So did you address those responses that
22 the Region laid out in your briefs, and if so, where?

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1 MR. HARVEY: In part we did, Your Honor.
2 We did not comb through the record and find every
3 instance of site-specific data and challenge that
4 in some way. But we did point out, for instance,
5 the issue of core samples.

6 Core samples, the Region admits are
7 important. And the answer on core samples is, well
8 that information will be supplied later in coming
9 years.

10 Our position, under the regulation, is
11 that's insufficient. The regulation is written in
12 the present tense if you will. It talks about
13 information that is necessary to approve a deviation
14 from the 50-year period on the front end.

15 Specifically the regulation says, at
16 the director's discretion the director may approve
17 in consultation with EPA an alternative site care
18 time frame other than the 50-year default if the
19 owner or operator can demonstrate during the
20 permitting process that the information is
21 submitted. Or is appropriate.

22 We believe relying on the notion that

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1 information will be forthcoming is insufficient
2 under the rule.

3 JUDGE BLAKE: But I thought the record
4 reflects that the model in fact used site-specific
5 information --

6 MR. HARVEY: I think that's fair, Your
7 Honor. I think some site-specific information was
8 used.

9 Whether all of the site-specific
10 information expressly required by the ten criteria
11 under the rule were used is unclear to us. And I
12 don't think that case is made in the record as it
13 exists. I'm not sure it was made in the briefs that
14 were submitted after the record.

15 I've read them numerous times. I can't
16 convince myself, and I've been doing this for 30
17 years, typically on the industry side that all of
18 the information is present.

19 It would have been very easy, let me say
20 this. And I know I'm short on time. It would have
21 been very easy, there were specific comments from
22 commenters, the public, saying this 50-year period,

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1 why has it been changed.

2 That was the place where the Agency had
3 a golden opportunity, it seems to me, to walk through
4 the ten criteria, to say we've received evidence
5 on all ten, the evidence is substantial, and we are
6 satisfied that this project is safe. They didn't
7 do that.

8 They're asking us now to comb through
9 the record and find if it, determine if it's in there
10 or not. I don't think that's our obligation or the
11 Lendermans' obligation.

12 JUDGE AVILA: Can I just ask a follow-up
13 on that. I mean, doesn't the revised PISC plan that
14 Wabash submitted, it goes through each of the
15 factors, right? The ten factors we've been talking
16 about for changing it.

17 So presumably the Region reviewed that,
18 so what, I'm still struggling with what more do they
19 need to do. I mean, they issued the permit, they
20 gave it a ten-year time frame. So doesn't that then
21 conclude that?

22 MR. HARVEY: I think the word presumably

1 is where we have a quarrel, Your Honor. We don't
2 know that we can only presume it or assume it. I
3 think what we're entitled to, what the Lendermans
4 are entitled to as a member of the public is a showing
5 by the EPA that they definitely considered each one
6 of those factors.

7 And not only that they're there but that
8 the evidence was substantial. The Permittee can't
9 make that decision. It can't decide that the
10 evidence was substantial enough to warrant a
11 deviation, that has to be done by the agency.

12 And there is nothing in the record where
13 the EPA says, this evidence was submitted and we
14 find it substantial to justify this deviation from
15 the period.

16 JUDGE BLAKE: How do you respond to the
17 Region's argument that's in their reply brief,
18 excuse me, that's in their response brief? They
19 state that they concluded that the ten-year time
20 frame is appropriate, and ensured non-endangerment
21 of USDWs.

22 And they also emphasized that there are

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1 at least four different points during, after this
2 ten years has been set to reevaluate the PISC time
3 frame. What's your response to that?

4 MR. HARVEY: I think future information
5 can be important under this rule. And I would note
6 that if you look to Subsection B2 of the rule it
7 normally works like this if you read the rule
8 carefully.

9 It allows the Permittee to receive its
10 permit with a 50-year time frame and then come
11 forward with evidence suggesting that that 50-year
12 time frame should be revised after the issuance of
13 the permit. But that's not what we have here.

14 We have on the front end a permit that
15 deviates from the normal 50-year standard without
16 all the information both, in our minds, in place
17 and examined and approved by the Agency.

18 JUDGE ROSEMAN-ORR: Counsel, I wanted
19 to ask you, in the Region's brief they say that the
20 only argument that you made in your petition with
21 respect to the PISC plan, was that there was no
22 indication that any of the necessary activity

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1 analysis and information gathering, that there was
2 no indication in the record that that occurred. How
3 do you respond to the Region's argument that that's
4 the only argument that you made in your petition?

5 MR. HARVEY: I think our argument is
6 broader than that. I think our argument was that
7 it was not apparent that the information was
8 submitted and considered and blessed, if you will,
9 by the Agency. There is in fact evidence that the
10 Permittee submitted information that it says
11 justifies the deviation from the 50-year period.

12 Our point is, the EPA, under this court's
13 prior rulings, has to articulate that information
14 was sufficient and that it carried the day. That's
15 what we think is lacking.

16 JUDGE ROSEMAN-ORR: And if the Board is
17 to conclude that the Region did not clearly err in
18 approving the ten-year plan, does that foreclose
19 your argument on financial assurance? In other
20 words, are they tied together?

21 MR. HARVEY: I'm sorry, Your Honor,
22 foreclose our argument on what?

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1 JUDGE ROSEMAN-ORR: On financial
2 assurance. That the financial assurance is
3 insufficient for the PISC plan. If we determine
4 that the ten-year plan is appropriate, then your
5 financial assurance argument goes away as well, is
6 that correct?

7 MR. HARVEY: I think that's true, Your
8 Honor. I think they are tied together. The period
9 of financial assurance has to match the period of
10 post-injection site care. I would concede that.

11 JUDGE BLAKE: Counsel, you don't
12 mention your APA argument in your reply brief, are
13 you dropping that argument?

14 MR. HARVEY: We are not dropping it,
15 Your Honor. It's not the focus, I will concede
16 that, of our case. I think if you have violations
17 of NEPA and violations of the Safe Drinking Water
18 Act, APA arguments flow from that. But as you saw,
19 it was a paragraph in our initial brief, it's not
20 our focal point.

21 JUDGE BLAKE: Okay.

22 JUDGE ROSEMAN-ORR: All right, thank

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1 you very much, Mr. Harvey.

2 MR. HARVEY: Yes, thank you, Your Honor.

3 JUDGE ROSEMAN-ORR: We will now turn to
4 Region 5. Mr. Cortes, can you tell us how much time
5 we went over?

6 MR. CORTES: An additional three
7 minutes.

8 JUDGE ROSEMAN-ORR: Thank you. So we
9 will add three minutes to the Respondents' time.

10 MS. URBAN: Good afternoon, Judges, of
11 the Environmental Appeals Board. May it please the
12 Board, my name is Amanda Urban and I'm representing
13 Region 5 in this appeal of an Underground Injection
14 Control or UIC permit.

15 The Region exercised its considered
16 judgment in issuing this Class VI permit to Wabash
17 Carbon Services. And the administrative record
18 contains the requisite demonstration under the law
19 that the ten-year post-injection site care closure
20 plan, or PISC as you've referred to it, time frame
21 is appropriate and ensures non-endangerment of what
22 are known as underground sources of drinking water,

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1 or USDWs.

2 JUDGE ROSEMAN-ORR: Ms. Urban, can you
3 start with where in the record we can see the
4 Region's considered judgment?

5 MS. URBAN: Yes, absolutely. The
6 Region's justifications or reasons for approving
7 the ten-year time frame are contained throughout
8 the record. You've noted a few of the documents
9 already. The PISC plan itself, the technical
10 review letter, the internal review memorandums, the
11 response to comments, among many more.

12 That justification is primarily in
13 scientific and technical terms. It's easy to
14 understand why that's the case when you revisit the
15 alternative PISC regulations in this case and you
16 properly understand the Region's role here.

17 So the Region may approve a PISC time
18 frame when a demonstration is submitted to the
19 region that shows that it's appropriate and will
20 ensure non-endangerment of USDWs. It is --

21 JUDGE AVILA: Sorry to interrupt. But
22 I -- let's just drill down on some of those documents

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1 that you have identified.

2 MS. URBAN: Sure.

3 JUDGE AVILA: In the technical review
4 letter, Part G.4, which is specifically on the PISC
5 plan, the Region specifically said that the 4-year
6 initially proposed period is, inadequate for the
7 collection of data regarding the long-term
8 stability of the CO2 and pressure front and to
9 validate/calibrate the model.

10 So, where do I go to see where that
11 comment was addressed by Wabash?

12 MS. URBAN: So, if I'm looking at the
13 correct part of the TRL, it then goes on to reference
14 Figure 13 under Page 22 of the area of review
15 narrative. So if you take a look at Wabash's
16 revised submission of the area of review narrative
17 on Page 22, you can see exactly how that was
18 addressed.

19 And I actually think this, in
20 particular, is a very helpful, simplistic summary
21 form of the Region's considered judgment here. So
22 this resubmission graph shows the extent of the

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1 plume growth. And it shows that the modeling
2 determined the plume would continue to grow for the
3 first 22 years. So that's 12 years of injection,
4 and then ten years post-injection.

5 And you can see how that graph just
6 levels off. So the Region did not just look at --

7 JUDGE ROSEMAN-ORR: I think I'm not
8 looking at the place that --

9 MS. URBAN: Oh.

10 JUDGE ROSEMAN-ORR: -- you've
11 identified.

12 MS. URBAN: Sorry.

13 JUDGE ROSEMAN-ORR: Can you tell us
14 where to find it again?

15 MS. URBAN: Yes. Sorry. Page 22 of the
16 revised area of review. Which is what's referenced
17 by Judge Avila's portion of the TRL.

18 JUDGE BLAKE: Wait, so Counsel, what you
19 are saying in response to Judge Avila's question
20 is that Page 13 of the TRL, Section G1 through 4
21 titled, post-injection site care and site closure
22 plan, has four objections, or noted deficiencies.

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1 And you're saying that Page 22, the graph, addresses
2 all four of those?

3 MS. URBAN: No. Sorry, the one he
4 pointed to. He had asked about Number 4.

5 JUDGE BLAKE: Okay.

6 MS. URBAN: And so Number 4 is
7 referenced back here. And I do think this is an
8 important point here in the record to look at because
9 it shows that the Region considered all points in
10 time for the PISC.

11 The Region considered what a PISC would
12 look like year one post-injection all the way to
13 year 50, which is the default in the regs. So it
14 wasn't as if the Region only looked at those first
15 ten years post-injection. Data and modeling was
16 done the full 50 years out.

17 JUDGE AVILA: I'm sorry to interrupt,
18 but I've been looking at the original AoR at Page
19 21 to 22 and it appears to me to be identical to
20 what's on Page 21 and 22 of the revised AoR.

21 MS. URBAN: I apologize because I don't
22 have the original in front of me at the moment to

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1 look at.

2 JUDGE AVILA: Oh, well then never mind.

3 I guess let me move on to a different --

4 JUDGE ROSEMAN-ORR: Well --

5 JUDGE AVILA: Oh, go ahead.

6 JUDGE ROSEMAN-ORR: -- I have a
7 follow-up to that. So when we look at the original
8 AoR, the original PISC plan and the original
9 narrative, and then we look at the revised, as you
10 suggest in your brief that we should do, and we
11 compare.

12 MS. URBAN: Yes.

13 JUDGE ROSEMAN-ORR: There is very
14 little difference. Particularly in the PISC plan.
15 And the only difference between those two documents
16 is that the number 10 was changed to the number 4,
17 is that correct? They're dated the same, same
18 title. They're virtually the same except for that
19 number change, is that correct?

20 MS. URBAN: No, that shouldn't be the
21 case. The differences that do exist are material
22 and important and go directly to the criticisms that

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1 the region made in the TRL.

2 JUDGE ROSEMAN-ORR: So specifically to
3 the statement by the Region that a four-year PISC
4 would be an inadequate amount to collect data on
5 the long-term stability of the project and to
6 validate and calibrate the model. Where is the
7 response that explains how many years are necessary
8 to validate and calibrate the model or the response
9 anywhere that says that ten years is an appropriate
10 place?

11 MS. URBAN: So the response is within
12 the data itself. And so that's where it is more in
13 a technical and scientific language as I was saying.
14 And so the response is shown by the graph here that
15 demonstrates that the mark at which stabilization
16 will occur is that 22 years. The ten years
17 post-injection. Whereas the four years you can see
18 that the graph is still climbing.

19 JUDGE AVILA: I'm sorry, but the
20 technical review letter says that figure 13, page
21 22 of the AoR narrative shows the model does not
22 predict asymptotic front readings until after year

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1 20. And it shows growth in the model through year
2 62. Please address these issues in order to
3 support, in order to further support a PISC period
4 of less than 50 years.

5 MS. URBAN: Yes. So one other place we
6 could look to would be Wabash's response letter to
7 the TRL --

8 JUDGE AVILA: Okay.

9 MS. URBAN: -- where they provided a
10 narrative response, as well as a resubmission --

11 JUDGE ROSEMAN-ORR: Is this the one that
12 was characterized as being 191 pages of analysis
13 and explanation?

14 MS. URBAN: I'm not sure it would have
15 been characterized that way. I don't recall the
16 length of Wabash's response off the top of my head,
17 but they did address quite a few technical issues
18 in that response.

19 JUDGE AVILA: Is this A.R. 71?

20 MS. URBAN: I apologize as you know the
21 record is voluminous here due to all the analysis
22 that was done. Yes, that would be A.R. 71.

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1 JUDGE AVILA: Okay. The table of
2 contents of that document seem to track the
3 numbering of the technical response letter.

4 MS. URBAN: It should.

5 JUDGE AVILA: And when I get to G, which
6 is post-injection site care place, G1, G2, G3, G4
7 are all on Page 95. And when I turn to that, the
8 pages are blank.

9 MS. URBAN: The numbered pages, are they
10 just --

11 JUDGE AVILA: In fact, I'd say about 100
12 pages of this document are blank.

13 MS. URBAN: Can I have a moment to confer
14 with the Permit Writer? I remember that he had
15 indicated the significance of the blank pages to
16 me. He's here in the room with me today. Would that
17 be acceptable?

18 JUDGE ROSEMAN-ORR: Sure.

19 (Counsel consulted with person in the
20 courtroom.)

21 MS. URBAN: Thank you. The Permit
22 Writer indicated to me that the blank pages signify

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1 that the issue was addressed by the resubmission,
2 or the modified submission, and that a narrative
3 response was not necessary. And so in those
4 instances Wabash had felt that their resubmission
5 and the rerun of the model had adequately addressed
6 the issue such that they did not need to provide
7 a narrative response but wanted to provide a blank
8 page to indicate that. And this was conveyed to the
9 Permit Writer through the email that was submitted.

10 JUDGE ROSEMAN-ORR: So I looked in the
11 other three documents, the PISC plan, the area of
12 review document and the narrative, and I could not
13 find where, anywhere where the Permit Writer
14 addressed the question of, well first of all, I think
15 Figure 13 did not change, it was identical.

16 And I don't see any response to the
17 amount of time that it would take to modify, to
18 validate and calibrate the model.

19 MS. URBAN: So --

20 JUDGE ROSEMAN-ORR: And I don't see any
21 indication of where ten years is, ten years
22 post-injection is identified.

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1 MS. URBAN: Thank you, Judge
2 Roseman-Orr. While the graph may not have changed,
3 I think it's the resubmission of changing from four
4 to ten is what's significant.

5 So here the Permit Writer in the TRL is
6 saying that four is inadequate because the pressure
7 front is still building, which is what the graph
8 shows. If you look at four years on that graph the
9 line is still clearly going straight up. Meaning
10 that the pressure front and plume are expanding.

11 And so the Permit Writer said, you have
12 to resubmit your demonstration for a time that is
13 supported by the results. And so when the Permittee
14 resubmitted their demonstration, albeit with maybe
15 this same information here, now proposing ten years,
16 that was supported by their modeling because you
17 can see in the graph that ten years post injection
18 or 22 years from the beginning of injection is where
19 the pressure had fully dissipated and the plume
20 growth had ceased such that we have that stable line
21 of non-growth from year ten all the way to year 62.

22 JUDGE AVILA: And -- sorry, go ahead.

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1 JUDGE ROSEMAN-ORR: I just, I wanted to
2 know if you can show me where the Region explained
3 that in the record?

4 MS. URBAN: The Region did not explain
5 in plain English that this graph shows a stable line
6 of ten years because the technical and scientific
7 information was here, which goes back to sort of
8 the Region's role in this, which we had touched on
9 the regulatory requirements earlier.

10 So it's the demonstration that has to
11 have the substantial evidence. And it's the
12 demonstration that must consider and document all
13 of the factors.

14 The Region then looks at all of that data
15 and evidence using our scientific and technical
16 expertise and says, are we able to reach a conclusion
17 that yes indeed this will protect or will ensure
18 non-endangerment of USDWs. And so the Permit
19 Writer had in front of him this graph, among many
20 other pieces of data and evidence that all pointed
21 to year ten. Albeit they pointed to year ten in a
22 technical or scientific fashion, which is why the

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1 Permit Writer is a geologist with significant
2 technical experience to be able to interpret this
3 submission by the Permittee.

4 Now you may ask --

5 JUDGE BLAKE: So your position is that
6 146.93(c) requires the permit applicant to complete
7 a certain demonstration. And you just look through
8 it and then you say, that's good. You don't have
9 to show your work as to why you believe the factors,
10 all the factors, were considered, is that correct?

11 MS. URBAN: Close, Judge Blake. I
12 would say that the Region does not have to redo the
13 demonstration's analysis.

14 So the Region is not required to do its
15 own consideration, similar to the FutureGen case
16 of the Board where an area of review modeling
17 submission was made. The Region verified that it
18 felt --

19 JUDGE BLAKE: Right. I'm familiar with
20 that case. So let me just give you an example.

21 MS. URBAN: Sure.

22 JUDGE BLAKE: So, in your brief, you had

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1 a couple of statements. One, you state that in
2 addressing sub-element five, roman numeral V in the
3 regulation, you say "the modeling results also
4 showed that uneven excess trapping of CO2 would not
5 occur within the predicted rates for the immobile
6 capillary phase, dissolved phase, or mineral
7 phase."

8 And I looked through all of the record
9 cites that you gave and I could not find that
10 conclusion, unless it was an extrapolation from a
11 series of graphs. I'm just trying to understand,
12 is your analysis, with regard to Subparagraphs iv
13 and v of the regulation, where is it?

14 MS. URBAN: So I think what you're
15 getting at, Judge Blake, is where is there a plain
16 English explanation. And you're correct that most
17 of the record is in a technical and scientific
18 language.

19 However, typically the Region does not
20 translate technical and scientific information
21 into more of a plain English explanation unless it
22 is raised in the comments. And here the Region only

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1 received very generalized questions about the PISC,
2 not even questions, just statements that said ten
3 years is too short, 50 years should be the time.

4 And most of those criticisms were
5 directed at the modeling. The vast majority of the
6 comments --

7 JUDGE BLAKE: I got to stop you again,
8 sorry.

9 MS. URBAN: No problem.

10 JUDGE BLAKE: A.R. 507 says, how did the
11 EPA determine that ten years was a sufficient time
12 to monitor the wells after filling of the wells
13 stops. So how? How did it come up with that
14 explanation, because you tell us on Page 34 of your
15 response brief that "there is a direct one-to-one
16 match up on the objections raised by the Region and
17 all of the re-submissions provided by Wabash."

18 And what I am struggling with is where
19 all those responses are in a way that I can follow
20 and show and see the Region's considered judgment?

21 MS. URBAN: Yes. So the comments that
22 we received did ask for an explanation of the

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1 Region's approval of the ten-year, but those
2 comments were all within the context of a general
3 critique, or critiques of the modeling.

4 And so the Region's response in their
5 response to comments, as you'll see, gave a very
6 summary digestible explanation of the model and of
7 the support for the ten-year period as opposed to
8 diving into the details of every single element.
9 And under this Board's precedent, where a comment
10 lacks specificity or precision, the Permit Issuer
11 can have a similarly tempered obligation to respond.

12 And so because the PISC time frame was
13 not raised anywhere near, not even that level of
14 detail, but none of the other factors even were
15 raised in relation to the PISC in a general way.

16 JUDGE ROSEMAN-ORR: Can I ask you where
17 in the, where would the public have found that the
18 factors had been addressed and decided?

19 Was it mentioned in the fact sheet or
20 was it mentioned anywhere in the permit or, how would
21 the general public have been able to raise those
22 questions during the public comment period?

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1 MS. URBAN: I think the easiest place
2 would have been in the revised PISC itself, which
3 has big headings that state the regulatory cite and
4 then state what the factor is in somewhat plain
5 English. And that document I think is relatively
6 short and digestable.

7 And so, it walks through each of the
8 elements. And so if the public was concerned about
9 the geology characterization and it being
10 problematic for ten years they could have said, you
11 know, what's going on here.

12 JUDGE ROSEMAN-ORR: So they would have
13 needed to ask to go and get the record and get the
14 PISC to know that there was a 50-year default and
15 to know what the analysis was to get less than 50
16 years?

17 MS. URBAN: Well and the fact sheet does
18 mention the ten-year. It does discuss, say that
19 there is going to be a ten-year post-injection
20 monitoring. But yes, certainly --

21 JUDGE ROSEMAN-ORR: So it does mention
22 that there were factors to be considered or --

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1 MS. URBAN: No. As a typical fact sheet
2 it is very high level, yes. And so the
3 administrative record, the document entitled PISC
4 would have been the document to look at. The PISC
5 plan itself is attached to the permit, and was also
6 available upon public notice. So looking to the
7 PISC plan itself.

8 And those documents are all readily
9 available. And the Region provides many ways to
10 access them consistent with environmental justice
11 standards of the Agency.

12 JUDGE AVILA: I'm sorry, you just said
13 the PISC plan is attached to what?

14 MS. URBAN: So the final PISC plan, not
15 the administrative record document, but the
16 requirements the Permittee must actually follow is
17 an attachment to the permit.

18 JUDGE AVILA: To the permit?

19 MS. URBAN: Yes.

20 JUDGE AVILA: So the final permit?

21 MS. URBAN: And the draft --

22 JUDGE AVILA: And the draft, okay.

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1 MS. URBAN: Yes.

2 JUDGE AVILA: And I'm sorry to belabor
3 this, but I feel like I'm just, I'm either reading
4 too much into something or I need some
5 clarification --

6 MS. URBAN: Yes. No problem.

7 JUDGE AVILA: The technical review
8 letter again says, the model doesn't predict -- a
9 word I can't pronounce -- front readings until after
10 20. Year 20. And it shows -- and this is the part
11 I'm struggling with -- and shows growth in the model
12 front through year 62.

13 So that, to me, sounds like the plume
14 is growing through year 62. And it says, please
15 address these issues in order to support a PISC
16 period of less than 50 years.

17 MS. URBAN: Yes. So I think that, so the
18 first part -- there is two pieces there. So, that
19 it doesn't predict the asymptotic pressure readings
20 until after year 20. That's what we talked about,
21 how the growth continues until 22 and then flattens
22 out.

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1 The second thing that's being addressed
2 there is, it shows growth through 62. That would
3 be this little uptick that you see at the end, here,
4 on the graph, I believe. And the caption here on
5 Figure 13 addresses that uptick and explains it.
6 And so if you look --

7 JUDGE AVILA: I thought -- I -- the
8 caption -- sorry. Let me get to this.

9 MS. URBAN: No problem.

10 JUDGE AVILA: So I've got Figure 13, the
11 final.

12 MS. URBAN: Yes. So there is two places
13 here that that's addressed. The caption here
14 explains the late uptick in the plume radius after
15 stabilization is due to coarseness of the outer grid
16 cells. And Wabash in their response to the TRL, on
17 Page 79 of that, did specifically address this
18 issue. And I'll just quote it so you do have to turn
19 to it.

20 But Wabash stated that the increase in
21 the plume distance shown as occurring is due to
22 increasing cell size away from the center of the

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1 model domain. And that these increases happen when
2 Co2 concentration increases from .99 percent to one
3 percent. And they went on to explain that slight
4 uptick and why it was not actually an uptick in
5 growth.

6 JUDGE ROSEMAN-ORR: So could you
7 explain that in plain English? What does it mean --

8 MS. URBAN: Sure.

9 JUDGE ROSEMAN-ORR: -- that the cell
10 size is getting larger?

11 MS. URBAN: Yes. Essentially what it
12 means is that the model has a threshold where the
13 Co2 is so minimal that it's almost undetectable.
14 It's non-significant. And that threshold is one
15 percent and so it doesn't actually even record a
16 reading below that.

17 But then once it hits one percent it
18 triggers a recording in the model and so it looks
19 like a growth, but it's actually just a change from
20 .99 to one percent. And that's what Wabash's
21 response here says, in a way that a technical and
22 scientific permit writer easily would understand.

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1 JUDGE ROSEMAN-ORR: So is it fair to say
2 that at the periphery of the model it's not as exact
3 or not as, you can't tell what's going on at the
4 periphery of the model?

5 MS. URBAN: No, not at all, we know
6 exactly what's going on. There was a .01 percent
7 increase in the Co2 concentration as it stabilized,
8 as it reached equilibrium. In the same way that it
9 had gone from .098 to .99 it would be a very slight
10 insignificant change.

11 And that change is shown here but it's
12 not, it's not significant. And that's what Wabash
13 is explaining here, that it is truly a .01 percent
14 change.

15 JUDGE AVILA: Is that same language you
16 pointed to in the revised AoR for Figure 13, that
17 exact same language was in the original AoR.

18 MS. URBAN: The caption?

19 JUDGE AVILA: Yes.

20 MS. URBAN: Right. So it's explained
21 in sentence, and the TRL was saying give us more,
22 explain more. You know, the caption says this but

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1 this uptick is concerning to us, we want to make
2 sure there is not a growth occurring here at the
3 end of this 62 years and so we need to do, provide
4 more. Which is what Wabash did on Page 79 of their
5 response letter.

6 JUDGE AVILA: Page 79 of the response
7 letter?

8 MS. URBAN: Of the Wabash response
9 letter. And yes, I understand that the material
10 here is very technical and scientific and is
11 throughout the record, but one that only
12 demonstrates how thorough both the Permittee and the
13 Region were here. And two, how general the comments
14 were. And because of the level of the technical and
15 scientific information the Region did its best to
16 translate this very dense administrative record
17 into digestible pieces for the public in the
18 response to comments --

19 JUDGE BLAKE: Counsel, can you talk for
20 a moment about response to comments number 10.

21 MS. URBAN: Sure.

22 JUDGE BLAKE: So Comment 10, the

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1 Region's summary of that says, numerous comments
2 were received --

3 MS. URBAN: Yes.

4 JUDGE BLAKE: -- regarding the adequacy
5 of the post-injection period, the site closure
6 process and what happens after closure. So, and in
7 your response you state that the results -- "the
8 results of the computational modeling demonstrate
9 that the WCS carbon dioxide plume and pressure front
10 will become stable vertically and horizontally 10
11 years post injection. Therefore, EPA has
12 established an alternate PISC period of 10 years
13 post-injection."

14 And then the response states, based on
15 these factors.

16 So, how did the region determine that
17 ten years was sufficient in light of the various
18 factors in 146.93(c)(1)?

19 MS. URBAN: That is because all of the
20 data and evidence on those factors pointed to ten
21 years.

22 So, go ahead, Judge Roseman-Orr.

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1 JUDGE ROSEMAN-ORR: Can I ask a
2 clarifying question on that? So in, one of the
3 things that is supposed to be considered is the
4 predicted maximum lateral extent of the plume. And
5 vertical extent of the plume.

6 And what we're seeing in the response
7 to comments is the Region determined that ten years
8 was when it was going to become stable vertically
9 and horizontally. We can maybe get into, in a
10 minute, what the difference is between cessation
11 and stability. I think the reg says cessation, but
12 the reg uses stability. I mean the region uses
13 stability.

14 But so far you've pointed us to Figure
15 13 as the reason for the ten years. But I wanted
16 to ask, when I look at the revised PISC, the
17 narrative part of it, not the graphs, on Page 10
18 and 25, the PISC talks about lateral stabilization
19 two years post-injection. And when I look at the
20 graphs, there are graphs for zero years and two
21 years. But I didn't see a graph that's reflecting
22 ten years post-injection.

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1 And if I look at the revised AoR at 21,
2 the narrative language there says the AoR is
3 expected to reach its maximum lateral extent 16
4 years after injection, which will be four years.
5 So we've got two, four, and I believe there is also
6 in the AoR, it says the maximum lateral extent is
7 reached at the end of the simulation period.

8 And the region, you know, they saw that
9 and asked for, in the TRL, they recommended that
10 this section is clarified regarding the timing of
11 the maximum lateral extent cessation. So where is
12 the clarification of when the plume will reach its
13 maximum extent?

14 MS. URBAN: So I think that's clarified
15 in a number of ways. So yes, I think the Figure 13
16 is incredibly helpful because it brings together
17 both pressure and plume movement. So you talked
18 about a few different factors here, pressure being
19 element, I believe 3, and plume growth being Element
20 2 in the regulations.

21 And both of those have horizontal and
22 vertical elements to them. And so just because one

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1 portion might reach stabilization sooner than
2 another, everything here is intertwined. All of
3 these elements sort of impact and affect one another
4 such that if there is, you know, for instance the
5 pressure dissipates five years post-injection, but
6 that doesn't mean the plume growth ceases.

7 So I'm not sure I'm fully understanding
8 exactly which piece of that you're concerned about.
9 I'm sorry.

10 JUDGE ROSEMAN-ORR: The part that I'm
11 concerned about is that I see, in plain language,
12 that the maximum extent of the Co2 plume, lateral
13 stabilization, is two years. Another place it says
14 four years. And in one place it says, at the end
15 of the simulation period. And then Figure 13 is
16 what you're pointing to for ten.

17 So we're talking in all of those
18 instances that we gave you, about the maximum
19 lateral extent of the plume. And so I'm --

20 MS. URBAN: Yes.

21 JUDGE ROSEMAN-ORR: -- I don't know
22 where to go to find the explanation that you were

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1 giving --

2 MS. URBAN: Yes.

3 JUDGE ROSEMAN-ORR: -- that clarifies.

4 MS. URBAN: Yes. Yes. So perhaps I'm
5 just misusing terms here today.

6 So stabilization I don't think
7 necessarily means cessation of growth, as you were
8 pointing out. And so the graph is really what shows
9 us where it's both stabilized and growth has
10 stopped. Such that the plume will stay in this
11 spot, in this location for years and years to come.

12 And so if you turn, you can see it, it's
13 also helpful to look at the trapping results that
14 immediately follow Page 22 in the revised area of
15 review. So if you look at those graphs you can see
16 each of the years charted for the reactions that
17 will be occurring between the Co2 and the rock layers
18 and the injection zone, and the trapping that
19 occurs. And you can see that the graphs for years
20 22, 42 and 62 are all the same because there is no
21 longer a trapping reaction occurring.

22 So from that point forward the plume will

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1 stay in place and remain trapped in the injection
2 zone because those geochemical reactions will all
3 have occurred. This is on Page 23 of the Revised
4 AoR. So, the page immediately following the graph
5 that we've been looking at.

6 And so this is what I mean by there are
7 a significant number of pieces of the record such
8 as just these two easy examples where all of the
9 data and evidence is pointing to year ten, this is
10 it, here's the spot, everything here supports it.
11 And that is what is causing the Permit Writer to
12 conclude ten years is appropriate.

13 JUDGE ROSEMAN-ORR: So I know you're
14 saying that it all supports ten, but I guess I'm
15 just not seeing it. And I'm looking at Page 25 of
16 the revised PISC submitted after the TRL. And it
17 says, as displayed in Figure 7 the Co2 plumes reach
18 their maximum spatial extent at year 14 two years
19 post-injection. So I'm not sure how that's
20 pointing to ten years post-injection. So when you
21 say everything points to ten, I don't see that
22 everything points to ten.

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1 MS. URBAN: So this is a pressure front
2 prediction as opposed to a plume movement
3 prediction. So here when we're talking about plume
4 stability with regard to the pressure. So as I
5 mentioned earlier, these elements all impact one
6 another.

7 So here, even if the pressure readings
8 are showing that this would be the point at which
9 it would be at its maximum spatial extent, it doesn't
10 mean that it's not impacted by other things. Like
11 the trapping reactions, for example, that are
12 occurring between the Co2 and the geology.

13 And I think, you know, this conversation
14 really highlights why it's important for the Region
15 to have deference in this case for its technical
16 review and technical analysis on these issues
17 because we are dealing with extremely lengthy,
18 extremely dense submissions that the permit writer
19 is giving to the agency that are very well
20 documented, and certainly well supported in the
21 record. But to be second guessing the agency at
22 this level --

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1 JUDGE BLAKE: Counsel, can you go back
2 to my earlier question?

3 MS. URBAN: Sure.

4 JUDGE BLAKE: So I was focused on the
5 response to comments, page 18.

6 MS. URBAN: Yes.

7 JUDGE BLAKE: And, as I read it, there
8 is one fundamental sentence that says that the plume
9 and pressure front will become stable, vertically
10 and horizontally ten years post-injection. And
11 then you say, therefore ten years is okay. And then
12 you say, based -- or the Region says, based on these
13 factors.

14 What factors? Just that specific point
15 about the stability of the pressure front?

16 You said stability did not mean
17 cessation, is that right? Did I understand you
18 correctly there?

19 MS. URBAN: It doesn't necessarily. It
20 depends on how it's being used. Here, I think it
21 was meant to be used in a plain English way for the
22 public. So, yes. Here, it's -- this is us

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1 translating at a very high level a very technical
2 concept. And so the comments about the PISC had
3 really focused on the modeling.

4 People were very -- like, were very upset
5 about modeling and the inability to trust the
6 modeling. And so our response about the PISC
7 likewise focused on the modeling.

8 But by speaking of the pressure front
9 and the plume and the model here, it's also
10 encompassing all of the other elements because that
11 pressure front and that plume prediction and the
12 modeling doesn't work unless the characteristics
13 of the geology are taken into account. Which they
14 were. It doesn't work unless trapping is also
15 considered, which it was. It requires us to know
16 where the nearest USDW is located, which it was.

17 And you'll see that many of the other
18 elements are discussed in the response to comments
19 as things that were analyzed and things that were
20 considered by the region. They're just not
21 specifically discussed with regard to the PISC
22 because that did not seem to be the concern that

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1 the public was raising.

2 And so in an attempt to give the public
3 a very digestible summary understanding of the
4 region's approval of the PISC time frame here, we
5 focused on the modeling concern and two of the major
6 elements of the model.

7 JUDGE BLAKE: Yes, I understand your
8 position. So, Counsel, just, you know, you
9 mentioned that the Board will typically defer to
10 a permit issuer's technical expertise as long,
11 right, as the permit issuer adequately explains its
12 rationale and supports its reasoning in the record.

13 So is your position that under this
14 regulation, 146.93(c)(1), the Region just needs to
15 make sure everything is there, check all the boxes
16 and say approved?

17 I'm struggling. You mentioned the
18 trapping, sub-elements iv and v of the regulation,
19 I really, short of your plain language recitation
20 in the brief, your response brief, I am having a
21 hard time really understanding how the Region
22 considered those two factors and how it, in any way,

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1 relates to the appropriateness of the ten years.

2 MS. URBAN: Yes. Thank you, Judge
3 Blake. I think the issue here is that the
4 regulatory scheme is very dense and technical in
5 nature. So short of giving, you know, an academic
6 paper on what exactly the regulations mean, the
7 Region, you know, was doing its best to interpret
8 the data it was given without, you know, explaining
9 the basic concept of what is trapping when that
10 didn't seem to be at issue here in this case.

11 And so in the technical reviews there
12 was a focus on the substance of the technical
13 information submitted and the back and forth that
14 was had with the Permittee to ensure that that
15 demonstration was adequate.

16 Certainly I think it would have been
17 helpful to have a more plain language explanation
18 in the record. And that would be best practices
19 going forward, but it's not deficient.

20 And so here the Region was able to
21 provide information on each of the elements through
22 the demonstration, look at those and determine in

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1 our expertise that there was a conclusion to be
2 reached that ten years was appropriate.

3 JUDGE BLAKE: So you're saying if I look
4 a little harder in the record I will find a
5 description of the site-specific processes that
6 will result in carbon dioxide trapping, which is
7 required by the reg? And the predicted rate of the
8 trapping in the various spaces?

9 MS. URBAN: Yes. I believe in our
10 response brief we provided the citations to where
11 in the record those things are analyzed and were
12 provided by Wabash, the Permittee. I understand
13 that it is, once again, in a very technical and
14 scientific language and not in a legal or easily
15 digestible language by someone who is not an expert
16 in this area, but that is the process the class VI
17 regs envision.

18 They envision a back and forth between
19 the permit applicant and the Region on these very
20 technical issues. It's the same way it was with the
21 area of review analysis. It's the point at public
22 comment is when it comes time for the Region to take

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1 that and break it and distill it down into something
2 that the public is able to digest and raise concerns
3 about.

4 And so I think there was plenty of notice
5 to the public. It's certainly, the record has clear
6 headings despite being technical in nature such that
7 the public could have raised concerns.

8 JUDGE BLAKE: Counsel, I just had
9 another question. I just want to make sure I'm
10 clear on everything that we should be looking at.
11 Because you say in your brief on Page 30 that an
12 examination of the administrative record including
13 "the multiple exchanges between Wabash and the
14 Region" shows that the Region exercised considered
15 judgment. What exchanges are you referencing
16 there? Are you referring to?

17 There was no citation in the brief for
18 that point. Are you referring to A.R. 73, which is
19 about 190 pages of emails between 2021 and 2023,
20 or are you referring to some other exchanges?

21 MS. URBAN: That would be part of it. I
22 apologize for the lack of citation. That would be

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1 part of it. I think the TRL, and as you noted
2 earlier, the extensive response from Wabash to the
3 TRL shows --

4 JUDGE BLAKE: Just to be clear. The
5 extensive response to the TRL is A.R. 71, is that
6 right? A.R. 71.

7 MS. URBAN: I think 71 --

8 JUDGE BLAKE: The hundred blank pages
9 plus the revised PISC and --

10 MS. URBAN: Right.

11 JUDGE BLAKE: -- the revised AoR --

12 MS. URBAN: All of the revised, yes.
13 All of the revised documents, including Wabash's
14 formal response letter. Along with all of the
15 revised documents.

16 It shows the Region using considered
17 judgment. It shows that there wasn't just a rubber
18 stamping here of the submission. It shows that the
19 Region did take a thorough look and did say, does
20 the data support, does it not.

21 The very fact that we rejected the
22 original four-year proposal is significant. And

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1 then that we did not approve until the Region sought
2 a revised submission, that then was supporting the
3 new proposed time frame.

4 JUDGE ROSEMAN-ORR: But the revised
5 submission did not change.

6 MS. URBAN: And the, the submission
7 changed in the sense that it was supportive of ten
8 years.

9 JUDGE ROSEMAN-ORR: But --

10 MS. URBAN: But the modeling results did
11 not support four years, but they did support ten.

12 JUDGE ROSEMAN-ORR: So all of, so the
13 only thing that changed was the number. So all of
14 the modeling results, basically in the submission,
15 the original submission, did not support four, they
16 supported ten is what you're saying?

17 MS. URBAN: More or less. I am not sure
18 about the exact number of changes, but I will take
19 your word for it, Judge Roseman-Orr, that's the only
20 thing that changed, yes. It's because all of the
21 data and modeling results had supported ten.

22 As I noted, there were a few that could

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1 have, there could have been arguments for shorter
2 time frame. For example, the pressure dissipating
3 at five years. And so Wabash tried to put forth four
4 years and said, oh, well look, you know, two of the
5 three elements support the ten.

6 JUDGE ROSEMAN-ORR: So I asked you about
7 Page 10 of the PISC, I'm sorry, I asked you about
8 Page 25. And then you explained that that was not
9 the plume distance it was the pressure front I
10 believe is what you said.

11 On Page 10 of that same document, under
12 computational modeling results, it says, the CO2
13 distribution around each well reaches lateral
14 stabilization within the Potosi dolomite 14 years
15 after injection, two years post-cessation of
16 injection. Is that talking about pressure front or
17 is that talking about plume size? Distance.

18 MS. URBAN: I understand that to be
19 talking about distance as well. But as indicated --

20 JUDGE ROSEMAN-ORR: I'm sorry, talking
21 about distance?

22 MS. URBAN: Yes.

1 JUDGE ROSEMAN-ORR: Okay. As it lists
2 the .5 miles to the east and the .8 miles to the
3 north. But I think what's missing from that is all
4 the other factors.

5 And so while it's saying here that is
6 the distance, I don't know that that means all the
7 trapping had occurred by that point in time. Or all
8 the pressure had dissipated.

9 JUDGE ROSEMAN-ORR: Okay. Let's look
10 at --

11 MS. URBAN: Other things that would
12 effect --

13 JUDGE ROSEMAN-ORR: -- one more place.

14 MS. URBAN: Sure.

15 JUDGE ROSEMAN-ORR: In the area of
16 review on Page 22, where Figure 13 is, and in the
17 narrative right above that, I think it's the second
18 full sentence. The area of review is expected to
19 reach its maximum level, lateral extent 16 years
20 after injection begins, four years post-injection,
21 and then you have Figure 13 which you have said
22 supports ten.

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1 MS. URBAN: Yes. So here you are seeing
2 the technical term Area of Review which is
3 significant.

4 So once again I don't know that that is
5 necessarily indicative of when the PISC timeframe
6 is appropriate, and so I think the modeling results
7 themselves are much more important whereas the
8 narrative is trying to explain the larger technical
9 picture of what's going on with the Area of Review
10 overall, but if you look at the data itself it is
11 showing that stabilization drop off occurs at that
12 22-year point, that 10-year post injection.

13 So the technical language accompanying
14 it is discussing more than just those results there
15 giving a broader context and a broader picture for
16 what's going on.

17 JUDGE ROSEMAN-ORR: I want to change
18 directions for just a second. You have said a
19 couple of times that the time for these questions
20 to be raised was during the comment period, public
21 comment period.

22 40 CFR 124.8 requires that the fact sheet

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1 provide reasons why any requested alternatives to
2 required standards do or do not appear to be
3 justified.

4 Did the fact sheet in this case provide
5 an explanation for the 10-year alternative and why
6 it was justified or not justified and that it was
7 an alternative?

8 MS. URBAN: I apologize because I am
9 not -- I don't have the CFR in front of me, so I
10 am not familiar. Could you read once again what the
11 exact requirement is?

12 JUDGE ROSEMAN-ORR: The fact sheet
13 requirement is to provide reasons why any requested
14 alternatives to required standards do or do not
15 appear to be justified?

16 MS. URBAN: So at that -- So I believe
17 that's -- If the -- So, yes, if the permit applicant
18 requested alternatives to any required standards.

19 So I think that that the reg the way it's
20 written the 50 years is not a required standard.
21 So that would be if there was a required standard
22 that they were requesting to deviate from and here,

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1 while there is a default, the regs envision an exact
2 process for how EPA may grant a different period,
3 so EPA has options here. There is --

4 JUDGE ROSEMAN-ORR: So --

5 MS. URBAN: Go ahead.

6 JUDGE ROSEMAN-ORR: -- you're saying
7 that an alternative to a default is not an
8 alternative to a requirement?

9 MS. URBAN: I'm saying that it's not a
10 request to deviate from a requirement, yes, because
11 the requirement is to have a PISC timeframe and a
12 PISC plan.

13 However, you are allowed under the regs
14 to have a 50-year or to have a different period if
15 it is equally justified by the data. So in this
16 instance EPA was given, the Region was given,
17 significant data and substantial evidence to say
18 that a 10-year time was actually scientifically
19 appropriate as opposed to a 50-year timeframe.

20 JUDGE BLAKE: Could you just summarize
21 the Region's interpretation of 146.93(c) in terms
22 of the Region's role in exercising its discretion

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1 to approve an alternative timeframe?

2 MS. URBAN: Sure. So as Judge
3 Roseman-Orr noted earlier, that regulation is
4 structured very specifically such that the Region
5 is to receive a demonstration at the option of the
6 permit applicant and that that demonstration needs
7 to do a few different things.

8 It needs to consider and document ten
9 elements and it needs to then within that
10 consideration and documentation it needs to include
11 significant site-specific evidence and that
12 together the information there must meet a criteria
13 as far as, you know, quality-type checking of the
14 information, and that collective information must
15 have substantial evidence to demonstrate that the
16 project will no longer pose a risk of endangerment
17 to USDW's after "X" timeframe, whatever the
18 timeframe is that's being proposed. Here it was
19 originally four and then it was ten.

20 So the Region's role then is to review
21 everything that is before it and to determine
22 whether, in fact, the permittee has successfully

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1 demonstrated that there will not be a risk of
2 endangerment to USDWs after that ten years.

3 The Region did that here. It exercised
4 its considered judgment in reviewing. It pointed
5 out several ways to the permit applicant in which
6 their demonstration originally fell short and why
7 the data and evidence that was given did not actually
8 demonstrate that four years would be appropriate
9 and said come back to us and propose either new
10 information or a timeframe that is supported by all
11 the data and evidence that you have given us.

12 So the system went exactly how it should
13 have and the permit applicant said, okay, we
14 actually looked at what you said and we think you're
15 right, we think all the data and the information
16 that we gave you under those regulatory elements
17 supports ten years, and the Region said, yes, we
18 agree that it does and, therefore, approved and
19 incorporated the PISC plan here.

20 I think it's important to keep in mind
21 when looking at this the sort of standard, if you
22 will, for administrative records. The 7th Circuit

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1 Court of Appeals has said that in reviewing an
2 agency's action it will look to the relevant
3 evidence in the administrative record that a
4 reasonable mind might accept as adequate to support
5 the conclusion of the agency.

6 So here the Region's approval of the
7 10-year PISC timeframe meets that standard. It's
8 more than adequately supported by the relevant
9 evidence in the administrative record. The 7th
10 Circuit has said that they will not re-weigh that
11 evidence, they will not second guess the
12 fact-finding, or quibble with the agency's
13 conclusions.

14 Here the Region has done enough to meet
15 that threshold and that bar considering the
16 regulatory standard that we are working under.

17 JUDGE ROSEMAN-ORR: In your view has the
18 Region done enough to meet the standard that was
19 laid out in a long line of Board cases, but one was
20 in FutureGen, where we will defer to the scientific
21 judgment of the Region and, you know, if their
22 reasoning and their rationale is clearly understood

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1 in the record and if they have indicated the facts
2 they relied on?

3 MS. URBAN: I think here, yes, Judge
4 Roseman-Orr, the Region has done enough despite it
5 being very technical and scientific.

6 You have thousands of pages before you
7 showing all of the work that the Region did to ensure
8 that the non-endangerment finding was supported
9 here and did respond to generalized comments that
10 were concerned about the PISC timeframe here.

11 We don't have an issue here where a
12 particularized specific issue was raised and went
13 unaddressed by the Region. The Region was
14 responsive at every turn to every concern and was
15 very thorough in its review of the record, as
16 demonstrated by the many memos, many review memos,
17 and the extensive TRL and how that TRL generated
18 a voluminous response from the permit applicant
19 because it was so thorough.

20 So I think the considered judgment is
21 well documented here and, albeit while it's in that
22 technical and scientific language, given the

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1 regulatory scheme in that we don't have a public
2 participation and response to comments type issue
3 here, it is adequate.

4 JUDGE ROSEMAN-ORR: Okay. Thank you,
5 Ms. Urban. Do you have any questions?

6 (No audible response.)

7 JUDGE ROSEMAN-ORR: Okay, I think
8 that's all we have for you now. Thank you, Ms.
9 Urban.

10 MS. URBAN: Thank you.

11 JUDGE ROSEMAN-ORR: We will now hear
12 from counsel for Wabash Carbon Services.

13 MS. MCGRATH: Good afternoon. My name
14 is Kerry McGrath and I am here on behalf of the
15 permittee, Wabash Carbon Services.

16 Just zooming out for a minute, this
17 Administration has repeatedly emphasized that
18 carbon capture and storage is critical to meeting
19 our nation's climate goals, but the EPA Class VI
20 permit process has been slow to get off the ground.

21 This permit application process started
22 over four years ago and this lengthy timeframe is

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1 very detrimental to making progress on the climate
2 goals that we have.

3 This permit will enable Wabash to
4 sequester carbon dioxide that otherwise would be
5 emitted from an ammonia production facility and it
6 will support a \$2.4 billion investment to be funded
7 with a \$1.6 billion federal investment and that will
8 not only combat climate change but will also
9 increase food security.

10 This permit has been touted by EPA as
11 demonstrating that carbon capture can be deployed
12 at scale in the United States, and so the success
13 of this project and the vindication of the
14 Administration's policy turns on the prompt
15 finalization of this permit.

16 JUDGE AVILA: On that, does Wabash need
17 any other state or local permits before it can start
18 operation or is this the only -- is once this permit,
19 the UIC permit is finalized, are you ready to start
20 operating?

21 MS. MCGRATH: They would be ready to
22 begin constructing the wells as the process is laid

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1 out in the permit.

2 JUDGE AVILA: Constructing the
3 wells -- would they be ready to operate?

4 MS. MCGRATH: Well that would be a
5 timeframe that, you know, as it's laid out in the
6 permit they would have to come back to EPA and get
7 authorization for that.

8 JUDGE AVILA: Okay.

9 JUDGE ROSEMAN-ORR: Are there other
10 permits they also still need to obtain?

11 MS. MCGRATH: Sorry?

12 JUDGE ROSEMAN-ORR: Are there other
13 permit requirements, other permitting?

14 MS. MCGRATH: They have -- As I
15 mentioned, they have some federal funding and there
16 are some requirements that are associated with that
17 that they are in the process of obtaining and working
18 through, but this is the main holdup essentially.

19 Petitioners seek to use here a
20 procedural mechanism to stop the project but they
21 make no showing that the Region's technical
22 determinations were incorrect or that a 10-year PISC

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1 timeframe is insufficient.

2 I wanted to just emphasize three
3 different points today. First, the 10-year
4 timeframe is a floor not a ceiling. Remanding on
5 this basis would be premature given that the Region
6 has the ability to extend the PISC timeframe later
7 in the process.

8 JUDGE AVILA: Can I just follow up on
9 that?

10 MS. MCGRATH: Sure.

11 JUDGE AVILA: How does the financial
12 assurance work if after ten years it's determined,
13 oh, no, it's going a lot further than they thought,
14 we need to monitor it for 50 years, what happens
15 to the financial assurance then?

16 MS. MCGRATH: The financial assurance
17 has to be updated annually and so that would have
18 to account for any changes in the permit, and so
19 if the PISC timeframe is extended then the financial
20 assurance would also have to be updated to account
21 for a longer timeframe.

22 That's all part of the many different

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1 inflection points in this permit process where the
2 PISC period is re-evaluated. That happens
3 pre-injection, that happens during the operation
4 of the project as the AoR is re-evaluated every five
5 years, it happens after the cessation of injection,
6 and then it also happens prior to site closure.

7 So if at any point during any of those
8 re-evaluations the data indicate that the 10-year
9 timeframe is insufficient then there would be an
10 opportunity for the Region either on its own or at
11 the request of interested parties to require a
12 longer PISC timeframe.

13 You know, so this is purely a
14 hypothetical issue at this point. Right now the
15 data supports the 10-year timeframe and if it shows
16 later after they collect more data that that's not
17 sufficient that can be adjusted.

18 The second point I wanted to make is that
19 nothing would be gained by remanding this to the
20 Region now to simply amplify its reasoning. It
21 exhaustively sort of laid out in its brief the
22 citations throughout the record based on the whole

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1 of the record that it determined the 10-year
2 timeframe.

3 So it really would be to elevate form
4 over substance to remand that based on this issue.

5 JUDGE ROSEMAN-ORR: Can I ask a question
6 about that?

7 MS. MCGRATH: Yes.

8 JUDGE ROSEMAN-ORR: You began by
9 talking about carbon sequestration generally and
10 the push to do more of that.

11 So we have not seen very many permits
12 come through for carbon sequestration and this is
13 the first time we have seen an alternative timeframe
14 and not the 50-year default.

15 So when you say nothing would be gained
16 by remanding it to have the Region better articulate
17 its rationale, wouldn't there be something to be
18 gained for the program generally and for future
19 permitting that may or may not be coming down the
20 pike?

21 MS. MCGRATH: I think it would be a pure
22 paperwork exercise to do that and the detriment to

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1 the permittee of remanding the permit and delaying
2 would be prejudicial to the permittee and really
3 get in the way of something that this Administration
4 has focused on and prioritized.

5 I think, you know, you talked about, we
6 talked about the FutureGen case and deferring to
7 technical judgment, but I think it's also important
8 to note that even if the Region maybe could have
9 better explained itself here there is no prejudicial
10 error.

11 There were no comments that referenced
12 the factors in 146.93(c). There were no comments
13 that took issue with the Region's evaluation of any
14 of those factors, and so the Region adequately
15 explained its determination proportional to the
16 generality of the comments.

17 I just wanted to make one point, if I
18 could, just a clarification. The Petitioners
19 talked about ADM, which is certainly well outside
20 the scope of this permit process, but I think the
21 crux of this appeal is an attempt to delay or prevent
22 this project going forward.

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1 That ADM issue is obviously not before
2 the Board, but it is kind of a signal that this
3 process is working because issues were detected,
4 they had to cease injection, and they have to address
5 those issues, so it kind of is a signal of the checks
6 and balances of the program.

7 JUDGE BLAKE: Counsel, I want to talk a
8 little bit about the regulations and your
9 perspective.

10 MS. MCGRATH: Sure.

11 JUDGE BLAKE: In your brief on Pages 22
12 to 23 you state that the regulations, and I quote,
13 "certainly do not compel the Region to engage in
14 the meaningless formality of ticking through and
15 individually discussing in its response to comments
16 each of the items listed in 40 CFR Section
17 146.93(c)."

18 So what would you say the Region's role
19 is in reviewing and approving an alternative PISC
20 timeframe?

21 MS. MCGRATH: I think the Region's role
22 is to evaluate -- The text of 146.93(c) specifically

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1 frames the obligation on the owner/operator to
2 provide the information and the documentation to
3 make the demonstration.

4 The Region's role is to review that
5 information, as it did here, push on things that
6 it had questions about and then confirm that it
7 agreed with that determination.

8 It is similar I think to FutureGen where
9 the Region is not required to go back and sort of
10 redo that whole analysis and say, you know, go
11 through each factor, tick through each factor.

12 JUDGE BLAKE: But, counsel, I don't
13 think that's what Petitioner's counsel is saying.
14 They are not saying EPA should redo everything that
15 Wabash did, that's not the argument as I understand
16 it.

17 MS. MCGRATH: Well that argument, you
18 know, was not made by any commenter. I think if a
19 commenter had raised a concern about EPA's
20 consideration of each of those factors EPA would
21 have done that, but there were no references to that
22 regulation in the comments and so they just

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1 responded sort of as a whole.

2 Implicitly the back and forth shows that
3 if you take the record as a whole they looked at
4 all of the information provided by the permittee,
5 they approved the 10-year determination, and that
6 rationale is contained in the response to
7 comments --

8 JUDGE BLAKE: And I agree --

9 MS. MCGRATH: -- adequately.

10 JUDGE BLAKE: -- that we need to look at
11 the record as a whole, but, you know, our case law,
12 as Judge Roseman-Orr alluded to, is that we need
13 to ensure that the record demonstrates that the
14 Region has adequately explained its rationale.

15 And so would you just identify for us,
16 you know, the suite of materials in the
17 administrative record beyond the response to
18 comments that reflect the Region's consideration
19 of the factors in the regulations?

20 MS. MCGRATH: Yes. I mean I think it is
21 kind of the whole body of the original PISC, the
22 original AoR document, the Technical Review Letter,

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1 the permittee's response to that Technical Review
2 Letter, the revised PISC, the revised AoR, all of
3 that taken as a whole shows the information, the
4 modeling data, submitted by the permittee.

5 It shows the changes that were made
6 pursuant to the Region's comments, not just on the
7 PISC but in general, because all of that is sort
8 of tied up with the computational modeling which
9 is important, not just for the PISC plan but the
10 AoR as well, and, you know, summarized in plain terms
11 in the response to comments.

12 JUDGE BLAKE: I have a couple more for
13 you. So Judge Roseman-Orr asked -- Sorry. Judge
14 Roseman-Orr asked a few questions about the maximum
15 lateral extent of cessation.

16 MS. MCGRATH: Yes.

17 JUDGE BLAKE: What is your position on
18 that and where is it in the record?

19 MS. MCGRATH: Yes. So I think it's
20 helpful to turn back to the Figure 13 that we have
21 been discussing. There is some good language above
22 that.

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1 I want to clarify that when you think
2 about -- The maximum lateral extent is thinking
3 about, you know, the horizontal movement and then
4 there is also vertical movement, and so there is
5 discussion about, you know, I think above this
6 figure, the AoR is kind of necessarily focused on
7 just that lateral extent because that's sort of how
8 that is shown, but it does talk about how the maximum
9 lateral extent is reached four years
10 post-injection.

11 Again, there is a difference between
12 when the maximum lateral extent is reached and when
13 something is stabilized, and so it can reach a
14 maximum lateral extent but still have some movement.

15 So I think that some of these statements,
16 some are talking about the maximum lateral extent,
17 some are talking about the lateral extent of the
18 AoR remaining constant from a certain timeframe,
19 and then the vertical movement I think which is where
20 there was some concern that that goes beyond that
21 4-year timeframe is a separate, you know, metric.

22 JUDGE ROSEMAN-ORR: So just to make sure

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1 I am understanding, so are you saying that there
2 is a distinction on Page 22 of the AoR with Figure
3 13, are you saying that what's described above is
4 being four years post-injection but the maximum
5 lateral extent is different from what's described
6 in the figure below it?

7 MS. MCGRATH: No. No, Your Honor.
8 What I am saying is that there are different
9 statements throughout the record that talk about
10 these things in different terms.

11 I think this graphic shows that there
12 is some movement, I'll say, that it is not constant
13 until that 10-year timeframe.

14 JUDGE ROSEMAN-ORR: Okay. But above
15 the graph --

16 MS. MCGRATH: Yes.

17 JUDGE ROSEMAN-ORR: -- it says "Maximum
18 lateral extent four years post-injection" and
19 Figure 13 right below it says "Maximum plume
20 distance from injection," and I am looking at the
21 graph, and like you say, I see movement through
22 somewhere past 20.

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1 So to me the statement that the maximum
2 extent is four years post-injection conflicts with
3 the graph which shows closer to ten years
4 post-injection.

5 MS. MCGRATH: I think ten years
6 post-injection -- Well, first of all, I think the
7 permittee thought there was a case to be made that
8 four years was the point.

9 Obviously that was something that the
10 permittee argued for, but I think EPA was concerned
11 that there was still movement and that it was not,
12 you know, had not stabilized.

13 JUDGE ROSEMAN-ORR: And not just
14 movement but expansion, right, because this figure
15 is describing the plume distance?

16 MS. MCGRATH: Yes. You know, it's hard
17 on this graph because I think the coarseness of these
18 cells, meaning like -- Again, it's 0.1, this 1
19 percent saturation level and so a little bit of a
20 tiny movement can cause the uptick, and so I think
21 it's essentially stable after that point but there
22 is some movement on the graph.

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1 JUDGE ROSEMAN-ORR: Do you think it's
2 essentially stable after four years?

3 MS. MCGRATH: Four years I think is
4 where it reaches the maximum lateral extent and then
5 I think it is essentially stable after ten years.
6 There is some movement between four and ten.

7 JUDGE ROSEMAN-ORR: So I may not be
8 reading the graph right, but it looks to me like
9 at four years it's approximately a mile from
10 injection and at 20 years it's about two miles from
11 the injection, so --

12 MS. MCGRATH: I think -- Yes, I think
13 that -- I think that it's kind of hard to see on
14 this graph. I think there are some -- This is -- The
15 maximum lateral extent is expected four years
16 post-injection.

17 The model shows that there is some
18 movement after that timeframe and I think that's
19 why the 10-year period was insisted upon.

20 JUDGE ROSEMAN-ORR: So the model/graph
21 is showing different information than what is
22 written above?

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1 MS. MCGRATH: I don't think that that's
2 the case, Your Honor, but I might not be explaining
3 it well.

4 JUDGE ROSEMAN-ORR: Okay.

5 JUDGE BLAKE: I had just two other
6 questions for you.

7 MS. MCGRATH: Sure.

8 JUDGE BLAKE: So, in addressing element
9 sub 5, (v), of the regulation, the Region states
10 again, that the modeling results also showed that
11 uneven excess trapping of CO2 would not occur within
12 the predicted rates for the immobile capillary
13 phase, dissolved phase, or mineral phase.

14 Where in the record did Wabash make this
15 demonstration and statement about there being no
16 uneven trapping in any of these phases?

17 MS. MCGRATH: I think that that -- So I
18 guess if you are looking at the revised PISC this
19 issue comes up. It's essentially wrapped up in the
20 plume migration rates. They are accounting for the
21 CO2 trapping in each of those rates.

22 JUDGE BLAKE: What page would that be?

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1 MS. MCGRATH: Sorry. It's kind of -- So
2 at revised PISC I guess 11 through 20.

3 JUDGE BLAKE: Okay, so revised PISC 11
4 through 20. If I read that I should be able to
5 discern the basis for the statement there would be
6 no uneven excess trapping, is that --

7 MS. MCGRATH: That -- Sorry, Your Honor.
8 Yes. I think that there is -- The development of
9 the model I think as is reflected on Page 28 of the
10 revised PISC that was used to determine the AoR and
11 included site-specific trapping process, so that
12 would be an input to that model according to the
13 revised PISC.

14 I think that that is where that would
15 come from. It's an input to the model that was used
16 in developing the model.

17 JUDGE BLAKE: Okay. Go ahead.

18 JUDGE AVILA: Now I thought I heard at
19 some point, and correct me if I am wrong, did
20 anything change in the modeling when things went
21 from four to ten or is it just that the model remained
22 the same and people read the graph differently?

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1 MS. MCGRATH: Your Honor, my
2 understanding is that the model remained the same.

3 I think the permittee went back and sort
4 of checked all of the inputs, made sure that it was
5 accurate in order to respond to the Region's
6 concerns, but the demonstration was changed from
7 four years to ten years.

8 JUDGE AVILA: Okay. So the metric
9 discussed Figure 13 didn't change from the --

10 MS. MCGRATH: Correct.

11 JUDGE AVILA: From the --

12 MS. MCGRATH: I think that there was
13 some explanation, some more explanation around that
14 figure.

15 JUDGE AVILA: Right, that the -- in
16 the -- that --

17 MS. MCGRATH: Yes.

18 JUDGE AVILA: -- actually it doesn't
19 track the right -- well, never mind, in the --

20 MS. MCGRATH: Yes, Your Honor, very
21 technical --

22 JUDGE AVILA: Yes.

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1 MS. MCGRATH: -- back and forth on that.

2 JUDGE AVILA: Yes. But just I want to
3 just be clear --

4 MS. MCGRATH: Yes.

5 JUDGE AVILA: -- basically it's a
6 different interpretation of Figure 13. I'm
7 oversimplifying it, but at least the model didn't
8 change but the interpretation of Figure 13 changed,
9 that it supported four years post-injection, i.e.
10 Year 16 on this graph, instead it should be Year
11 22 on this graph, ten years post-injection?

12 MS. MCGRATH: Yes. I think the, again,
13 an oversimplification, but the change was the
14 consensus around when the CO2 plume and the pressure
15 point would remain stable such that the PISC period
16 of a 10-year timeframe was appropriate.

17 JUDGE AVILA: And the reason I ask is
18 because Page 21 of the Area of Review it has
19 "although CO2 plumes," et cetera, et cetera, and
20 then it says "and further plume migration occurs
21 only incrementally throughout the PISC period."

22 So that sentence remained the same from

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1 the original and the revised so I was having a hard
2 time figuring out what migration occurs only
3 incrementally throughout the PISC period, I mean
4 because in one document the PISC period is four and
5 in the next one it's ten but that sentence remained
6 the same.

7 MS. MCGRATH: I think that there is,
8 saying that there is an incremental migration there
9 is some incremental migration in the vertical, you
10 know, from the Potosi dolomite to the Oneota
11 formation and that occurs. I think that's what you
12 are asking.

13 JUDGE AVILA: Thank you.

14 MS. MCGRATH: Okay.

15 JUDGE BLAKE: I just had another
16 question for you.

17 MS. MCGRATH: Sure.

18 JUDGE BLAKE: So I just wanted to
19 clarify Counsel Urban's position. So with respect
20 to Wabash's response to the Technical Review Letter
21 that EPA sent to Wabash --

22 MS. MCGRATH: Yes.

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1 JUDGE BLAKE: -- as my colleagues noted
2 there were about, you know, 100 pages that are blank
3 and those pages that are blank are blank because
4 the answers to those specific questions are
5 contained in the revised AoR, revised PISC, or
6 revised application narrative, is that correct?

7 MS. MCGRATH: Yes, that's correct. A
8 lot of those were instances of EPA asking for
9 adjustments let's say to the inputs or
10 clarifications and I think they made those
11 adjustments.

12 So, you know, you'll see in the PISC plan
13 and in the AoR all of the images of the model results.
14 In a lot of places that's where they have kind of
15 checked their work, and so it didn't make sense to
16 have a narrative, you know, response if EPA's
17 comment was please label Figure, you know, X.

18 JUDGE BLAKE: So let me give you an
19 example.

20 MS. MCGRATH: Okay.

21 JUDGE BLAKE: So on Page 9 of the
22 Technical Review Letter it says "Supplying data

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1 regarding the vuggy, secondary porosity of the
2 Potosi from other sites (e.g., logs, core data,"
3 et cetera, "and directly relating them to the Wabash
4 site will provide evidence that the assumptions made
5 regarding the porosity estimates are valid."

6 So do I just need to look, do we need
7 to look at the documents I just referenced and look
8 at the graphs to ascertain whether that's been
9 addressed or is it going to be clear in commentary?

10 MS. MCGRATH: I'm sorry, can you say
11 again which one in the Technical Review Letter you
12 are talking about?

13 JUDGE BLAKE: Oh, yes, I'm sorry.
14 It's -- I didn't tell you which paragraph.
15 Paragraph D, as in dog, (3) (I) in the second sentence
16 about supplying data it was asking for some
17 additional data.

18 I am just trying to get a sense of whether
19 I need to look, we should be discerning information
20 from the various graphs that have changed or whether
21 there is a commentary.

22 MS. MCGRATH: It's as a whole, Your

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1 Honor. I think where it was evident from the graphs
2 there might not be additional narrative text, but
3 in many cases, and I don't know about this specific
4 example, but I think you would have to go back to
5 the revised AoR to see how they responded to that
6 one.

7 JUDGE BLAKE: Thank you.

8 MS. MCGRATH: Sure.

9 JUDGE ROSEMAN-ORR: Can I just follow up
10 on that for a little bit. I asked the Region about
11 in the TRL, on page 10, but this time 6A, the Region
12 recommended clarifying the timing of maximum
13 lateral extent cessation and the times that I have
14 pointed out didn't change, so is there somewhere
15 else that I am going to find an explanation for why
16 they didn't need to change in the record?

17 MS. MCGRATH: I think the explanation,
18 unfortunately, again, which is very technical, is
19 that the response, the computational modeling
20 results which are shown in those graphics explains
21 that and that is, again, perhaps not a layman
22 explanation but that is where the permittee pointed

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1 the Region to say here is how everything works.

2 JUDGE ROSEMAN-ORR: So nothing changed
3 in the documents, Wabash just explained to the
4 Region how the existing documents --

5 MS. MCGRATH: No. Sorry. I don't mean
6 to suggest nothing changed --

7 JUDGE ROSEMAN-ORR: About that
8 particular issue.

9 MS. MCGRATH: I think that what the
10 permittee did was clarify. Perhaps sometimes "X,"
11 you know, in the communications between them, but
12 also documenting that in the computational
13 modeling.

14 JUDGE ROSEMAN-ORR: But I'm not going to
15 find -- There is nowhere in the record that's going
16 to say that or explain that?

17 MS. MCGRATH: I think that the PISC, the
18 PISC plan and the AoR revised plans explain that
19 and what I think the permittee thought was a clear
20 explanation and adequately responded to that
21 comment.

22 JUDGE ROSEMAN-ORR: Okay. Thank you

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1 very much.

2 MS. MCGRATH: Thank you.

3 JUDGE ROSEMAN-ORR: Mr. Harvey, we'll
4 now hear your rebuttal.

5 (Pause.)

6 JUDGE ROSEMAN-ORR: And you do not need
7 to feel like you are limited to five minutes.

8 MR. HARVEY: Actually, Your Honor, I
9 will make it easy, I have nothing to add. I think
10 the Board, it's clear to me the Board understands
11 the issues. I have nothing to add.

12 With my remaining time if the Board has
13 any questions I am happy to answer them, but nothing
14 substantive do I have to add to what we said earlier.

15 (Pause.)

16 JUDGE ROSEMAN-ORR: I think we are done.

17 MR. HARVEY: Thank you for the extended
18 time, I appreciate it.

19 JUDGE ROSEMAN-ORR: No problem. So I
20 want to thank the parties for their participation
21 today. I, we, appreciate the time and energy that
22 it takes to prepare for oral argument and we are

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1 appreciative of the time and energy that you took.

2 Today's proceeding will be helpful to
3 the Board's deliberations on this matter. The case
4 is submitted.

5 MR. CORTES: All rise.

6 (Pause.)

7 MR. CORTES: This session of the
8 Environmental Appeals Board now stands adjourned.
9 Thank you.

10 (Whereupon, the above-entitled matter
11 went off the record at 3:08 p.m.)
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In the matter of: Wabash Caron Services, LLC

Before: US EPA

Date: 10-23-24

Place: Washington, DC

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