

ILLINOIS POLLUTION CONTROL BOARD
AUGUST 16, 2011

IN THE MATTER OF:)
)
WATER QUALITY STANDARDS AND)
EFFLUENT LIMITATIONS FOR THE)
CHICAGO AREA WATERWAY SYSTEM)
AND THE LOWER DES PLAINS)
RIVER: PROPOSED AMENDMENTS)
TO 35 ILL. ADM. CODE PARTS)
301, 302, 303, AND 304.)

R08-9

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STATE OF ILLINOIS
Pollution Control Board

REPORT OF PROCEEDINGS at the hearing of the above-entitled cause before Marie Tipsord, Hearing Officer, taken before Rebecca A. Graziano, Certified Shorthand Reporter within and for the County of Cook and State of Illinois, at the Thompson Center, Room 9-040, Chicago, Illinois, commencing at the hour of 9:00 a.m. on the 16th day of August, A.D., 2011.

A P P E A R A N C E S

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ILLINOIS POLLUTION CONTROL BOARD:

Mr. Gary Blankenship
Ms. Carrie Zalewski
Mr. G. Tanner Girard
Ms. Marie E. Tipsord
Ms. Alisa Liu
Ms. Thomas E. Johnson
Mr. Richard McGill

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Appeared on behalf of the Metropolitan Water
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BY: MS. STEFANIE DIERS
MS. DEBORAH WILLIAMS

ALBERT ETTINGER,
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BY: MR. ALBERT ETTINGER
MS. JESSICA DEXTER

Appeared on behalf of the Sierra Club.

1 MS. TIPSORD: Good morning, everyone.
2 My name is Marie Tipsord, and I've been appointed by
3 the board to serve as hearing officer in this
4 proceeding entitled Water Quality Standards and
5 Effluent Limitations for the Chicago Area Waterway
6 System and Lower Des Plaines River, Proposed
7 Amendments to 35 Ill. Admin Code 301, 302, 303, and
8 304. This is docket number R08-9 and this is
9 sub docket C.

10 With me today to my immediate
11 right is acting chairman, G. Tanner Girard. To his
12 right is Board Member Carrie Zalewski, and to her
13 right is Board Member Gary Blankenship. To the
14 middle left is Board Member Tom Johnson. To my
15 immediate left is Alisa Liu from our technical
16 staff, and my far left is Richard McGill, who will
17 take over for me while I go to the JCAR meeting this
18 morning.

19 Today is the tenth day of hearing
20 of sub docket C, and the 53rd day overall in this
21 proceeding. Before I start, I just want to be sure
22 are there any other questions for Roy Smoger? We
23 wrapped up pretty quickly at the end of the day.
24 Did anybody have anything else for Mr. Smoger, who

1 was our witness yesterday?

2 Seeing none, we will begin this
3 morning with the testimony of Paul Botts, with the
4 Wetlands Initiative. We have no pre-filed questions
5 for this witness, so we'll take your testimony and
6 allow for any questions at that point. Then we will
7 go to the testimony of Dave Thomas on behalf of the
8 environmental groups and the questions pre-filed by
9 the District.

10 The testimony will be marked as an
11 exhibit and entered as if read. Anyone may ask a
12 question. I do ask that you raise your hand and
13 wait for me to acknowledge you. After I have
14 acknowledged you, please state your name and whom
15 you represent before you begin your questions.
16 Please speak one at a time. If you're speaking over
17 each other, the court reporter will not be able to
18 get your questions on the record.

19 Please note that any questions
20 asked by a board member or staff are intended to
21 help build a complete record for the board's
22 decision, and not to express any preconceived notion
23 or bias. Dr. Girard, do you have anything?

24 MR. GIRARD: Well, good morning.

1 Thank you for coming to the hearing. We look
2 forward to your testimony and questions today.
3 Thank you.

4 MS. TIPSORD: And then before we do
5 start, I have some proposed comment closure dates
6 for the sub docket. It looks like -- knock on
7 wood -- we should be able to finish up today, which
8 will be the end of the hearings that we have
9 scheduled in sub docket C. I would propose that we
10 close the comment period approximately 30 days from
11 today, which would be September 26th.

12 To avoid what happened in sub
13 docket A where the comments came in and then we had
14 requests for responses and replies, I'm going to
15 build in a response time as well of October 11th, so
16 that we would have post hearing comments due
17 September 26th, responses to those comments, and
18 only responses to those comments, due by October
19 11th. Think about those. If anybody sees any
20 problems with those dates, we can talk more, but I
21 just wanted -- I wanted to give some solid dates to
22 start talking about that.

23 So with that, could we swear in
24 Mr. Botts.

1 (Witness sworn.)

2 MS. TIPSORD: And do we have a copy of
3 his testimony? If there's no objection, we will
4 admit the pre-filed testimony of Paul Botts -- am I
5 pronouncing that correctly, by the way?

6 MR. BOTTTS: You are.

7 MS. TIPSORD: We will admit the
8 pre-filed testimony of Mr. Botts as Exhibit 473.
9 Seeing no objection, it is admitted as Exhibit 473.

10 Are there any questions for
11 Mr. Botts? Go ahead, Ms. Liu.

12 MS. LIU: Good morning, Mr. Botts.

13 MR. BOTTTS: Good morning.

14 MS. LIU: In your testimony, you
15 mentioned that these projects only weigh
16 implementation, funding, and final specifications,
17 and relevant permits. Do you have any sort of
18 projected timetable on when any of this might
19 happen?

20 MR. BOTTTS: At this point, I would say
21 we do not have a specific timetable. We are in
22 conversations with various parties, including, in
23 one case, Friends of the Chicago River as a
24 potential partner, and a couple of funders. But the

1 bottom line is that both of these projects depend on
2 the public sector approval in order to go forward.

3 So at the moment, we consider both
4 of these projects to -- we would say poised on the
5 drawing board, as it were. So they could be started
6 at any time. We hope to, but that depends on the
7 actions of other parties. Of course we don't own
8 the land in either case.

9 MS. LIU: Thank you.

10 MS. TIPSORD: Anything further? Thank
11 you very much. We appreciate your testimony.

12 MR. BOTTS: Thank you.

13 MS. TIPSORD: And with that, we're
14 ready to move on to Dave Thomas. Could we have the
15 witness sworn in, please?

16 (Witness sworn.)

17 MS. TIPSORD: And do we have a copy of
18 his testimony to mark as an exhibit?

19 MS. DEXTER: I didn't know that was my
20 job.

21 MR. ETTINGER: No, we don't. We can
22 later.

23 MS. TIPSORD: Okay. As we did
24 yesterday, we'll mark it as an exhibit -- if there's

1 no objection, we'll mark his pre-filed testimony as
2 Exhibit 474. Seeing none, it's Exhibit 474, and
3 we'll get that in the record later.

4 MS. DEXTER: I have one that doesn't
5 have the service list and stuff attached.

6 MS. TIPSORD: That's fine. Do you
7 have Ms. Rice's testimony?

8 MS. DEXTER: Yes, I do.

9 MS. TIPSORD: With that, we'll start
10 with questions. Mr. Andes, whenever you're ready.

11 MR. ANDES: Thank you. Good morning.

12 MR. THOMAS: Good morning.

13 MR. ANDES: Let's start with question
14 number one. On Page 2, you discuss the value of
15 smaller scale improvement projects that could
16 benefit particular fish species. Do you agree that
17 fish recruitment depends not only on small, isolated
18 areas as spawning habitat, but also on adjacent
19 nurseries impeding habitat for small fish?

20 MR. THOMAS: Yeah, that's correct. A
21 variety of environmental factors will be important
22 in the success of recruitment.

23 MR. ANDES: Are you aware of any data
24 demonstrating a benefit to the CAWS fish community

1 from the fish motel in the Chicago River or the
2 floating pods that were constructed in the north
3 branch of the Chicago River by Diversey?

4 MR. THOMAS: Well, I'm not sure that
5 anybody has tried to measure. And if they have, I
6 haven't seen the results of those measurements. I
7 would assume it would be difficult to see any
8 significant benefit because of the small size of
9 habitats that were built.

10 MR. ANDES: Okay. How much area would
11 smaller scale improvement projects have to cover in
12 the CAWS in order to improve the fish communities?

13 MR. THOMAS: Fish community is used a
14 lot, and most habitat improvements are really
15 designed for specific species. If I wanted to
16 improve channel catfish spawning, I might use logs
17 with hollows in them or tubes.

18 So I would say that there is a
19 difference between helping a fish community and
20 helping populations of particular species, and I
21 think most habitat improvement projects are geared
22 towards a group -- a particular species or a group
23 of species.

24 MR. ANDES: Would the area -- if we're

1 talking about the area that an improvement project
2 has to cover in order to improve a particular
3 species, that would differ depending on the species?

4 MR. THOMAS: Yeah, it could very well.
5 You could have very small areas for some species
6 that might be helpful. I know people that pond rear
7 fathead minnows, for instance, they have a bait fish
8 in their ponds, or small lakes may use floating
9 boards that the fish will lay their eggs underneath.
10 And you don't need a lot of those to create a
11 population in your pond. So again, it depends on
12 the size of the system. It depends on the species
13 that you're looking at.

14 I might just add, in terms of
15 vegetation, the LimnoTech report on habitat
16 improvement does have a fact sheet on floating
17 vegetation, and they have an example of a larger
18 system of floating vegetation that could be
19 used -- I mean, larger than the examples of the fish
20 motels. So if one wanted to have vegetation,
21 something like what was suggested there might be
22 something that could be tried in some areas.

23 MS. TIPSORD: And for the record,
24 that's Public Comment 284 of the LimnoTech report

1 that we're talking about.

2 MS. FRANZETTI: If I may?

3 MS. TIPSORD: Identify yourself.

4 MS. FRANZETTI: I'm sorry. Susan
5 Franzetti, counsel for Midwest Generation.

6 Mr. Thomas, did you make any
7 attempt to determine what area would have to be
8 covered in the CAWS for smaller scale improvement
9 projects in order to improve the fish community?

10 MR. THOMAS: Well, again, you're
11 talking about fish community and fish populations, I
12 think they are really -- the problem here is if
13 you're trying to look at statistical significant
14 increase in the fish community, you really need
15 large changes because of the large amount of
16 variability and the large amount of fish population.
17 So that sort of obscures the fact that you can do
18 smaller scale things to help particular species
19 within the system.

20 And so there isn't really a
21 defined answer on how big any of those habitats --
22 but as you begin to improve -- even the bank
23 crumbling on the walls of the canals does create
24 habitat, does provide some areas for some species to

1 do better.

2 MS. FRANZETTI: Well, how large would
3 that area that you said would have to be quite large
4 to get a statistical improvement in the community
5 be?

6 MR. THOMAS: I don't think anybody
7 could answer that question.

8 MS. FRANZETTI: Why not?

9 MR. THOMAS: Well, fisheries biology
10 is an imprecise science, probably at best, and it
11 really varies with the populations. Having the
12 habitat there does not necessarily assure that
13 you're going to have a great spawning.

14 In natural systems, even in some
15 of the best of waters, you may have some years in
16 which spawning is unsuccessful. You may have other
17 years in which you have a very large spawn, a high
18 success, and that may be a combination of the water
19 quality at the time of spawning, water temperature,
20 dissolved oxygen, the food that's available to the
21 young fish, a whole variety of variables.

22 So all you can do is provide the
23 habitat that's necessary for the species, and hope
24 that you have the appropriate water quality

1 parameters for the spawning for the early life
2 stages. And in certain years, you're going to have
3 successful spawning. These fish lay a lot of eggs,
4 so all you need are a few good years of success, and
5 you can really end up adding a lot of individuals of
6 a species to the system.

7 MR. ANDES: Let's move on to question
8 number two. On Page 2, you discuss the limits of
9 electrofishing. As to the literature sources from
10 Scott Bell, I've now sent those over to your counsel
11 and to Illinois EPA and we'll file those with the
12 board. I know there are a number of other questions
13 the board raised at the last hearing, and we plan to
14 follow the requested information in the next week,
15 so we'll include these two documents with that
16 filing as well.

17 MR. THOMAS: I had not reviewed those
18 two until -- I just briefly looked at the
19 methodology here.

20 MR. ETTINGER: We just got them
21 20 minutes ago.

22 MR. ANDES: I understand.

23 MR. THOMAS: So I do see, anyway, what
24 they say and what Scott Bell was referring to. I

1 did have in my office a copy of Meador and McIntyre
2 2003 on The Effects of Electrofishing Gear Type on
3 Spacial and Temporal Variability in Fish Community
4 Sampling, and that was one of his references also.
5 So I did have a chance to look at that, and that was
6 subsequent to my submittal of my testimony but
7 before today.

8 In that particular publication,
9 they did not mention the effective depth of the
10 gear, but they were talking more about the annual
11 variability of fish catch using electrofishing gear
12 in larger rivers.

13 MR. ANDES: So when you suggested that
14 four feet is the effective limit, what was the basis
15 for that statement?

16 MR. THOMAS: I was basing that on the
17 previous electrofishing methodologies used by the
18 District, which were alternating current
19 electrofishing gear. And we have literature -- the
20 Natural History survey, the most effective depths
21 are actually probably below three feet for
22 apparently -- and I missed this when I went through
23 the reports initially because I was looking in the
24 fish metric report and didn't really describe the

1 methodology used, but I did notice -- I think it's
2 in the habitat report on Page 50.

3 It mentioned that DC
4 electrofishing gear was used. And DC is direct
5 current, and what happens -- in AC, you just shock
6 the fish and some of them float to the surface and
7 some of them don't. So that's why if you have more
8 turbid waters, you're only effectively catching fish
9 in the top few feet of the water. In DC, or direct
10 current, electrofishing gear you actually attract
11 fish towards the electrodes, and so you can pull
12 fish in from a greater distance than you would in
13 alternating current.

14 One of the problems I had in
15 evaluating the sample was I didn't see anywhere
16 where the methodology is really described. So I
17 actually don't know whether it was always DC from
18 2001 to 2007, or whether AC was used and then we
19 switched to DC.

20 The other thing is some of these
21 papers mention that DC and AC are more effective at
22 night, and I don't -- I think the samples were
23 probably taken during the day, but I don't know
24 that.

1 MR. ANDES: And we can certainly
2 provide information concerning the District having
3 used direct current on a routine basis.

4 MS. WILLIAMS: Are you trying to say
5 they've used it since 2001? Is that what you mean?

6 MS. TIPSORD: Ms. Williams, you didn't
7 identify yourself.

8 MS. WILLIAMS: Sorry. I'm Deborah
9 Williams on behalf of Illinois EPA.

10 MR. ANDES: So the statement regarding
11 four feet you're really saying is based on an
12 assumption about the alternating current. In fact,
13 if a direct current was used, that would not be the
14 case.

15 MR. THOMAS: That's correct.
16 Although, I think the Emory reference said that it
17 was -- electrofishing was effective at depths less
18 than four meters, so they weren't real specific on
19 how deep. The other thing is all these papers talk
20 about the methodology is similar, that
21 electrofishing is done along the shore. And I
22 think one of the papers -- and it might have been
23 Emory's -- said that basically it was most effective
24 within 30 meters of the shoreline. They were

1 talking about I think the Ohio River.

2 So most electrofishing is done
3 along the shoreline, and actually you're
4 specifically looking for structures in most
5 methodologies. You're looking for logs in the
6 water, overhanging vegetation, rocks, any other
7 structure. Because these are structures that
8 attract fish, and this is where you might most
9 expect to capture the best variety of fish.

10 MR. ANDES: Are you aware that most of
11 the sampling was done near the shore in this study?

12 MR. THOMAS: Yes. I think it
13 said -- it may have said on Page 50 it was done
14 along the shoreline, I think upstream to downstream
15 if I remember right.

16 MR. ANDES: Let's move on to question
17 three. On Page 3, you talk about observations of
18 habitat you made during a one-day boat tour of the
19 CAWS in 2009. Am I correct that's the one time
20 you've been in the CAWS in the last ten years or so?

21 MR. THOMAS: Yeah. In my testimony
22 when I talked about the two times I was on the CAWS,
23 those were boat trips on the CAWS specifically
24 looking at habitat. I have been to the CAWS at

1 other times. I've been to the electric barrier a
2 few times, and I've been in the Calumet area a
3 number of times and along some sections of the CAWS.
4 So I have seen sections of the CAWS at other times,
5 but that was the only time where I did a specific
6 boat trip looking at habitat.

7 MR. ANDES: And did you take field
8 notes or fill out data sheets during that trip?

9 MR. THOMAS: I wrote up my notes at
10 the end of the trip, and just shared them with some
11 of the people that I was on the boat trip with, and
12 I did take some photographs while I was on the boat
13 trip.

14 MR. ANDES: Okay. And your
15 conclusions are based on those notes and pictures?

16 MR. THOMAS: Right.

17 MR. ANDES: Do you know -- in terms of
18 the locations where you saw the aquatic vegetation,
19 do you know exactly where that was? Could that have
20 been on the Little Calumet River?

21 MR. THOMAS: No, it was not on the
22 Little Calumet. We hadn't gotten to any of the SEPA
23 stations yet. So we had come down the Sanitary and
24 Ship Canal going downstream, and then

1 coming -- going up the Cal Sag Channel. So it was
2 on the south side of the channel, and it could have
3 been about midway between where the Little Calumet
4 comes in and the juncture with the Sanitary and Ship
5 Canal. Somewhere along that shoreline.

6 I thought I actually had a picture
7 of the vegetation, but it didn't show up. I mean, I
8 have a picture of some of the shoreline vegetation,
9 but the aquatic vegetation didn't show up in the
10 picture.

11 MR. ANDES: Can we get copies of the
12 notes and pictures?

13 MR. ETTINGER: Sure.

14 MR. ANDES: Thank you.

15 MR. ETTINGER: We will attach it to
16 our final comments, among other things.

17 MR. ANDES: We'd like to see them
18 before that.

19 MR. ETTINGER: You may.

20 MR. ANDES: Thank you. Are you aware
21 that debris and log jams in the CAWS currently have
22 to be removed by the District in order to maintain
23 free-flowing water in the event of a storm?

24 MR. THOMAS: I would assume the

1 District keeps the channels open for navigation. I
2 am not sure when you say removing -- well, debris
3 and log jams -- I'm not sure if there's a log along
4 the shore whether they need to remove that. I would
5 hope not. I certainly understand it has to be kept
6 open for navigation.

7 MR. ANDES: So that could present a
8 potential constraint in terms of putting material
9 into the system to potentially create a habitat if
10 the District then has to remove some of those
11 materials to make sure that there's free-flow?

12 MR. THOMAS: I wouldn't think along
13 the shoreline that would be -- that would be an
14 issue. I mean, there are logs now and branches
15 hanging in the water, and I wouldn't -- I didn't see
16 any evidence of things like that that were removed,
17 and I wouldn't think they would have any
18 interference with navigation.

19 In fact, the LimnoTech report
20 talks about in the Sanitary and Ship Canal where
21 some of the sides have broken down that they thought
22 that was probably a good place for habitat
23 improvement because it didn't interfere with the
24 main use of the canal, which was for navigation and

1 the passage of water. So I think some of those
2 things along the shoreline can be done without
3 affecting the flow or the navigation potential of
4 the waterway.

5 MR. ANDES: And that would depend on
6 the specific segment we're talking about, correct?
7 Some are smaller, some are larger?

8 MR. THOMAS: I suppose, yeah. I mean,
9 you'd need a hydrologist, I guess, to say this is
10 interfering with the flow or whatever was a critical
11 factor.

12 MR. ANDES: Let's go on to the next
13 question. On Page 3, you suggest improving habitat
14 by the use of sheet piling. Are you testifying that
15 sheet piling is a positive attribute for aquatic
16 life?

17 MR. THOMAS: It's not the piling
18 itself that would be the positive attribute, but
19 pilings can be used to provide some protection of
20 in-shore areas. And in fact, again, the habitat
21 improvement report -- I don't have page numbers on
22 this, but there are diagrams in their report that
23 show how pilings can be used to provide a protective
24 area of shoreline, so when the waves from the barges

1 go by, you're not having the washing in and out on
2 the shoreline. You can provide some protection.

3 And again, you need to -- they
4 show a little potential way that you can open it up
5 so fish can move in and out, but that you're
6 attenuating the wave action from the barges. So
7 that's actually what I had in mind, and I actually
8 hadn't seen that before I did my testimony. But
9 they have a nice example in the report of how
10 pilings could -- I mean how sheet pilings could be
11 used.

12 MR. ETTINGER: Maybe we better
13 identify it a little better, since just holding it
14 up is not going to show up very well on the record.
15 The best I can do is it says, "Electronic Filing,
16 PC 284," and then there's a thing down here that
17 says, "Linear Shallows." And is there some sort of
18 page number on this thing?

19 MR. THOMAS: No. This is in the
20 habitat -- the LimnoTech Habitat Improvement report,
21 and I think it's an appendix. It's Appendix B. It
22 says, "Habitat Improvement Technique Fact Sheets."
23 And so the earlier one I mentioned on floating
24 aquatic vegetation is also in that same appendix.

1 MR. ETTINGER: And this is the fact
2 sheet that's entitled, "Linear Shallows," and the
3 diagram he was holding up is the last page of this
4 Linear Shallows fact sheet. Perhaps counsel for the
5 District can identify that better when we get some
6 sort of numbering system or something for all these
7 exhibits.

8 MR. ANDES: I think the question was
9 trying to understand sheet pilings in general. And
10 there are already sheet pilings in the system, and
11 you're not saying those are positive, including
12 sheet pilings that are up against the walls. You're
13 talking specifically about constructing new sheet
14 pilings that would provide the function you're
15 discussing?

16 MR. THOMAS: Right, creating a shallow
17 linear habitat such as this, that they could be used
18 to create that kind of habitat. I mean, the pilings
19 themselves will have algae growing on them and will
20 end up with muscles or whatever growing on them.
21 But yeah, they provide a limited aquatic habitat in
22 and of themselves.

23 MR. ANDES: Let's move on to the next
24 question. On Page 3 --

1 MS. FRANZETTI: Mr. Andes, I'm sorry.
2 One follow-up. In an area like the Ship Canal, is
3 this use of sheet pilings suitable?

4 MR. THOMAS: In some of the -- where
5 you have some breakdown of the walls and you formed
6 a little cove, which the LimnoTech report describes,
7 you could use -- have limited use of sheet pilings
8 there again for just the purpose of attenuating some
9 of the wave action. So you could potentially make
10 it a little more conducive to create limited areas
11 for spawning of fish.

12 MR. ANDES: Let me ask a question to
13 follow-up on that, and we'll talk later about the
14 issue of -- there's been some discussion about some
15 of the walls are deteriorating, and that provides
16 some habitat. In general, walls deteriorating is
17 not a good thing, correct, for navigation, for the
18 basic functions of the system? You wouldn't want to
19 generally repair deteriorating walls.

20 MR. THOMAS: Not necessarily. A lot
21 of those are natural limestone, I believe, that
22 they've cut the canal through. And actually, the
23 LimnoTech report specifically says these areas are
24 probably a good conducive habitat for fish and

1 they're not affecting navigation.

2 MR. ANDES: Can you cite me where it
3 says they're not affecting navigation? I recall
4 that report saying there were constraints on this
5 issue. Because, after all, walls generally have to
6 be repaired.

7 MR. THOMAS: It may take -- maybe
8 after the next break I can find that for you. I
9 think I can find it. I just -- it may take me a
10 minute going through notes to locate that.

11 MS. FRANZETTI: If I may, Fred?

12 MR. ANDES: Go ahead.

13 MS. FRANZETTI: Mr. Thomas, have you
14 spoken to anyone, like the Army Corps of Engineers
15 or other engineers, to find out whether allowing
16 these walls to continue to deteriorate is acceptable
17 and not repair them?

18 MR. THOMAS: I have not, no.

19 MS. FRANZETTI: So you really don't
20 have any technical basis for saying you can leave
21 them in their deteriorated state and allow them to
22 continue to deteriorate. Is that correct?

23 MR. THOMAS: Well, I mean, I think
24 it's sort of common sense. I mean, if it's not

1 interfering with the flow, it's not interfering with
2 the depth of the channel in which the boats are
3 using, then I don't see any particular reason. I
4 mean, if in some way it starts to degrade
5 effectiveness of the channel to move water and to
6 move ships, then yes, they're going to have to do
7 something.

8 That's why the Corps dredges when
9 areas fill in and it gets below a certain depth.
10 But most of these are along the shoreline are not in
11 the main channel where shipping is occurring, so
12 there's no obvious reason why they would have to do
13 it, unless it looks like it's going to create a
14 bigger problem somehow, and I don't know what that
15 would be.

16 MR. ANDES: Well, let me raise the
17 possibility of a bigger problem. Many of us
18 remember a number of years ago when there was a
19 little problem near some sheet pilings in the river
20 and there was a flood downtown underground because
21 there was an issue with the tunnel being breached
22 and water flowing from the river into the tunnels
23 and then flooding buildings all over downtown and
24 deterioration, and that was in this system.

1 MR. THOMAS: Yeah, but that was in the
2 city itself. It was in right downtown here, and
3 that's where the flooding came through the building.
4 I was involved with a geological survey when they
5 were providing expert advice on how to handle that
6 whole situation. But that was piling specifically
7 in there to keep water from flowing through the
8 system. I don't think the rock walls along the CSSC
9 are serving anywhere near that type of function.

10 MR. ANDES: Have you looked at that
11 issue? I'm raising the question -- isn't the
12 integrity of this system a significant issue when
13 we've seen the possible consequences when the
14 integrity of the system is breached?

15 MR. THOMAS: Well, I see those as
16 totally different issues. I mean, one, you're
17 trying to protect skyscrapers and downtown
18 buildings. The other is you've just got vacant lots
19 and industrial property along there, and you've got
20 limestone that goes -- unless a geologist came in
21 there and said, "You know, if this breaks any
22 further, you're going to have a drainage off into
23 some underwater aquifer or something," that would be
24 an identified problem. But to my knowledge, no one

1 has identified those kind of issues, and the
2 LimnoTech report didn't raise that as any kind of an
3 issue.

4 MR. ANDES: So you would say we should
5 let the walls deteriorate up to a point? We
6 shouldn't let them deteriorate anymore?

7 MR. THOMAS: I don't know. You would
8 need a geologist to comment on that.

9 MR. ANDES: Okay. Let's move on to
10 question number five. On Page 3, you raise
11 questions about the discussion of macroinvertebrates
12 in the habitat reports. The focus of the analysis
13 in the habitat reports is on the relationship
14 between habitat and fish, correct?

15 MR. THOMAS: That's correct.

16 MR. ANDES: Are you aware of what
17 percentage EPT taxa comprises Hester Dendy samples?

18 MR. THOMAS: It was low. I think the
19 high at one station was up to two percent of the
20 sample. There were a couple of reaches where they
21 had six and seven EPT taxa that were represented.

22 MR. ANDES: Would you say it's
23 plausible that the low number is indicative that
24 there's not hard substrate availability in the CAWS

1 so the organisms aren't present to colonize to
2 present the Hester Dendy samples?

3 MR. THOMAS: I think there's actually
4 plenty of hard substrate in the system. But the
5 habitat for some species of EPT taxa, like sand and
6 fine gravel bottom, is probably pretty minimal in
7 the system. But there's lots of -- I mean, earlier
8 testimony and side scan sonar that we had -- I can't
9 remember who put that in -- show underwater
10 structures. There's boats on the bottom, there's
11 all sorts of pilings, there's rocks. So there are a
12 lot of hard substrate in the system.

13 MR. ANDES: Yesterday there was
14 testimony about the system being mostly large rivers
15 by the Agency, and you've acknowledged that most
16 EPT taxa are absent from the soft shifting
17 substrates in large rivers. If the vast majority of
18 this system only has soft shifting substrate,
19 wouldn't you expect EPT taxa to be low?

20 MR. THOMAS: Not necessarily. And
21 that's why I referenced our work on the Kaskaskia
22 River many years ago. We found there that a lot of
23 the EPT taxa were on hard substrate in the water.
24 In the case of the Kaskaskia level, hard substrates

1 were logs and tree branches and other structures
2 like that in the water.

3 MR. ANDES: So the bottom of the
4 Kaskaskia has a lot of material?

5 MR. THOMAS: Yeah, particularly as you
6 start getting -- we studied the whole river from the
7 headwaters down to the mouth. In the upper part of
8 the river, you had more ripples and gravel and that
9 when you were in the glaciated areas. Once you got
10 below that, the bottoms of the river tended to be
11 more sand, and then as you got farther downstream it
12 tended to be more silt and clay. And you could
13 sample that by PONAR, which we did, but there's not
14 a lot in those sediments, as I said, other than the
15 chironomid -- the midges.

16 MR. ANDES: Those substrates in the
17 Kaskaskia are very different from, say, the scoured
18 limestone, which is present in many segments of the
19 CAWS, correct?

20 MR. THOMAS: Yeah. There are -- well,
21 there are areas in the lower Kaskaskia that have
22 bedrock bottom substrate. But you're right in the
23 sense it's quite different. Although, my
24 understanding is much of that bedrock in the CAWS

1 does have -- I think the LimnoTech report does have
2 a silt -- a fine silt layering over it. So some
3 areas I'm sure are scoured, and other areas probably
4 are not.

5 MR. ANDES: And what percentage of the
6 Kaskaskia River is embedded in silt?

7 MR. THOMAS: I couldn't give you a
8 percent. As I said, as you get lower in the river,
9 there are large, large stretches -- and that's true
10 foremost large rivers. There are large stretches
11 that are predominantly a clay and silt bottom of the
12 river.

13 MR. ANDES: But there are significant
14 portions in the Kaskaskia, I think you said, that
15 have logs and other materials, that have sand,
16 before you get to the downstream portion that is
17 more silt?

18 MR. THOMAS: Right.

19 MR. ANDES: Are you aware of what
20 percentage of the CAWS is either entirely or
21 embedded in silt?

22 MR. THOMAS: No.

23 MR. ANDES: If silt is a substrate
24 that's vastly dominant throughout the system,

1 wouldn't a PONAR be an appropriate way to sample
2 that?

3 MR. THOMAS: Well, what we found
4 actually -- I would actually use a different
5 sampling gear than they used in this study. What we
6 found in the -- we did use Hester Dendy in the
7 Kaskaskia as well as PONAR, but what we found most
8 effective were drift nets, and these are nets you
9 put in the water that pick up organisms as they're
10 drifting with the current.

11 And what macroinvertebrate
12 biologists discovered over the years is, especially
13 when you get into evening and dusk and into night, a
14 lot of these benthic organisms actually come off the
15 bottom and move with the current, and that's how
16 they move downstream and populate other areas. And
17 so you can get a lot of these things that are
18 attached that are hard to sample through drift nets.
19 And I would suspect that if drift nets were used in
20 the CAWS that we would probably have found even a
21 better diversity of some of those
22 macroinvertebrates.

23 MR. ANDES: Do you have any direct
24 comparison in terms of -- so you've acknowledged the

1 Kaskaskia conditions is somewhat different than the
2 CAWS conditions. Are you aware of any studies
3 showing the relative benefits of the drift nets
4 versus PONAR or Hester Dendys?

5 MR. THOMAS: I have not been up with
6 the literature in recent years, and actually I think
7 people have gone away from using drift nets. I'm
8 not exactly sure why, because they seem to be a very
9 effective way of sampling difficult to sample
10 habitats.

11 To say there's invertebrates on
12 logs is one thing, but to actually get a good sample
13 off of them, it's difficult. And that's why the
14 Hester Dendy is used, because it is a hard substrate
15 that you can put in the water for a defined period
16 of time and then pull up and measure the organisms
17 that are inhabiting it.

18 But there are small substrates as
19 opposed to large logs. A log would have organics in
20 it that the Hester Dendy doesn't have. So they give
21 you a good indication of what's on hard substrates,
22 but they're often not maybe the same as the natural
23 habitat that these invertebrates would be on.

24 MR. ANDES: And you haven't assessed

1 in any detail the particular sediment
2 characteristics in the CAWS in terms of what that
3 would tell you about the best sampling technique.
4 Am I correct? You haven't looked at the sediment
5 characteristics in detail?

6 MR. THOMAS: Well, the sediment
7 characteristics wouldn't tell you that much about
8 the best technique. If it's a soft bottom, the
9 PONAR will work. If you've got sticks or debris in
10 the bottom or gravel or rock, it's not going to be
11 very effective. And I've used PONAR a lot in those
12 situations in which it just doesn't close.

13 For it to work, you need to get a
14 good grab of the bottom sediment and be able to
15 basically bring it up in tact. And if you have
16 things that interfere with that, it's not going to
17 work very well. So it's appropriate where you have
18 softer bottoms where it's been used, but there are
19 other areas where it wouldn't be.

20 MS. FRANZETTI: Mr. Andes, if I may?

21 MR ANDES: Go ahead.

22 MS. FRANZETTI: Susan Franzetti for
23 Midwest Gen. When did you do your -- when were you
24 involved in this work on the Kaskaskia River?

1 MR. THOMAS: Way back in ancient
2 times. In the '60s.

3 MS. FRANZETTI: In the 1960s?

4 MR. THOMAS: In the '60s, yes.

5 MS. FRANZETTI: Have you been involved
6 in any similar work since?

7 MR. THOMAS: I've actually been back
8 on the Kaskaskia in more recent years with the
9 Department of Natural Resources and the Illinois EPA
10 as part of their basin surveys.

11 MS. FRANZETTI: But did you do this
12 kind of work you're talking about?

13 MR. THOMAS: IEPA was using I think
14 benthic samplers for getting bottom sediment and
15 invertebrates. I wasn't involved with their
16 sampling. I was involved with the electrofishing
17 that DNR was doing and also the seining of fish. So
18 no, I was not using this particular sampling gear
19 for invertebrates, if that's what you're asking.

20 MS. FRANZETTI: Yes, that's what I'm
21 trying to understand. So this drift net method was
22 not used at that time?

23 MR. THOMAS: That's correct.

24 MS. FRANZETTI: And did I understand

1 you correctly that you said people had moved away
2 from using it since the 1960s?

3 MR. THOMAS: I haven't seen as much
4 literature recently on the use of drift nets for
5 sample macroinvertebrates. There was a lot of
6 literature in the '60s as people were using it and
7 they were finding it successful, so other scientists
8 were picking up using it. And I don't know if it's
9 still being used a lot or not. I just have not kept
10 up with the literature on macroinvertebrate
11 sampling.

12 MS. FRANZETTI: So in preparation for
13 this testimony, you didn't try and look into why the
14 use of drift nets has significantly decreased?

15 MR. THOMAS: I'm not even sure I could
16 say that. I just -- my statement, I think, was more
17 that I haven't seen recent literature related to it,
18 but that doesn't mean necessarily that others that
19 are working on macroinvertebrates abundant,
20 especially in larger river systems, aren't using
21 that or something similar.

22 MS. FRANZETTI: But you don't know?

23 MR. THOMAS: I don't know.

24 MS. FRANZETTI: Thank you.

1 MR. ANDES: Let's move on to the next
2 question. On Page 3, you raise questions regarding
3 fish species sampling based on collections of fish
4 during rotenone events. Do you know what years and
5 whose fish data was reported in CDM 2007?

6 MR. THOMAS: I believe that was the
7 District's data reported by Dennison. I think it's
8 from 1997 to 1996.

9 MS. TIPSORD: And for the record, CDM
10 2007, that is the UAA's Attachment B to the
11 proposal.

12 MR. ANDES: Are you aware of more
13 recent fish collections done by the District and
14 LimnoTech that are in the record and were considered
15 in the District's proposal?

16 MR. THOMAS: Yeah. I've looked at
17 the -- well, I've looked at what's reported in the
18 LimnoTech reports. If there are other reports, I
19 haven't seen those.

20 MR. ANDES: How many small mouth bass
21 were counted in the Chicago Sanitary and Ship Canal
22 dumpsters after the December 2009 rotenone event
23 according to the IDNR public comments?

24 MR. THOMAS: I looked at their

1 testimony. They had none reported by the Corps,
2 although they did have channel catfish and walleye
3 and small mouth buffalo, but the DNR biologist did
4 report small mouth bass. That's in table one in
5 their testimony.

6 MS. TIPSORD: And for the record,
7 that's public comment 505, and it's a comment versus
8 testimony.

9 MR. THOMAS: Oh, okay. I'm sorry.

10 MR. ANDES: So they just -- so table
11 one indicates that they check the box that it was
12 there, but --

13 MR. THOMAS: They saw it, but there
14 were no numbers. So that just means they observed
15 it in the -- I assume it means they observed it in
16 the samples, or their biologists observed it maybe
17 in the river when the fish were being collected, but
18 it did not show up in the numbers reported.

19 MR. ANDES: So perhaps they think they
20 saw one going, but when they actually collected the
21 fish and counted them in the dumpsters, they found
22 no small mouth bass?

23 MR. THOMAS: Well, I would say -- they
24 know small mouth bass, so I don't think their

1 biologists misidentified it. I think they saw small
2 mouth bass. You can sometimes see fish come to the
3 surface. Sometimes they get collected, sometimes
4 they sink and go out of site. So I didn't find that
5 unusual.

6 What would probably -- what you
7 could probably gather from the numbers that -- there
8 weren't a lot, otherwise they probably -- at least
9 some of them would have shown up.

10 MR. ANDES: And how many rock bass
11 were counted?

12 MR. THOMAS: They had no rock bass in
13 those collections.

14 MR. ANDES: Let's move on to the next
15 question. On Page 3, you raise questions about
16 classifications, and you make a statement that the
17 steelcolor shiner is an intolerant species. Are you
18 aware that the steelcolor shiner is considered
19 intermediately tolerant by USEPA Indiana, Ohio, and
20 IEPA?

21 MR. THOMAS: I realize it's classified
22 differently. Bertram and others that were
23 classifying Illinois fish based on tolerance listed
24 it as intolerant. And I know from my own

1 experience, this was one of the early species that
2 was eliminated from the Kaskaskia River by even the
3 1930s due to siltation. It's quite sensitive, and
4 its range has been decreasing, so that's why I would
5 still consider it a sensitive species.

6 MS. FRANZETTI: And Mr. Thomas, you're
7 again referring to your experience in the 1960s when
8 you reference the Kaskaskia?

9 MR. THOMAS: No, I -- well, no. That
10 was actually from the literature. The fact that
11 it's disappeared from the Kaskaskia in the 1930s is
12 from the literature, not necessarily from any
13 experience I had in the 1960s.

14 MS. FRANZETTI: I understand. But
15 you're --

16 MR. ETTINGER: He's not quite that
17 old.

18 MS. FRANZETTI: But I thought you
19 referenced again your 1960s work --

20 MR. THOMAS: No.

21 MS. FRANZETTI: -- in your feeling
22 that it's an intolerant species.

23 MR. THOMAS: No. I cited Bertram was
24 one of the -- I don't know if I put his reference in

1 my testimony or not. Yeah, it's the first reference
2 in mine, the Bertram Hite and Day Biological Stream
3 Characterization, a 1993 publication. They list it
4 as an intolerant species for Illinois.

5 MR. ANDES: And how many steelcolor
6 shiners were collected in each of the rotenone
7 events?

8 MR. THOMAS: Well, I don't know if any
9 were collected. But actually, as I looked into this
10 in more detail once I got your question, I realized
11 that it's probably -- this whole discussion is
12 probably totally academic, because steelhead shiners
13 shouldn't occur in this system at all. In fact, the
14 closest records that the state has, over 100 years
15 of collections, are the Fox River.

16 And so this was either -- the
17 specimen that showed up that was reported in the
18 LimnoTech report was either a misidentification, or
19 somehow it got in the system maybe through a bait
20 bucket or something. But it doesn't -- actually, it
21 doesn't even occur in the system, and I didn't catch
22 that in my first round when I was testifying on it.

23 MR. ANDES: Then let's move on. On
24 Pages 4 and 5, you discuss the significance of

1 dissolved oxygen, DO. Have you reviewed the DO data
2 that the District has collected over the last
3 12 years to assess current conditions and determine
4 whether those conditions are suitable for early life
5 stages of fish species?

6 MR. THOMAS: I've seen some of the
7 district's DO data, but I have not done a full
8 evaluation of the data. I've looked more from
9 the -- what's there now -- what are the fish
10 population, rather than looking at it from the DO
11 levels that were there at various stations.

12 MR. ANDES: And so am I correct that
13 you also haven't looked at -- or analyzed the impact
14 that drops in DO during wet weather would have on
15 fish productivity.

16 MR. THOMAS: Well, it's interesting
17 you mention fish productivity. If you mean fish
18 productivity, that would mean you're looking at low
19 DO during the spawning season or something. Was
20 that the intent --

21 MR. ANDES: I think I'm talking not in
22 the technical term.

23 MR. THOMAS: More like fish
24 populations?

1 MR. ANDES: General fish population
2 health.

3 MR. THOMAS: Yeah. I think I or any
4 biologist can make the same statement. It depends
5 on how low the DO goes, how long it lasts. I think
6 I described later in my testimony near the end that
7 in extended periods of very low DO, you're going to
8 have organisms that will move out of the system.
9 Some of them may die, and some of them will find
10 shelters -- that could be in shallow water, it could
11 be a SEPA station, wherever -- where they can
12 survive until conditions are better again.

13 MR. ANDES: Do you believe that the
14 incremental increases in dissolved oxygen levels by
15 IEPA will produce a measurable difference
16 in -- let's not quarrel about terms -- in the
17 general health of the fish population?

18 MR. THOMAS: Well, when you say
19 "measurable difference," that's -- I don't know if
20 you're looking at a statistical difference or not.
21 I think that it would have a positive impact on
22 particularly some of the moderately tolerant and
23 some of the intolerant species.

24 The two species that I've looked

1 at most -- considered most that could benefit from
2 improved water quality would be the small mouth bass
3 and the rock bass. I think the habitat is there for
4 those two species. Maybe not a spawning habitat,
5 but a habitat for juveniles and adults. But they
6 are more sensitive to water quality.

7 So I think those are species --
8 and there may be others that would fall in that same
9 category that could -- their populations could be
10 improved by improvements in water quality. So would
11 that show up as a significant community change when
12 you're looking at all the fish populations? If
13 you're talking about statistically improved, I'm not
14 really sure, but I think it would help the fish.

15 You asked originally in the fish
16 diversity, and I think it would help fish diversity
17 and species richness. Because if you increase the
18 number of some of those tolerant and intolerant
19 species -- and usually as the species increase, some
20 of the more dominant tolerant species -- you may not
21 have as great number of those. That would increase
22 the species' diversity and probably the species'
23 richness.

24 MR. ANDES: You talked about that in

1 terms of improving water quality. I guess the first
2 question would be: Have you looked at this
3 reference particularly to the specific changes in DO
4 standards that IEPA has proposed?

5 MR. THOMAS: No, I have not looked at
6 specifically, from a regulatory view, if it was this
7 much or that much over time in that detail. Only
8 that if you do things to improve the water quality,
9 it's going to help.

10 And it has helped over the last
11 30 years. I mean, the District's own data show the
12 positive effects of improving water quality in the
13 system. I mean, you've got years of documentation
14 that you've been successful in the things you've
15 done on the system. I have no reason to think that
16 we've reached an end point.

17 MR. ANDES: And the fish community
18 that has thrived is a primary tolerant and
19 intermediately tolerant community, correct?

20 MR. THOMAS: It's primarily that,
21 correct.

22 MR. ANDES: What effect will the
23 electric field barrier have on fish migration?

24 MR. THOMAS: Well, it's designed to

1 keep fish from moving through that system, either
2 upstream or downstream, although it's harder to
3 prevent downstream. If you shock something, they're
4 just going to drift on through. So whether it kills
5 them or not, I don't know.

6 Obviously there wasn't a natural
7 migration through that system. Those two waterways
8 were originally separated, and so we've created
9 now -- so there wasn't any natural migration of fish
10 through that area, but obviously now fish can move
11 through that area. So you would be -- and I think
12 maybe the point of your question is it will be more
13 difficult for anything downstream to move through
14 that barrier to re-inhabit upstream areas.

15 MR. ANDES: Thank you. Let's go on to
16 the next question. On Page 4, you state that SEPA
17 stations attract fish due to lower DO. In addition
18 to DO, do they also --

19 MR. THOMAS: That should be higher DO.

20 MR. ANDES: Yes, yes. In addition to
21 DO, do the SEPA stations also provide unique
22 habitats with the submerged weirs, boulders, and
23 shallows?

24 MR. THOMAS: Well, and I -- there's no

1 doubt there's a combination of higher DO flow and
2 other habitat features created by the SEPA stations
3 that are attractive to fish.

4 MR. ANDES: And you haven't really
5 analyzed the relative significance of those factors
6 in terms of is it more that it's providing habitat
7 or providing higher DO. Am I right?

8 MR. THOMAS: Well, again, I was basing
9 it on the Dennison report, which is Attachment M-3.
10 I think it's Exhibit 179. Is that correct?

11 MS. TIPSORD: I think so, yes. Let me
12 double check.

13 MR. THOMAS: In which they -- he
14 states that the higher DO is -- he says small mouth
15 bass, large mouth bass, and channel catfish are
16 attracted to the higher DO waters of the SEPA
17 stations.

18 MS. TIPSORD: Actually, it's not 179.
19 179 was Mr. Mackey.

20 MR. THOMAS: Was this Attachment M-3
21 to his? Was it an attachment to him or not?

22 MS. TIPSORD: Well, you said Dennison.

23 MR. THOMAS: Yes, it's the
24 research -- report number 98-10. Dennison was one

1 of the authors, but it's the District's report.

2 MS. TIPSORD: Attached to Mr. Mackey's
3 testimony?

4 MR. THOMAS: I believe so, yes.

5 MR. ANDES: So obviously without
6 taking anything away from the final work done by
7 Dr. Dennison, while the higher DO could be an
8 attractive factor, you're saying that -- you're
9 agreeing that the habitat provided could also be
10 significant for the fish, and you haven't looked at
11 the relative roles of those two factors?

12 MR. THOMAS: No. And I think this
13 is -- I think this is what Mr. Smoger was testifying
14 to yesterday, that some of these things work
15 together. So you have habitat features and water
16 quality features, and their working together is part
17 of the overall environment that could be attractive
18 or unattractive to fish.

19 MR. ANDES: And in providing these
20 artificial devices to the SEPA stations, you're
21 saying?

22 MR. THOMAS: Mm-hmm.

23 MR. ANDES: Let's move on to question
24 ten. On Page 5, you state, "The channel catfish

1 should be classified as moderately tolerant instead
2 of tolerant." If channel catfish are less tolerant
3 and require oxygenated water, and given your
4 conclusion that these fish are already spawning in
5 the CAWS, would you agree water quality is already
6 appropriate to support tolerant or intermediately
7 tolerant fish species, including the early life
8 stages of channel catfish.

9 MR. THOMAS: Well, first I might say
10 that it wasn't exactly my conclusion. It was DNR's
11 conclusion in their -- whatever it's called.

12 MS. TIPSORD: Public comment 505.

13 MR. THOMAS: Public comment. But
14 there's no doubt, because they got a lot of young
15 channel catfish in the rotenone collections, that
16 there were at least -- there had been times, and
17 there's portions of the CAWS in which conditions
18 were adequate for them to successfully spawn and the
19 young could grow.

20 This doesn't mean there aren't
21 other years in which it could totally fail, but
22 certainly the fish data don't lie. Those fish were
23 there, and therefore conditions where they were
24 spawned were adequate for them at that time and that

1 year to survive and to do pretty well, because there
2 were pretty good numbers.

3 MR. ANDES: Okay. If these species
4 are already spawning successfully in the
5 waterway -- well, I think you've answered 10 B.

6 The next question, Question 11, on
7 Page 5, you discuss statistical versus biological
8 significance in a situation where changes in DO are
9 not statistically significant. You've acknowledged
10 fish can move within the CAWS in order to avoid
11 short periods of low DO. In this case, do you
12 support a wet weather limited use standard?

13 MR. THOMAS: I don't feel like I'm in
14 a position to comment on what regulatory standards
15 should or shouldn't be. My bottom line is that I
16 think the system has undergone continuous
17 improvement, if you will, over the years, and I
18 would hate to see any standard put in place that
19 might reduce the incentives for continuing to try to
20 improve the system.

21 And so my at least initial
22 reaction is feeling some reticence towards seeing a
23 wet weather limited use standard put in place as I
24 understand it, because it seems to me like it could

1 reduce the incentives for trying to improve water
2 quality during those periods, and those may be the
3 critical periods in which we'd like to see things
4 done to try to keep both the duration of the low DO
5 as well as the minimal values that occurred during
6 these events achieved.

7 MR. ANDES: But you haven't reviewed
8 the regulatory proposed language in detail the
9 District provided?

10 MR. THOMAS: That's correct.

11 MR. ETTINGER: He's an expert on
12 biology, not law.

13 MR. ANDES: That's fine. And you're
14 aware that the effects of wet weather, whatever they
15 are, will incur due to CSOs and other wet weather
16 sources irrespective of whether there's a wet
17 weather limited use standard?

18 MR. THOMAS: I totally understand
19 that, yes.

20 MR. ETTINGER: Well -- all right. You
21 got his answer, but --

22 MR. ANDES: Okay. So we'll move on to
23 the next question.

24 MR. ETTINGER: It was a prediction as

1 to what the Water Reclamation District would do and
2 the effect on the changes of standards, which I
3 don't think he's qualified to make. But you've got
4 whatever you need.

5 MR. THOMAS: Just to be clear, if
6 that's what you -- I was just answering that I
7 understand that there are wet weather conditions,
8 and that they can lead to lower DO.

9 MR. ANDES: Thank you.

10 MR. THOMAS: That's all I was --

11 MR. ETTINGER: Well, that's true. But
12 you're not testifying as to what the Water
13 Reclamation District would do as to a change in the
14 standards.

15 MR. THOMAS: No.

16 MR. ETTINGER: Thank you.

17 MR. ANDES: I don't think we're asking
18 him to either.

19 Let's move on to the next
20 question. On Page 6, you question the conclusion of
21 Jennifer Wasik's testimony that the CAWS habitat
22 cannot become conducive to spawning, and you state
23 that LimnoTech did not reach that same conclusion.
24 Didn't the LimnoTech report conclude that habitat is

1 the primary limiting factor with regards to the
2 health of the fish population in the CAWS?

3 MR. THOMAS: Well, one, I don't think
4 they used the term "health of fish population."

5 MR. ANDES: Well, they used a fish
6 metric.

7 MR. THOMAS: Yes. They were -- what
8 they did was they demonstrated that six key habitat
9 variables were most strongly correlated with the
10 combined fish metrics, but they did not comment on
11 the health of the fish population.

12 MS. TIPSORD: And just to be clear,
13 we're talking about Ms. Wasik's testimony, which was
14 entered as Exhibit 431, correct, her most recent
15 testimony?

16 MR. ANDES: Yes.

17 MS. TIPSORD: Since there's several of
18 them out there, I think we definitely need to
19 specify.

20 MR. ANDES: Was it part of the purpose
21 of the LimnoTech report to determine the biological
22 relationship between habitat and spawning?

23 MR. THOMAS: I don't believe that was.
24 Nothing I saw indicated that.

1 MR. ANDES: Isn't Dr. Mackey's
2 testimony as to habitat and spawning consistent with
3 the conclusions in Ms. Wasik's testimony?

4 MR. THOMAS: I wasn't sure what was
5 being referenced here.

6 MR. ANDES: So we're talking about
7 Scudder Mackey's testimony. Have you reviewed that?

8 MR. THOMAS: It's been awhile since
9 I've seen that.

10 MS. TIPSORD: Exhibit 457, the
11 pre-filed testimony from February 2001?

12 MR. ANDES: Yes.

13 MS. TIPSORD: Exhibit 457.

14 MR. THOMAS: So I wasn't sure what in
15 his testimony you were referring to.

16 MR. ANDES: Well, when we talked about
17 the issues with the need, for example, for adjacent
18 habitat areas, et cetera, the conditions that would
19 make the habitat conducive to spawning that were not
20 present for many of the areas in the CAWS. And my
21 question was: Isn't that testimony, as to the
22 constraints on the existence of spawning habitats,
23 consistent with the conclusions of Ms. Wasik's
24 testimony about limits on spawning habitat in the

1 CAWS?

2 MR. THOMAS: Well, obviously for some
3 species, the spawning habitat is adequate for the
4 pelagic spawners. For some benthic spawning
5 species, it's not as adequate. Those are areas that
6 I think you could create some specific habitats that
7 could be more conducive to spawning. But I haven't
8 reviewed the two testimonies together, so I guess I
9 can't really answer your question on is it
10 consistent with the conclusions in Ms. Wasik's
11 testimony.

12 MR. ETTINGER: We were a little
13 unclear as to what you meant by "consistent." I
14 mean, were we to logically read the two and decide
15 whether they agree with each other or not, or was
16 this some sort of biological expertise that
17 Dr. Thomas could bring to that subject that you
18 wanted to ask about?

19 MR. ANDES: I think the question at
20 hand was -- Dr. Thomas was questioning the
21 conclusion in Ms. Wasik's testimony about limits on
22 spawning, saying LimnoTech didn't reach the same
23 conclusion. What we were pointing out was first
24 there really wasn't an issue in the LimnoTech

1 report. It was an issue in Scudder Mackey's
2 testimony where he -- his testimony was consistent
3 with her conclusion.

4 MR. THOMAS: But she was testifying, I
5 believe, that the CAWS habitat cannot become
6 conducive to spawning, and I thought he -- from what
7 you just read and what I remember, he was talking
8 about existing conditions. Was he talking about
9 that it couldn't be made conducive?

10 MR. ANDES: Well, I won't state his
11 conclusions, but that was my understanding. But the
12 testimony can stand for itself. And if you haven't
13 reviewed it in detail, that's fine we can move on.

14 MR. ETTINGER: And are we talking
15 about areas that can be connected to the CAWS, like
16 the north branch of the Chicago area if they took
17 the dam out, or are you talking about spawning areas
18 within the CAWS?

19 MR. ANDES: I'm not going to try to
20 re-summarize Dr. Mackey's testimony. It's all in
21 the record.

22 MR. THOMAS: Well, let me put it this
23 way to answer that question: I don't know whether
24 it's consistent, but I would disagree with the

1 overall premise, maybe both of them, that you
2 couldn't make it more conducive for some species to
3 spawn in the CAWS. I think you can improve spawning
4 habitat for some species in the CAWS.

5 MR. ANDES: But you can't provide --
6 to the extent that Dr. Mackey specifically discussed
7 that issue, you haven't reviewed his findings in
8 detail, and you can't take issue with any specifics
9 in what he said?

10 MR. THOMAS: I'd have to go back. I
11 mean, I saw it at the time, I think, that his
12 testimony was put in, but I'd have to go back and
13 review that again. My testimony only was taking
14 issue with the statement in Ms. Wasik's testimony
15 that it couldn't be made conducive, and I feel like
16 it could be for some species.

17 MR. ANDES: And to the extent that
18 that meant for, say, channel catfish, you already
19 said, as it is now, current conditions seem to
20 support spawning in current water quality
21 conditions, correct?

22 MR. THOMAS: Right.

23 MR. ANDES: But would you agree there
24 could be some limits on spawning for other species,

1 say, intolerant ones, ones that are more sensitive?

2 MR. THOMAS: Well, it's not just the
3 sensitivity. I think there are certain habitat
4 types that are limited; sand, gravel, with some flow
5 over them. But I think there are areas that could
6 be created that would be more conducive for some of
7 their spawning. That's all I would say. So I think
8 you could improve the spawning habitat for some
9 species in the system.

10 MR. ETTINGER: Just to clarify, you're
11 not saying there's channel catfish everywhere in the
12 system now based on the one --

13 MR. THOMAS: No. Just to reiterate
14 what I said earlier, it was obvious from the
15 rotenone collections that at least in some years and
16 under some conditions, channel catfish did find
17 adequate conditions to spawn, and there was a
18 successful spawn, as witnessed by the number of
19 young channel catfish that were taken in the
20 rotenone samples.

21 MR. ANDES: But you haven't looked
22 at -- there are years of fish data collected by the
23 District.

24 MR. THOMAS: See, this is -- now this

1 is the case where electrofishing is very inefficient
2 against to sample channel catfish. And so I think
3 that's one of the species that was really grossly
4 underestimated from electrofishing samples. There's
5 nothing wrong with the sampling the way it was done,
6 it's just -- and this is the problem in large
7 systems.

8 I think there was a discussion
9 yesterday about IBIs and sort of why isn't -- when
10 we have IBIs for large systems. And large systems
11 are very difficult to collect in. You need a
12 variety of gear that are sampling various species.
13 And USEPA a few years ago was actually trying to see
14 if they could get a contractor that might begin
15 looking at indices that could be used similar to the
16 IBI but for a large river system.

17 Anyway, that's all I'm saying.
18 Channel catfish are one of the species that were
19 basically under-sampled in the sample methodology
20 that was used.

21 MR. ANDES: In fact -- let me follow
22 up on that. To the extent then if we find plenty of
23 channel catfish in the District data, and if you
24 think, in fact, those are probably low numbers,

1 then, in fact, that would tend to indicate the
2 channel catfish population is pretty substantial?

3 MR. THOMAS: Not necessarily. I mean,
4 they only rotenone certain areas, and that's
5 where -- and in some of those areas they got some
6 higher channel catfish numbers. So at least in
7 those areas, we know -- but even there we don't know
8 for sure -- they rotenone in December. We don't
9 know for sure that the channel catfish actually
10 spawned in that segment, or that the young channel
11 catfish were spawned somewhere else, moved into
12 those deeper channel areas for over wintering, which
13 a lot of fish will do. They'll move into the deeper
14 channel areas over the winter.

15 So they may have been there over
16 the wintertime, but they may not have necessarily
17 been spawned there. It might have been somewhere
18 nearby. Some of these fish will move pretty good
19 distances.

20 MR. ANDES: So then you're not saying
21 there's necessarily spawning in the Chicago Sanitary
22 and Ship Canal. You're saying they might have
23 spawned elsewhere and come here?

24 MR. THOMAS: Well --

1 MR. ANDES: The spawning might be
2 occurring in other areas?

3 MR. THOMAS: All I'm saying is in the
4 area that they did the rotenone collection, it might
5 have been outside the -- it probably was still
6 within the CAWS somewhere, but it might not have
7 been necessarily in that section of the CAWS that
8 they rotenone.

9 MR. ANDES: Now, I was actually asking
10 not about the rotenone event, but about the CAWS
11 fish data collected by the District elsewhere. To
12 the extent we find substantial populations of
13 channel catfish in those sampling events, you would
14 think, in fact, those are probably under estimates,
15 and we would probably find more channel catfish if
16 you, sort of, found the universe of channel catfish?

17 MR. THOMAS: Probably, yeah.

18 MR. ANDES: Let's move on to the next
19 question, number 13. On Page 7 you claim that two
20 intolerant species that should be held most by an
21 improvement in water quality are small mouth bass
22 and rock bass. Are you aware that in Ms. Wasik's
23 testimony, which you state did not mention rock
24 bass, you pointed out that over seven years of fish

1 collection at 34 CAWS monitoring stations, the total
2 of 143 rock bass and 241 small mouth bass were
3 collected?

4 MR. THOMAS: Yeah. And I -- the
5 statement says -- which I stated did not mention
6 rock bass. I think what I was referring to in my
7 testimony is I don't think she listed it as one of
8 the sensitive -- more intolerant species. I wasn't
9 trying to refer that she didn't reference rock bass
10 at all.

11 MR. ANDES: Okay.

12 MR. THOMAS: Just for clarification.

13 MR. ANDES: Do those numbers indicate
14 those are species that are commonly found in this
15 system?

16 MR. THOMAS: Well, I would say they're
17 certainly not uncommon. They're in the system, but
18 not in abundance.

19 MR. ANDES: What percentage of the
20 total fish collected are they?

21 MR. THOMAS: According to the
22 LimnoTech data, small mouth bass rank -- well, this
23 is difficult, because the data that at least I saw
24 in their reports gave occurrences -- how many times

1 did they occur. So it wasn't really based on
2 abundance, I don't believe. So anyway, they had
3 small mouth bass ranked 16th in number of
4 observations and rock bass ranked 20th in number of
5 observations.

6 MR. ANDES: Let's go on to the next
7 question. On Page 7, you try to compare the fish
8 species in the CAWS to those in the Illinois River.
9 Are you testifying that the fish populations in the
10 upper Illinois are the same as in the CAWS? In
11 other words, under current water quality conditions,
12 is the CAWS achieving the same fish balance as the
13 general use Illinois River waters?

14 MR. THOMAS: No, I wasn't trying to
15 draw that broad a conclusion. Although, the point
16 in there was a specific comment that -- I think to
17 Mr. Ettinger's question for Ms. Wasik, and that is
18 might you expect that in other large river systems
19 that you might find the top five species being
20 tolerant species?

21 What I pointed out is there are at
22 least two stations further down in the Illinois
23 River, the Starved Rock Pool and the Marseilles
24 Pool, in which yes, in fact, the top five species

1 were all tolerant -- were tolerant species.

2 MR. ANDES: So have you looked in any
3 detail at differences in fish populations between
4 the two systems?

5 MR. THOMAS: Yes.

6 MR. ANDES: You have?

7 MR. THOMAS: Mm-hmm.

8 MR. ANDES: So can you explain the
9 differences?

10 MR. THOMAS: Yeah. It's sort of
11 interesting. If you look near the dams, it's
12 actually -- the populations are much more similar to
13 the CAWS, and maybe that's because it's more of a
14 reservoir impounded type of area. If you get
15 farther up in those pools, you do start picking up
16 red horse. Red horse is a kind of sucker fish
17 that's usually indicative of cleaner waters. You
18 also get some darters. You get some other species
19 that don't show up in the CAWS.

20 So even within the large river
21 system, and even within the Illinois, you get
22 changes over the length of a pool with different
23 species found more near the dams, and a somewhat
24 different assemblage as you get upstream where maybe

1 the river becomes a little more natural.

2 MR. ANDES: Let's move on to the next
3 question.

4 MS. FRANZETTI: Mr. Andes, I just want
5 to follow-up.

6 MR. ANDES: Go ahead.

7 MS. FRANZETTI: Mr. Thomas, am I
8 understanding correctly what you're understanding is
9 what you saw in the fish data was that the quality
10 of the fish community was poor in the area of the
11 dams?

12 MR. THOMAS: I don't know if you'd use
13 poor. It was less diverse. It did not have some of
14 the more what you might call sensitive river fish
15 that you would find farther upstream in the pool.
16 In other words, you had more of a reservoir type
17 habitat, so some of the more truly rivering fish
18 that often are associated with some current and that
19 tend to be lacking in those areas near the damn.

20 MR. ETTINGER: Ms. Franzetti asked you
21 about the vicinity of the dam. Do you mean above
22 the dam?

23 MR. THOMAS: Just above the dam. Not
24 below it.

1 MR. ETTINGER: It's not the distance
2 from the dam that's important.

3 MR. THOMAS: Right.

4 MR. ETTINGER: It's whether you're
5 above the dam or below the dam?

6 MR. THOMAS: Above the dam in the
7 impounded waters.

8 MS. FRANZETTI: Right. You're talking
9 about -- I'm sorry. Just so it's clear, I think you
10 used the phrase "near the dams."

11 MR. THOMAS: Yeah, and I should be
12 more accurate. Above the dam.

13 MS. FRANZETTI: You're talking about
14 impounded --

15 MR. THOMAS: Impounded waters above
16 the dams.

17 MS. FRANZETTI: Where you don't tend
18 to have any free-flowing waters?

19 MR. THOMAS: There's flow, but it's --
20 right.

21 MS. WILLIAMS: I would like to ask a
22 follow-up too. I just want to brush out a little
23 bit what you were saying about comparing the CAWS to
24 the other Illinois River impounded areas. Did you

1 specifically look at the comparison between the
2 Dresden Island pools and the pools farther down the
3 Illinois River? Can you comment on that at all?

4 MR. THOMAS: Yeah, and I can't
5 remember if I testified on that previously or not.
6 But actually, the populations in the Dresden Island
7 Pool were actually better than they were down in the
8 Marseilles Pool or the Starved Rock Pool. This is
9 based on the Natural History Survey random
10 electrofishing data in those pools.

11 I suspect one of the reasons might
12 be there's actually a good macrophyte population in
13 the Dresden Island Pool, which is absent down in
14 some of these other pools, or much reduced down
15 there.

16 MS. WILLIAMS: Thank you.

17 MS. FRANZETTI: Dr. Thomas, can you be
18 a little bit more specific? When you say the
19 Dresden Island Pool, is that fish data primarily
20 drawn below the I-55 bridge portion of the pool?

21 MR. THOMAS: I don't think it was. I
22 think it included both below and above, but I'd have
23 to recheck. It's been a while since I've looked at
24 those datas. I'd hate to say for the record and not

1 be accurate on that. I'd have to check to see where
2 those were from.

3 MS. FRANZETTI: Okay.

4 MR. ANDES: I'm going to save everyone
5 a lot of time, because a significant number of the
6 issues in our next questions I believe have been
7 covered, so I'm going to skip 15, 16, 17 -- let me
8 go to 17 quickly. This concerns the floating beds
9 of vegetation in the Chicago River.

10 I had asked the question earlier
11 about the fish motels and the floating pods, and I'm
12 not sure if this is duplicative or if we're -- if
13 you were mentioning something different than the
14 floating pods when here you talk about the floating
15 beds of vegetation, so maybe you can clarify that
16 and tell us what you know about those projects.

17 MR. THOMAS: I'm not sure where this
18 is in --

19 MR. ANDES: You mention it on Page 7
20 of your testimony.

21 MR. THOMAS: Yeah, I don't know if the
22 numbering on my testimony is the same. Is that
23 under --

24 MR. ANDES: At the bottom of -- it's

1 not numbered. I counted it as Page 7.

2 MR. THOMAS: I see. Is this the --

3 MR. ANDES: It's under Paragraph 9.

4 MR. THOMAS: "Some of these
5 improvements could include creating sand and
6 gravel." That sentence?

7 MR. ANDES: Right. And it says --
8 yes, "Creating floating beds of vegetation, such has
9 been done to a limited degree in the Chicago River."

10 MR. THOMAS: Right.

11 MR. ANDES: And I wasn't sure what --
12 is that the floating pods? Is that something
13 different? What's your --

14 MR. THOMAS: Well, it could be
15 something which we referenced earlier in the Habitat
16 Improvement Report. They had more extensive
17 floating beds of vegetation that could be used.

18 MR. ANDES: But you're not aware of
19 any details on these projects, the current
20 condition, benefits, anything else?

21 MR. THOMAS: No, other than they're
22 relatively small, at least the one I'm familiar with
23 in the Chicago River itself. I'm not familiar with
24 the one in the -- what's the other one? The north

1 branch. I haven't seen that one. And I was using
2 these just as examples.

3 MR. ANDES: Generally?

4 MR. THOMAS: What are some of the
5 things that could be done? Those are some of the
6 things that could be looked at.

7 MR. ANDES: I'm going to skip more
8 questions. 18, 19, 20, and 21 I think we've
9 addressed, so I'll go to 22.

10 MR. THOMAS: Let's go to, if we can,
11 to 19, because I think I can answer an earlier
12 question of yours, if you're willing to do that.

13 MR. ANDES: Okay.

14 MR. THOMAS: You ask about the bank
15 pocket areas in the LimnoTech statement, and it's on
16 Page 19 of the Habitat Improvement Report.

17 MS. TIPSORD: 284.

18 MR. THOMAS: 284. There's a section
19 on small pocket areas, and it says, "Bank pocket
20 areas represent a potentially improvable habitat
21 attribute because they are located in bank areas and
22 are unlikely to interfere with primary uses of the
23 CAWS (effluent, disposal, commercial, navigation,
24 and flood control).

1 "In general," I continue to quote,
2 "habitat attributes associated with bank areas in
3 the CAWS have more potential for improvement for
4 this reason than do attributes that are associated
5 with essential parts of the channels or with channel
6 beds."

7 MR. ANDES: So is that talking now
8 about essential areas of the channels that slip, for
9 example?

10 MR. THOMAS: No, no, no. This was
11 talking about the bank pocket areas that we were
12 talking about before. You asked me for the
13 reference and I didn't know it at the time, but I
14 had it actually indicated here.

15 MR. ANDES: Are there other -- in that
16 report, are there other discussions of constraints
17 on the use of those bank pocket areas for improving
18 habitat?

19 MR. THOMAS: I don't know. There may
20 be. I haven't committed this to memory.

21 MR. ANDES: Well, but you've discussed
22 one part of the report. I'm trying to understand if
23 you're familiar with the constraints on those
24 assumptions in other parts of the report.

1 MR. THOMAS: I don't remember reading
2 about the constraints on it. I mean, I have looked
3 through the report, but to ask me if I remember, I
4 don't remember them talking about -- obviously there
5 are -- there's some obvious constraints probably. I
6 mean, you won't dynamite the walls and blow up
7 things probably.

8 MR. ANDES: So that would be a
9 problem?

10 MR. THOMAS: It could be I guess.

11 MR. ETTINGER: Depends on what part.

12 MR. ANDES: Well, let's move on to
13 Question 22. Although earlier it was stated that
14 you weren't the regulatory expert, you did express
15 concerns about the wet weather limited use in your
16 testimony on Page 8, including that the trigger for
17 wet weather events was quite low. Was that
18 statement based on some kind of analysis of what
19 level would be appropriate?

20 MR. THOMAS: No.

21 MR. ANDES: Did you review the
22 District's justification for the triggers?

23 MR. THOMAS: No. I just -- it was
24 based on the fact that we were having a wet spring

1 with an awful lot of rainfall events that were more
2 than a quarter of an inch. So I just got thinking,
3 if you're using this spring as an example, you would
4 have had an awful lot of times in which the wet
5 weather trigger would have been -- it seems like the
6 system ought to be able to accommodate a
7 quarter-inch rainfall without necessarily entailing
8 a new limit set. So I just --

9 MR. ANDES: But you don't have any
10 technical basis for saying that?

11 MR. THOMAS: No, just common sense.

12 MR. ETTINGER: Well, basically it's
13 based on your knowledge that a quarter-inch of rain
14 is not a whole lot?

15 MR. THOMAS: Yeah.

16 MR. ANDES: So you haven't looked at
17 what the loadings -- wet weather loadings into the
18 CAWS are when there's a quarter-inch rainfall?

19 MR. THOMAS: No.

20 MR. ANDES: Thank you.

21 MS. WILLIAMS: Do you recall,
22 Dr. Thomas, how often quarter-inch rainfalls result
23 in CSO events?

24 MR. THOMAS: No.

1 MR. ANDES: And you're also aware that
2 under the wet weather limited use proposal, the wet
3 weather limited use would not be automatically
4 triggered by a quarter-inch rain event? There were
5 other conditions as well.

6 MR. THOMAS: Yeah, I think I remember
7 reading that or saying that.

8 MR. ANDES: Okay. That's all I have.

9 MS. TIPSORD: Are there any other
10 questions for Dr. Thomas? You guys just didn't want
11 Richard to be a hearing officer. Let's go off the
12 record for just a second.

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

15 MS. TIPSORD: Let's go back on the
16 record. I want to thank everyone, once again, for
17 your testimony, your professionalism, and your
18 cooperation. We will close the comment period in
19 sub docket C on October 3rd and allow for responses
20 to those comments by October 17th. These are
21 pre-first notice comments. And with that, I thank
22 you all, and we're adjourned.

23

24

1 STATE OF ILLINOIS)
) SS
2 COUNTY OF COOK)

3

4

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11 notes so taken as aforesaid, and contains all the
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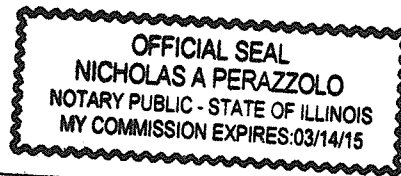
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