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| WATER QUALITY STANDARDS AND EFFLUENT LIMITATIONS FOR THE CHICAGO AREA WATERWAY SYSTEM AND THE LOWER DES PLAINES RIVER: PROPOSED AMENDMENTS TO 35 Ill. Adm. Code Parts 301, 302, 303 and 304. | ) | No. R08-9 |

TRANSCRIPT OF PROCEEDINGS held in the above-entitled cause before Hearing Officer Marie Tipsord, taken before Tamara Manganiello, RPR, at 1215 Houbolt Road, Room T-1000, Joliet, Illinois, on the 11th day of March, A.D., 2008, commencing at 9:00 a.m.

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HEARING OFFICER TIPSORD: Good morning. My name is Marie Tipsord and I've been appointed by the Board to serve as hearing officer in these proceedings. We all know what we're here for, it's R08-9. This is day two of our hearings. We will continue again tomorrow and we will start again tomorrow morning at 9:00 o'clock and go until about 5:00 o'clock tomorrow again and see where we are.

Also as a reminder, we will talk tomorrow, unless we go really fast over the next two days, I don't know that we're going to be done with the Agency by the end of the day tomorrow. That being the case, we'll keep that in mind when we look at potential other dates for hearings.

We're starting today with Midwest Generation. I remind you all that anyone may ask a question, you need not wait until your turn to ask questions. Please raise your hand, wait for me to acknowledge you, identify yourself for the record and whom you represent and speak one at a time. If you

speak over each other, the court reporter will not be able to get everything on the record.

Also note that any questions asked by a Board member or staff are intended to help build a complete record for the Board's decision and not to express any preconceived notion or bias. Did you have anything today? I skipped over you yesterday I know.

DR. GIRARD: That's all right. Just good morning. Thanks for all your time and effort, we appreciate it. We're going to have a great record. Let's get to work. Thanks.

HEARING OFFICER TIPSORD: With that we'll start with Ms. Franzetti and Midwest Generation.

MS. FRANZETTI: Thank you. We left off with F, aquatic life use designations proposed regulatory language in my pre-filed questions. Question under number one, I think this has been answered to a certain extent so I'm going to change from the pre-filed question a bit to recognize the

prior testimony that was given yesterday on some of these issues.

With respect to question 1A, I know yesterday there was testimony I think from Mr. Smogor about the relative differences that are meant to be conveyed in the respective aquatic life use designation proposed rules. Do you recall what I'm talking about, Mr. Smogor?

MR. SMOGOR: Yes.

MS. FRANZETTI: With respect, though, within each of the proposed use designation rules -- and I'm talking about for the record 303.230, 235 and 237, is the use of the terms tolerant, intolerant and intermediately tolerant, is that, though, intended to convey the differences between the proposed use designations within those rules?

MR. SMOGOR: It's intended to convey one of the primary manifestations of the differences in biological conditions that are reflected by each of those proposed uses. Does that help?

MS. FRANZETTI: I think so. So those

words are -- they're intended to define what the attainable biological condition is of rivers or water segments that are placed within that use designation?

MR. SMOGOR: Yes. It was our intent to provide in maybe more concrete terms but still relative degrees of what we meant by a balanced versus and imbalanced versus an even more imbalanced biological condition.

In a primary manifestation of moving from a balanced to a less balanced to an even more imbalanced system, one of the primary patterns that we see out there as human impacts increase is this change from the presence of intolerant species to a loss of intolerant species to greater and greater predominance of the most tolerant types.

MS. FRANZETTI: I think B and C have been covered. D, the language of the proposed use designations uses the term predominated. What's the intended meaning of that term predominated?

MR. SMOGOR: That means dominant in number.

MS. FRANZETTI: And is something dominant in number if it at least exceeds 50 percent?

MR. SMOGOR: If there's two -- only two types, that would be true. But if you have more than two types, it's whatever is the most. If you count the number of the different types, it's just whatever one has the most number of individuals.

MS. FRANZETTI: Now I know yesterday you were telling us that the Agency doesn't want to define specific species -- I understand that -- doesn't really think they want to reference a fish guild or guide that would give us lists of what's included in tolerant, intermediately tolerant and intolerant, but in order for the Agency to make the determinations in these proposed rules as to what type was predominant for a given use and, therefore, to place the river segments appropriately based on the fish populations, what fish data did you rely on to do that?

And if we want to check your

judgments here, what data would we look at to take a look and see what is predominant, what types of fish are predominant in these particular water bodies listed under each of the proposed uses?

MR. SMOGOR: Would you excuse me for a second?

MS. FRANZETTI: Sure. Absolutely.

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

MR. SMOGOR: Again, there was not the intent to put species of fish into particular boxes in terms of their relative intolerance or relative tolerance. There was not the intent to do specific counts of how many fish are in each of those boxes.

The intent was to convey a more concrete idea of what would be a balanced versus a less balanced biological condition.

So, in other words, I don't know if this would be -- another way to think about it is if we had not tried to explain what balanced and imbalanced meant in terms of this primary way of judging that -- and

it's not the only way of judging if something is balanced or imbalanced. If we had just pretty much said balanced populations of aquatic life, that would have been -- that's pretty much what we intend. We didn't really intend much more than that.

We were trying to give a picture of what that means in terms of the structure in common terms that people can understand. People generally understand when you talk about there's a range of animals that occupy any location out there, that some are more tolerant to human impacts and some are less tolerant.

And this concept of having more sensitive forms and less sensitive forms out there we thought was one maybe more concrete way of getting to this concept of balance versus imbalance. And that was the only intent of it.

MS. FRANZETTI: Okay. Let me try and convey my issue here. Let's take this by way of example, that under 3.3.235, which is the proposed rule on the CAWS and Brandon Pool

Aquatic Life Use B Waters Designation, for example, the Chicago Sanitary and Ship Canal has been placed in that proposed aquatic life use designation, if I want to evaluate whether or not I agree with you that the CSSC should be in Use B versus Use A, that's what I'm trying to understand is if I think that's the wrong designation for the CSSC, not that I'm saying it is, but what do I look at to kind of review what you looked at in making the judgment that for aquatic life use, CSSC should be in an Aquatic Life Use B Waters.

And I thought one of the things I should look at would be fish data to see whether or not I agreed that the CSSC is capable of maintaining aquatic life populations predominated by individuals of tolerant types.

MR. SMOGOR: Now when we're talking about if we have a water and we want to know what is the potential -- the biological potential of a particular water to put it either in the CAWS A Box or the CAWS B Box in terms of its biological potential, now we're

much less interested in the existing biological condition.

To do that, we're focused more on the template -- the physical template and saying what can this water reasonably attain in terms of its biological condition. So if you're looking at a particular water and you think that it should be in Box A instead of B, then we're not really focusing much on the aquatic life that's present.

Again, we're judging what can be its attainable biological condition and we're primarily focusing a lot on the physical template. So that's a slightly different situation than saying I have a water, what is its current biological status. So to me those are kind of two different questions.

MS. FRANZETTI: So if I understand correctly, in deriving these aquatic life use designations and the narrative explanation of them that is contained in the proposed rules, you were not really looking at the fish population that exists there today, that was really not a very significant piece of

information for determining what waters go in that use designation, correct?

MR. SMOGOR: It was informative, it provides context, but it was not the primary driver.

MS. FRANZETTI: And the primary driver was more the physical conditions of -- well, the physical conditions that you believe match the proposed use designation, what is attainable based on those physical conditions?

MR. SMOGOR: Based on what we believe are the irreversible conditions out there, the -- I call it a template. Maybe that's not an appropriate word, but maybe that's helpful to some. Based on that, yes, that helped us derive the attainable biological condition.

MR. SULSKI: Can I add a clarification, please? That's not to dismiss the biological data. The biological data is very important if you have it to look at. You don't need it, but if you have it, it's very important because it answers several

questions for you.

When you compare the biological data to what's expected out of the habitat and if the biological data shows that the community -- the aquatic life community is not meeting what the habitat suggests, you've got a problem. That's what an assessment does. Then you start to look for sources of the problem. That's what the UAAs did.

However, if the biological community, the IBIs, whatever you're looking at exceed what the habitat suggests, you've got something else going on out there that is encouraging a more balanced community and that raises your bar. That's an existing use. You have -- despite what the habitat says, if that's a consistent existing use, you have to protect for it.

MS. FRANZETTI: Okay. And is the use then of the terminology like tolerant, intolerant meant to reflect an organism's tolerance to certain -- or suitability to certain habitat conditions as well as conventional pollutants?

MR. SMOGOR: The way we use those terms is very general. It's tolerance to human impacts of all types, so there's no specificity intended. And human impacts of all types would include physical impacts, as well.

MS. FRANZETTI: So does the way you're using it differ a bit from the way some of the reference materials tend to use those terms in that I believe as they are used in fish reference materials, it doesn't take into account whether or not a species is tolerant or intolerant to things such as toxics, heavy metals for example?

MR. SMOGOR: I think in the reference materials that I'm familiar with, and those are the reference materials primarily concerned with deriving biological indicators such as IBIs, indexes of bio-integrity, those types of classifications are fairly broad so they would include multiple types of human impact.

Now they're not always absolutely correct when you're looking at only one type

of impact. It's kind of -- for instance, there are fish species that in general could be considered tolerant of most types of human impact, both physical and chemical.

But there may be -- even those species may be classified as say broadly tolerant. There may be a chemical out there that they're particularly sensitive to. So there's not much specificity in these broader classifications and they are not always 100 percent accurate either because they are so broad.

MS. FRANZETTI: Okay. Moving on to E, and this may reflect my lack of knowledge, but what is the intended meaning of the term individuals. It would seem to be relating to fish at least, but can you just explain how that term is used?

MR. SMOGOR: Each organism, whether you're talking about bugs, whether you're talking about fish. An individual is one organism.

MS. FRANZETTI: And moving on to F, in the proposed use designation for the Upper

Dresden Island Pool in Section 303.237, the phrase is used "capable of maintaining" as in these waters are capable -- well, actually, the "of" I think I dropped, but these waters are capable of maintaining aquatic life populations consisting of individuals of tolerant, intermediately tolerant and intolerant types. What's the intended meaning of the term "capable of maintaining" as used in that proposed rule?

HEARING OFFICER TIPSORD: Excuse me, Ms. Franzetti, could you specify again the section you're talking about? I apologize.

MS. FRANZETTI: No problem. 303.237.

HEARING OFFICER TIPSORD: Thank you.

MR. SMOGOR: Having the capacity to support.

MS. FRANZETTI: Moving on to number two, do these types of aquatic life also have to be capable of adapting to the physical conditions that follow in the language of each use designation?

And let me note stay with 303.237, after the language I just previously read

about capable of maintaining these tolerant and intermediately tolerant and intolerant types, it goes on to say, quote, that are adaptive to the unique flow conditions necessary to maintain navigational use and upstream flood control functions of the waterway system.

MR. SMOGOR: So could you ask the question again, please?

MS. FRANZETTI: Sure. I'm trying to understand is the defined use -- does it consist of basically two parts? The Upper Dresden Island Pool is capable of maintaining, and as you've said, that's having the capacity to support these three categories of fish species, but is it also then modified by that are adaptive, that can adapt is the way I think what it means to the unique flow conditions that are in the Upper Dresden Pool?

MR. SMOGOR: Those are probably -- I think they're similar intent there and I think capable of adapting or that are adaptive to -- I'm sorry, that are adaptive

to was intended to maybe add a -- emphasize a time component, kind of a constancy component.

In other words, it's just not taking a snatch out and saying what's there, but what's there is there for a reason, it's able to live under those conditions, it's able to get by under those conditions.

MS. FRANZETTI: And is that meant to convey part of the Agency's view that Upper Dresden Island Pool has unique conditions?

MR. SMOGOR: I don't really see how it ties directly to that. When we say Upper Island Dresden Pool has unique conditions, the intent there was really with a broader look, outside of the area of the waters that we're addressing in these proceedings. It's unique.

All the waters of these proceedings spanned out as unique from all the other waters of the state. That's what I think was intended by unique, just to emphasize that this is a -- it has been -- these waters have been in a different box

since 1972 and we still recognize that they are pretty unique in terms of the level of human impact that they've experienced compared to other waters in the state.

MS. FRANZETTI: And is it the Agency's view that fish that are going to be able to reside in Upper Dresden Pool need to be able to adapt to its unique flow conditions?

MR. SMOGOR: Yes.

MS. FRANZETTI: Following up on that in number three, does existing data on the -- and I'm staying with Upper Dresden Island Pool -- show that the aquatic life present has adapted to the unique flow and physical conditions in Upper Dresden Pool?

MR. SULSKI: The answer to that is yes, but not to the degree expected.

MS. FRANZETTI: And please elaborate on what you mean by not to the degree expected.

MR. SULSKI: When we look at the habitat and we compare it against what exists, there's a disparity. What exists is not living up to our expectations.

MS. FRANZETTI: Moving on to number four now, and I'll modify it a little bit and make it clearer. I know, again, you don't want to list specific species for purposes of the proposed rule, but can you give us an example or two of the types of intolerant species as are referred to generally in 303.237 that are, in your opinion, capable of adapting to the conditions as described in the proposed rule?

MR. SMOGOR: Can you give me a second on this one, please?

MS. FRANZETTI: Sure.

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

MR. SMOGOR: Again, the intent -- in relative terms, there was no real intent to name specific fishes. But as an example of what I think of what probably can be supported in Upper Dresden Island Pool and that may be considered as an intolerant type are kind of the lower rung of the intolerant type.

So when we're talking about

intolerant fish, we're not necessarily talking about -- again, those terms were just relative, so intolerant is up to how someone wants to interpret it. And there are various interpretations in the literature. There's no one set of fish that everyone agrees to is an intolerant set of fish.

So you can think of a range of tolerance within a group of intolerant fish. They're kind of on that end of the scale. So examples of those types of fish that are maybe the lower rung of the intolerant types that can be supported, maybe some of the Red Horse Suckers, maybe a few of the Shiners, I believe there's maybe something like a Sand Shiner, I think there's Ghost Shiner is a species that's known to occur in Lower Des Plaines River.

Now these fish may -- some of these may be known from below I-55, but if there's nothing blocking them, it's not going to stop them from moving to above I-55. So those are a couple examples of possibilities.

MS. FRANZETTI: Thank you. Moving on

to number five, what scientific data supports the Illinois EPA's conclusion that intolerant fish species can adapt to the type of physical and flow conditions that are present in Upper Dresden Pool?

MR. SMOGOR: Adaptability is not an either/or kind of concept. There are varying degrees of adaptability. In general, if an organism can persist at a location I think our intent of the word is that that organism has adapted to live there. That doesn't necessarily mean that particular type is going to do extremely well, but it's barely getting by at a location and it has adapted to some degree to that location.

Now there are different levels of adaptability. Another type of organism at the same location may be doing very healthy populations, doing much better, not just barely getting by but living, that organism has also adapted to that situation, but it has adapted to a higher degree, so there are different levels of adaptability.

I would say the evidence that

organisms have adapted to a site is that they're there persistently without the help of, say, human stocking. Obviously, if humans take a fish and stock them there, they might be there through time but you wouldn't necessarily consider that they're adapted unless they're persisting there without the help of human stocking.

So that's what I would say, the persistence of an organism at a location I believe is evidence of adaptability to that location for that set of conditions.

MS. FRANZETTI: I understand but that seems to be based on an actual condition. In other words, you're saying the fish is there and, therefore, what may be called an intolerant fish species has adapted to conditions that one might not expect it to be able to.

But that presumes you have actual evidence that it's adapted. Your proposed rule, as you were just saying earlier, speaks in terms of what may occur, an attainability. So how do you know without as you just said

the evidence that's there and it's adapted that more intolerant species can, in fact, adapt to the Upper Dresden Island Pool conditions? That's what I'm trying to look for. Is there some scientific data, are there studies that have shown intolerant species can, in fact, adapt to the type of conditions in Upper Dresden Island Pool?

MR. SMOGOR: Well, I guess in a lot of ways when we're setting biological potential, we are making some judgments beyond existing conditions. So we are making that judgment that the template that's potentially available in Upper Dresden Island Pool can support a biological condition at a level higher than what the existing condition is.

MS. FRANZETTI: And I'm asking you what is that judgment based on? I mean, yes, you can make a judgment but is it based on scientific or technical data?

MR. SMOGOR: For the physical habitat, I think there's enough information in the literature especially if we're looking at one indicator of physical habitat, let's say a

QHEI and the metrics of the QHEI, I think there's enough information in the QHEI literature to suggest that you can attain biological indicator scores higher than what we're actually seeing out there.

And along with those higher scores that might better match what we're seeing in terms of the physical habitat scores, those would be consistent with having more intolerant types.

MS. FRANZETTI: And how does that take into account the ability to adapt to the unique flow conditions?

MR. SMOGOR: In other words, flow and habitat being two different things, is that what you're getting at?

MS. FRANZETTI: I guess I'm asking you does the typical QHEI ranking approach take into account what has been identified as the unique flow conditions in Upper Dresden Pool?

MR. SMOGOR: To some extent habitat affects flow because of sorting of particles and how flows effect on structuring the way a stream looks physically. To some extent

habitat does account for effects of flow.

Again, the unique flow conditions, we don't really believe that -- they are unique relative to the rest of the state, but they're not so impacted -- the flow conditions are not so impacted in Upper Dresden Island Pool that it would prevent biological conditions from attaining the clean water goals.

MS. FRANZETTI: And what's that judgment based on?

MR. SMOGOR: I don't know the flow data specifically, but I guess from the UAA, I'm just going back to that, and apparently from the UAA the flow conditions weren't that impacted or that disruptive that would prevent attainment of that biological goal.

MR. SULSKI: Can I augment that, please?

MR. SMOGOR: Sure.

MR. SULSKI: We talk about unique flows, you're focused on this unique flows.

MS. FRANZETTI: Well, because that's the language in your proposed rule.

MR. SULSKI: Okay. And maybe unique was not a good word to put in there for Upper Dresden Island Pool and I will I admit that, maybe it was a mistake because we have systems throughout the state that have similar flow patterns, not in the '70s. In the '70s, all these other factors, you know, took place, they were garbage waters.

However, we have other systems that have flow patterns that are probably similar. We have impoundments, we have large rivers, we have examples of that in different areas.

MS. FRANZETTI: Well, now be careful, Mr. Sulski, because yesterday we spent a while on establishing that the Agency thinks that these waters are nothing like any other waters in the state.

MR. SULSKI: And I'm focusing on unique flow patterns right now. Overall, there are nothing. And they were carved out because they were the only secondary contact waterways. So they're unique -- that's their most unique aspect I think.

MS. FRANZETTI: Moving on to question six, has the aquatic life present in the CSSC, Chicago Sanitary and Ship Canal, and the Upper Dresden Island Pool also adaptive to the temperature regimes of the waterway?

MR. SMOGOR: The present aquatic life, if it is there, if it has shown persistence without human stocking, then, yeah, to some degree it has adapted to the conditions that are present.

MS. FRANZETTI: Bear with me on question seven, it's a long one. There are some differences in the language of the proposed aquatic life use designations that describe the physical conditions for the use designation to which it appears the aquatic life must be able to adapt. For example, compare, quote, adaptive to the unique flow conditions necessary to maintain navigational use and upstream flood control functions of the waterway system, end quote, which is used in the Upper Dresden Pool rule to, quote, adaptive to the unique physical conditions, flow patterns and the operational controls

necessary to maintain navigational use, flood control and drainage functions of the waterway, which is the language used in the Aquatic Life Use A Waters use designation. Are these similar but different descriptions intended to have different meanings, and if so please explain the difference in meaning.

HEARING OFFICER TIPSORD: Excuse me, before you answer that, that's Section 303.230 and 303.237.

MR. SMOGOR: If you didn't ask the please explain part, I would have had a real short answer to your real long question.

MS. FRANZETTI: Well, take the first one. Always take the easy question first.

MR. SMOGOR: First part, yes. The second part, the different wording is intended to reflect different levels of what we're calling irreversible human impact.

MS. FRANZETTI: That's fine, Mr. Smogor, you handled that quite well.

MR. SMOGOR: It's hard for me to give short answers as you may have already realized.

MS. FRANZETTI: Moving on to 7A, is it the Agency's position that the Upper Dresden Pool does not have unique physical conditions, only unique flow conditions? And now maybe that's changed based on some of the just recent answers. I'm not sure whether you think anything is unique in Upper Dresden Pool at this point so can someone clarify what the Agency's position is on Upper Dresden Pool?

MR. SMOGOR: I can give it a shot. Again, I think the use of the word "unique" was to set it apart from the rest of the waters of the state.

If that word were actually left out of these definitions, I really don't think it would change the substantive meaning of these definitions at all. So there was not -- there was not any real strong intent for that word "unique" to really -- to provide substance to any of these definitions. They can stand alone without that word in there.

MS. FRANZETTI: Moving on to B, what

is the difference between the Upper Dresden Pool, quote, unique flow conditions, end quote, as that phrase is used in 303.237 versus the, quote, unique flow patterns, end quote, as that phrase is used for Aquatic Life Use A Waters in 303.230?

MR. SMOGOR: That was intended to convey that the Group A -- the CAWS Group A waters are subject to more direct human control flow patterns and the CAWS A waters are subject to more direct human control than are the flows in Upper Dresden Island Pool. And, Rob, you can add something to that if you have any more insight on that.

MR. SULSKI: I can add on C if B is answered sufficiently.

MS. FRANZETTI: Well, can I just ask for some elaboration? When you're talking about more direct human controls than is Upper Dresden Pool, what do you mean by that more direct human controls?

MR. SMOGOR: If I understand this correctly, the lock and damn system kind of ends at Brandon Pool Damn, maybe even at the

Lockport Damn for the Chicago Area Waterways. And that is under -- can you help with that?

MR. SULSKI: Yeah. It's got to do with operation. Well, it's got to do with a couple of things. The operation controls, which gets into question 7B, we have direct active operation controls at Lockport, Wilmette, Chicago Harbor and Calumet Harbor. This is where water is and can be allowed to flow in and out rapidly. So those are the operational controls that we talk about.

In addition to that, when you just look at the general features of Dresden Island Pool compared to Brandon Pool and all the other systems upstream, as you go upstream there's relatively less room for over-bank littoral zone amelioration of flows, there's straight walls or some -- you know, when we get into the CAWS A waters there's some littoral zone. You get into the B waters, it's straight walled, whatever flow comes through, it zips through.

So those are the physical characteristics which change flow patterns or

dictate what types of flow will occur in those three systems.

MS. FRANZETTI: And are you also drawing distinction between the fact that for Upper Dresden Island Pool that you just have a lock and damn at the upstream end of the pool and not another lock and damn at the downstream end of what we're calling Upper Dresden Island Pool?

MR. SULSKI: The lock and damn brings ships in and out, it's not a flow control structure. They can't open both sides or they won't be able to close them. They open one side, fill it up, the ship goes down, they close that side, they open the other. So it's not a flow control device, it's a lock to get ships back and forth or boats.

Whereas in Lockport, they have gate valves to drain the system upstream and they do. They pour it in advance of a storm into the Des Plaines River to try and draw the level down upstream to accommodate a storm event.

If they're successful in that,

they close and it acts as a big surge basin. If they're not successful, if they can't get enough water out of the system, boom, it goes out to the lake. And we know it reversals to the lake. So that's a direct control with control structures to accomplish that and to prevent flooding. That doesn't exist at the Brandon Lock and Damn, that type of control arrangement.

MS. FRANZETTI: And that last part, does that answer my next question that the description of the Upper Dresden Pool does not include, quote, operational controls as does the description of Aquatic Life Use A?

MR. SULSKI: If you're satisfied with what I told you.

MS. FRANZETTI: That's really not the gauge. Is that the meaning when?

MR. SULSKI: Yes.

MS. FRANZETTI: -- when the Agency uses operational controls, it's of what you described in the Lockport area versus the Brandon Lock and Damn?

MR. SULSKI: Yes.

MS. FRANZETTI: Moving on to D, in the description of the Upper Dresden Pool aquatic life use in Section 303.237, there is no mention of, quote, drainage functions of the waterway system.

Is it the Agency's position that the Upper Dresden Pool does not serve any drainage functions for the waterway?

MR. SULSKI: No. All waters serve some sort of drainage function.

MS. FRANZETTI: Beyond just the typical drainage function that all waters serve?

MR. SULSKI: Can you rephrase?

MR. ETTINGER: What does drainage function mean? I don't understand your question.

MS. FRANZETTI: Well, that's the language and then I guess you don't understand the regulation. Maybe we should ask that question. What did the Agency mean by its use of the phrase "drainage functions" which is used in 303.230 as well as 303.235 so we can understand it?

MR. SULSKI: Let me just read it here.

(Peruses document.)

MR. SULSKI: So your point is it's mentioned -- it's not mentioned for Upper Dresden?

MS. FRANZETTI: Right. But it's mentioned --

MR. SULSKI: But it is mentioned. And I think the answer that I gave with the -- well, first of all, my first answer, it serves a drainage function, but all waterways serve a drainage function.

We brought Aquatic Life Use A and B waters into the drainage -- we put that in there as a use because of these operational controls which are fairly unique. I mean, I don't know any other system in the state that operates that way.

MS. FRANZETTI: So that does distinguish Upper Dresden Island Pool from any of the waters in Aquatic Life Use B or Aquatic Life Use A, correct?

MR. SULSKI: Yes. It's one of the things.

MS. FRANZETTI: I understand. I didn't say sole distinction.

MR. SULSKI: Okay.

MS. FRANZETTI: Mr. Ettinger, does that provide the explanation of drainage functions for your question?

MR. ETTINGER: I guess so, yes. I have no idea what you were saying, but now we've worked it out.

MS. FRANZETTI: Okay. That's what we want to do. Number eight, does the use of the, quote, adaptive to, end quote, qualifying language mean that only aquatic life that can adapt to these conditions is intended to be protected?

MR. SMOGOR: Yes, given that there are different levels of adaptability. Organisms can adapt to conditions at different levels.

MS. FRANZETTI: And is that consistent with the MBI/CABB 2005 report approach to setting thermal water quality standards that the Agency relied upon here?

MS. WILLIAMS: Can you repeat the question?

It is the second part of the pre-filed question number eight, so if you have it in front of you. And is that consistent with the MBI/CABB 2005 report's approach to setting thermal water quality standards that the Agency relied upon here?

I'm just trying to look for the exhibit if we gave that an exhibit number. I don't think we did. It's part of the pre-filed testimony of Chris Yoder. I think it's in Exhibit 13. You know the report I'm talking about, the recommended thermal criteria.

HEARING OFFICER TIPSORD: Which I think isn't that Exhibit 15, the temperature criteria options for Lower Des Plaines River?

MS. FRANZETTI: Yes. I'm sorry.

HEARING OFFICER TIPSORD: Yes. We did give it an exhibit number because we were referring to it so much, Exhibit 15. That was so long ago I forgot.

MR. SULSKI: I'll start to answer this and Roy may augment my answer. When we're talking about setting thermal standards,

we're talking about protecting certain assemblages but it was based on some species recommended in those thermal criteria.

Now, those species recommended may not -- it looks at the tolerance to temperature to one parameter in those species. So you can't take those species and then apply all that to a balanced system.

So there could be -- I mean, we would protect for some of those species that are most tolerant to temperature or intolerant to temperature or whatever, but that may not necessarily be reflected in what assemblage can be tolerant or intolerant of a general habitat condition. Okay? So it's kind of --

MS. FRANZETTI: There's a bit --

MR. SULSKI: Yeah, there's a bit of a disconnect.

MS. FRANZETTI: Because really the Yoder work doesn't take into account this issue of adaptability to the conditions in the Upper Dresden Island Pool, correct?

MR. SULSKI: Only to the extent that

they believe that the species -- you know, the representative aquatic species lists are adaptable to the types of systems that we're dealing with here.

But that's not the ultimate list of what can be -- what can adapt to these systems. It's just a part of the universe.

MS. FRANZETTI: Are you saying that Yoder did take into account adaptability to the conditions in the Upper Dresden Island Pool?

MR. SULSKI: Well --

MR. TWAIT: I don't know if that's the correct term, adaptive to, for what Chris did. But he did take -- he gave his expert opinion on what might be in these waters and whether they're adaptive to these waters. I mean, he looked at other waters and other systems and determined what he believed would be representative in this system.

MS. FRANZETTI: Moving on to number nine, given that the Brandon Pool is immediately upstream of the Upper Dresden Pool and the Brandon Pool is proposed for a

lower use designation and hence more lenient water quality standards and DO, for the example, than the Upper Dresden Pool which is proposed for a higher use with more restrictive water quality standards, has the Illinois EPA considered the effect of ambient water conditions that would continue to be authorized upstream and whether this may result in upstream dischargers causing violations of the more restrictive water quality standards that apply immediately downstream of the Brandon Pool?

MR. ESSIG: I don't know if this was directly considered, but in the event that that did happen it could be handled through a TMDL program.

MR. TWAIT: I don't know that ambient water conditions is really appropriate here because they're not really ambient coming down into the Upper Dresden Pool because these waters are heated effluent, so I don't know that ambient would be there.

And the second part of that is if this situation does occur and we could deal

with it the same way as we deal with the I-55 bridge where we have a less stringent secondary contact standard going into the general use standard where we could set a water quality -- we could set an ambient station there that the upstream dischargers would have to meet at that point of compliance.

MS. FRANZETTI: Right, so that you could tell at the dividing line between Brandon Pool and Upper Dresden Pool whether or not the water quality standards are being achieved at that location?

MR. TWAIT: Yes. Correct.

MS. FRANZETTI: But if they're not being achieved, then there may be ramifications for the dischargers upstream?

MR. TWAIT: Yes.

MR. SAFLEY: Do you mind if I ask a follow-up question? When you mentioned this issue perhaps triggering a TMDL process, do you mean a TMDL for the Upper Dresden Island Pool or a TMDL for the Brandon Pool or both together?

MR. ESSIG: It would have to incorporate the Upper Dresden Island Pool as well as the upstream reaches that might be impacting that. If the water quality violations are occurring in the Upper Dresden Island Pool, you'd look at all inputs to that pool and those inputs also upstream.

MR. SAFLEY: Right. And I understand that. I guess the scenario I'm thinking of is if the Upper Dresden Island Pool is in compliance except for what's coming out of the Brandon Pool, then those upstream dischargers are triggering the TMDL for the Upper Dresden Island Pool; is that what you're saying?

MR. ESSIG: For the TMDL we'd have to take into account all sources, yes. I mean, if there are point sources that are contributing to that violation, yes, they would be considered within the TMDL process, I believe.

HEARING OFFICER TIPSORD: Mr. Ettinger?

MR. ETTINGER: This is somewhat

hypothetical now, isn't it? Didn't we look at whether or not the water quality is meeting general use standards in the Upper Dresden Pool? Is it meeting those standards currently except for temperature and DO?

MR. TAIT: For temperature and DO, it does not. Well, for temperature it does not. For DO it may or may not.

MR. ETTINGER: But as to every other parameter, the Upper Dresden Pool is meeting general use standards?

MR. TWAIT: I believe so. Chloride is going to be an issue also. But other than that, yes.

MS. FRANZETTI: Just to follow up on that point, when the Agency answers questions like that, you are not considering any water quality based limits that would be derived under Subpart F, correct?

MR. TWAIT: Correct.

MS. FRANZETTI: And Subpart F, under your proposal, will apply to Upper Dresden Island Pool, right?

MR. TWAIT: Yes.

MS. FRANZETTI: So we don't know as we sit here today how many of those chemicals that are subject to derivation of a water quality based effluent limit on dischargers will or will not be met in Upper Dresden Island Pool, correct?

MR. TWAIT: Yes. That is a good point.

MS. FRANZETTI: But for the moment, let's stay with temperature and DO, isn't it foreseeable that upstream dischargers will face more restrictive discharge limits than what's been proposed here for the DO and temperature water quality standards in order to prevent them from contributing to violations of the stricter proposed downstream limit for Upper Dresden Island Pool in these immediately adjacent water bodies?

MR. TWAIT: That is possible, yes.

MS. FRANZETTI: Moving on to G, Section 303.230, Aquatic Life A Use Designation. In its Statement of Reasons, the Illinois EPA states that this aquatic

life use designation is created specifically for just a portion of the CAWS. I think we've already answered this. Sorry. I didn't read ahead. Let me skip it.

I think two has been asked and answered. Same with three. I don't think we covered four.

What is the intended meaning of aquatic life populations as used in the Aquatic Life Use A proposed regulation in Section 303.230? Is it intended to exclude a few fish of a given species that are insufficient to qualify as a population?

MR. ESSIG: No. I think the use of the term aquatic life population what we meant by that was the organisms inhabiting a particular area or locality.

MS. FRANZETTI: Even if there's just a few of them?

MR. ESSIG: I don't think we can consider numbers of organisms at that point.

MS. FRANZETTI: Okay. Moving on to Roman six, QHEI/IBI Data, and these questions relate specifically to Attachment R to the

Statement of Reasons which is the, quote, analysis of physical habitat, quality and limitations to waterways in the Chicago area, end quote, by Edward T. Rankin, Center for Applied Bioassessment and Biocriteria, what we've referred to here by its acronym, CABB.

Question number one, Mr. Rankin suggests that all or most of the CSSC be classified as limited resource water. Does the Agency agree this is the Ohio EPA's lowest use classification for aquatic life?

MR. ESSIG: Yes.

MS. FRANZETTI: Question two, for the Upper Dresden Island Pool area of the Lower Des Plaines, Mr. Rankin notes that habitat was good in the Brandon tailwater area, paren, QHEI equaling 69.5, closed paren, but comments that this site, quote, may not be typical of the downstream reaches, end quote.

Does the Agency agree that the Brandon tailwater area is not typical of the Upper Dresden Island Pool habitat quality?

MR. ESSIG: Yes, it's not typical but it is present and does provide higher quality

habitat than what is present upstream in other waters.

MS. FRANZETTI: Question three, and I'll skip the evidentiary type statement at the beginning of it so as not to evoke any objections. How are the contaminated sediments in the Upper Dresden Pool -- wait, I think we've already covered this. They're really not being considered by the Agency. You've already --

MS. WILLIAMS: Objection.

MS. FRANZETTI: Excuse me?

MS. WILLIAMS: I just didn't want you characterizing the answer. If you want to get the answer out on the record again, you can ask it again.

MS. FRANZETTI: Okay. We can strike my characterization if you think it was such.

Number four, with respect to the Brandon tailwater area, Mr. Rankin also states in his report, Attachment R, that, quote, the isolation of this site, paren, among impounded reaches, closed paren, could influence the potential of that site, end

quote.

Does the Agency agree that the isolation of the Brandon tailwater area reduces its potential as available good habitat for aquatic life in the Upper Dresden Pool?

MR. ESSIG: No.

MS. FRANZETTI: Why do you disagree?

MR. ESSIG: There are major tributaries that do come into the system; Hickory Creek, Jackson Creek and then downstream of I-55 you have the DuPage River and Kankakee River. I would not consider this to be an isolated segment.

HEARING OFFICER TIPSORD: Just a point of clarification, you talked about tributaries coming in downstream of the I-55 bridge?

MR. ESSIG: Well, there was tributaries upstream of I-55 and then there was also major tributaries coming in downstream of I-55 also.

HEARING OFFICER TIPSORD: Okay. But for Upper Dresden we're only talking about

everything north upstream of I-55, correct?

MR. ESSIG: There still are tributaries coming into the Upper Dresden Island Pool.

MR. SULSKI: Can you point out where this isolation of this site is referenced and is it from Rankin or --

MS. FRANZETTI: Yeah, it's from Rankin. As I sit here, I would have to pull it out and find it. Can I do it for you later?

MR. SULSKI: Well, because I have a note here that it's possibly taken out of context because Rankin has -- says a lot more than that about this system.

MS. WILLIAMS: But we can add that to the list of things you'll get back to us on later.

MS. FRANZETTI: Okay.

MR. SMOGOR: Can I make a comment? Rankin's quote that it could influence the potential of the site, that potential -- I'll pass on that. Strike that, please. Never mind. I won't go there.

MS. FRANZETTI: But let me go back to your answer about the tributaries. Do any of those tributaries go into the tailwater?

MR. ESSIG: Yes, Hickory Creek.

MS. FRANZETTI: Hickory Creek goes into the tailwater?

MR. ESSIG: Yes, I believe so.

MS. FRANZETTI: Okay. And that's your basis for saying --

MR. ESSIG: There is another tributary, I believe, that also goes into a smaller tributary. I believe it might be Spring Creek. I'd have to double check.

MS. FRANZETTI: And that's your basis for disagreeing to the extent --

MR. ESSIG: No. There's also Jackson Creek that comes in through the downstream, but it's still upstream of I-55.

MS. FRANZETTI: But Jackson Creek doesn't come into the tailwater area.

MR. ESSIG: But you were referring to the Upper Dresden Island Pool, I believe, not just the tailwater.

MS. FRANZETTI: No. I was just

referring to the tailwater and what we think is Rankin's view.

MR. ESSIG: I don't think Rankin was referring to that that was isolated in relation to the rest of the pool.

MS. FRANZETTI: Okay. You don't think Mr. Rankin meant that the Brandon tailwater is isolated with respect to the rest of the pool?

MR. ESSIG: I don't believe so.

MS. FRANZETTI: Okay. Moving on to question five, I think we've already answered that, but let me ask, A, do the tailwater areas experience the same temperature regime as the other portions of the Upper Dresden Pool?

MR. SMOGOR: I don't know. In the eight miles of the Upper Dresden Island Pool there's likely several different locations that have -- that experience different temperature patterns. So I don't know how well the temperature is in that upper say mile or half mile of Upper Dresden Island Pool compare, are similar or dissimilar from

the other temperature regimes that are in the lower part of that pool.

MS. FRANZETTI: Okay. You are aware, though, that the Brandon tailwater area is shallower than the majority of Upper Dresden Island Pool, correct?

MR. SMOGOR: Yes.

MS. FRANZETTI: And so isn't it likely that given -- well, do you know approximately what the typical depth is in the Brandon tailwater area?

MR. SMOGOR: Not offhand. Do you guys know that?

MR. SULSKI: I mean, I've been in areas that are very shallow, some are six feet deep, some are eight feet deep at least when I was there, so it varies depending where you go. There's some rubble areas. And then it depends on the time of the year, as well, if there's no flow over the damn.

MS. FRANZETTI: Isn't it likely particularly in the summer months that that shallower water in the Brandon tailwaters is

likely to get warmer than the rest of Upper Dresden Island Pool due to solar input?

MR. SULSKI: Again, I'm not looking at thermometer readings so it's hard to say. I mean, is there water coming over the tailwater? What's going on at the time? I don't know.

MS. FRANZETTI: Well, would you agree that it is likely that during the summer that solar inputs to the Brandon tailwater area are going to have a greater impact on its thermal regime than are the thermal effluence discharged by the Midwest Gen plants?

MR. SULSKI: I can't make that determination. I would have to look at data.

MS. FRANZETTI: So as you sit here today you don't know?

MR. SULSKI: I don't know.

HEARING OFFICER TIPSORD: Mr. Ettinger, do you have a follow-up?

MR. ETTINGER: No. We'll look at the discharge monitoring reports at Will County later.

MS. FRANZETTI: Question 5B, how many

fish would you expect or estimate the Brandon tailwater area of the Upper Dresden Pool to support?

MR. SMOGOR: I don't know.

MS. WILLIAMS: Are you asking how many species of fish I assume or how many actual fish?

MS. FRANZETTI: Both.

MS. WILLIAMS: Because you say fishes, right, when you're talking about species.

MR. SMOGOR: Right. When I refer to species -- multiple species, I say fishes.

MR. SULSKI: I will answer the question the same way as the temperature question, I don't know.

MS. FRANZETTI: Moving on to question six, isn't it true that overall habitat quality in Brandon and Lockport Pools is poor and only marginally better in Upper Dresden, which is the conclusion Mr. Rankin reached?

MR. ESSIG: No.

MS. FRANZETTI: Mr. Rankin recommends that the Upper Dresden Pool's use classification should be, quote, modified

warm water habitat, acronym, MWH, hyphen, impounded, end quote, using the Ohio EPA's use classification system nomenclature.

Does the Illinois EPA agree that Mr. Rankin concluded that Upper Dresden Pool did not have the capability of attaining the Clean Water Act Aquatic Life Uses?

MR. SULSKI: Well, Mr. Rankin qualifies that statement saying that it's based on preliminary data. One trip he went out on with myself and we took two measurements, however, he did get a look at the system in general and he goes on to say that it has more natural shoreline, for example, with extensive shallows and cover. So that's just -- I needed to clarify there, that's all.

MR. SMOGOR: I would also like to add that Rankin mentions that -- you used the term recommendation, and in his titles of his different sections in the report he does use the word recommended category, but elsewhere in the narrative he does qualify that and he does call them preliminary suggestions.

MS. FRANZETTI: Moving on to number eight, Mr. Rankin also states that, quote, the physical patterns in these watersheds are very strong and will have a predominant influence on the types of assemblages one might expect, end quote. Does the Illinois EPA agree with Mr. Rankin's statement?

MS. WILLIAMS: Do you have a page?

MR. SULSKI: Yeah, do you have a page?

MS. FRANZETTI: I don't right here, again.

MS. WILLIAMS: I don't think they should answer if they can't go back to the quote. I mean, is that reasonable?

MS. FRANZETTI: I will find it during the break.

Moving on to number nine, I think that's been answered.

In B, most of these were asked back when Mr. Yoder was here. But I didn't ask number six, at least according to my notes. So moving to number six under B, Aquatic Life Use Designations, Appendix Table 1, 2006 QHEI Attachment S. The QHEI scores

in Attachment S are significantly higher than the 2004 Rankin CABB report's QHEI scores that are Attachment R, as well as other QHEI scores collected in previous QHEI surveys on the Lower Des Plaines River which did not identify QHEI scores in the Upper Dresden Pool higher than 67, versus the Attachment S QHEI scores of as high as 80.

Given these inconsistencies, describe what the Illinois EPA has done to confirm the reliability and accuracy of the information contained in Attachment S.

MR. ESSIG: Well, I think Chris Yoder addressed some of these concerns but I'd also like to point out that the statement that there were significantly higher QHEIs at all sites, I don't think that's true. That was primarily the tailwater area.

MS. FRANZETTI: I agree.

MR. ESSIG: And the site that MBI did the tailwater area in 2006 I believe was probably the furthest upstream the tailwaters had been assessed, so that might accomplish some of the differences.

Another issue I have with the statement is that you've indicated that there haven't been -- in previous studies there haven't been previous QHEI values greater than 67. I did find at least four, maybe even five values in previous studies that went up as high as 69.5.

MS. FRANZETTI: We'll change the 67 to 69.5. But has the Agency itself done anything to confirm the reliability and accuracy of the information contained in Attachment S?

I understand what Mr. Yoder testified to, that's on the record. I'm just asking whether the Agency took that Attachment S QHEI information and did any sort of review, QAQC check, whatever you want to call it?

MR. ESSIG: Did take a look at the data sheets, compared them with some of the other QHEI values taken in the area. But beyond that and what Chris Yoder has testified to, I think that's pretty much it.

MS. FRANZETTI: Okay. Moving on to

seven, does the Agency know what caused the QHEI scores in Attachment S to be as much higher as they are than the prior 2003-2004 surveys of the Lower Des Plaines?

MR. SULSKI: Didn't we address this with Yoder?

MR. ESSIG: Yes, we did. I believe there was --

MR. SULSKI: Well, what --

MR. ESSIG: I believe what Chris Yoder had indicated during his testimony is that the channel metric, I believe they had used a version of the QHEI, didn't include impoundments, and he went back and included that so that did lower the scores at two of the sites.

MS. FRANZETTI: Okay.

HEARING OFFICER TIPSORD: I'm sorry, let me ask a follow-up. You said lower the scores, but the Attachment S scores are higher?

MR. ESSIG: Yes. What I meant was after he reviewed the sheets, those scores then came down.

HEARING OFFICER TIPSORD: Okay.

MR. ESSIG: So they were not that much out of line anymore.

HEARING OFFICER TIPSORD: And for the record, I did not have an indication that this had been previously answered.

MS. WILLIAMS: Can I ask a follow-up, as well? Howard, is that reflected in what we've entered as Exhibits 5 and 6 into the record?

MR. ESSIG: Yes.

MR. DIMOND: I would like to ask a follow-up on that. The revised channel metric that Mr. Yoder testified about, was that used in the QHEI scores that were developed, that were reported in the final UAA report or that were reported in Mr. Rankin's report?

MR. ESSIG: Could you repeat the question?

MR. DIMOND: The revised channel metric that Mr. Yoder indicated that he used to revise the scores that were reported in Attachment S, was that changed in the channel

metric used by Mr. Rankin for his report or for the QHEI values that were reported in the final QAA report?

MR. ESSIG: I believe Rankin did use that.

MR. SULSKI: Yeah. That data came after the UAA reports, so couldn't be reflected in the UAA reports A and B.

MR. DIMOND: So the QHEI scores in the UAA report do not reflect this revised channel metric for calculating a QHEI; is that right?

MR. ESSIG: I would have to check. I'm not sure.

MR. SULSKI: The QHEI data within the UAA reports, first the CAWS UAA that CDM did, that it was based on Rankin's report which we have as Attachment R.

MR. DIMOND: I'm really focusing on the UDI Pool because that's all Mr. Yoder --

MR. SULSKI: Okay. On the Upper Dresden Island Pool, we can go back to the report and show you the sources of that data, much of it came from Midwest Generation or

ComEd at the time. And those values are contained with their sources on this series of three maps that we gave out yesterday as Exhibit 30. And those were -- much of those were the basis of the Aquanova report.

MR. DIMOND: But it's not clear -- if I look at Exhibit 30, will that tell me -- that won't tell me how they measured the channel metric in accumulating the QHEI scores, it just gives me a total score, right?

MR. SULSKI: Yes. But then you can go back to the source of these in the report.

MR. DIMOND: So, I mean, here's the point is that Attachment S does not include the revised channel metric. Now, Mr. Yoder went back and calculated the revised channel metric and we got some other exhibit, I can't --

HEARING OFFICER TIPSORD: 5 and 6.

MR. DIMOND: -- Exhibits 5 and 6 that have the recalculated numbers, but if that revised channel metric wasn't used by Mr. Rankin or if it wasn't used in the data

that was in the final UAA report for the Upper Dresden Island Pool, then referring to the change in the channel metric doesn't help explain why Mr. Yoder's QHEI scores were so much higher than the earlier scores because they were using the same procedure that he was using for the numbers that he calculated in Attachment S.

MR. ESSIG: I would tend to agree. I would have to check to see how that metric was used in the earlier reports that were used in the Lower Des Plaines report.

MR. DIMOND: Okay. Thank you.

MR. SULSKI: But to re-point out that there are also some higher values that are in line with what Yoder found from other sources in different areas of the waterway and that's laid out pictorially for you in this Exhibit 30.

MR. DIMOND: Okay.

HEARING OFFICER TIPSORD: I have to ask a follow-up because I'm really confused now because I think we're getting two different answers from the Agency.

Mr. Sulski, were the numbers from Exhibits 5 and 6 used in the UAA report for Upper Des Plaines River?

MR. SULSKI: No.

HEARING OFFICER TIPSORD: Thank you. The Attachment S numbers are the numbers that were used in the UAA report; is that correct?

MR. SULSKI: No.

MS. WILLIAMS: No.

HEARING OFFICER TIPSORD: Okay. I give up then.

MR. SULSKI: You have to go back to the UAA report and see where the numbers came from.

HEARING OFFICER TIPSORD: All right. Thank you. That was my confusion. My confusion was I thought we were talking about -- I'm okay now. I understand now. Thank you.

MS. FRANZETTI: Is the one place that the Yoder numbers -- we'll call them the Yoder QHEI numbers are actually used or mentioned is in your Statement of Reasons to support these proposed rules; isn't that

right?

MR. SULSKI: That's likely true.

MS. FRANZETTI: That's the first time we all hear about them and the Agency makes any reference to them, correct?

MR. SULSKI: Correct.

MS. FRANZETTI: Okay.

MS. WILLIAMS: And can I ask a follow-up?

MS. FRANZETTI: Sure.

MS. WILLIAMS: Is that because the information came in after UAA reports were completed?

MR. SULSKI: Correct.

MS. FRANZETTI: And just to complete it so make sure everybody is on the same page, the Yoder scores that are mentioned in the Statement of Reasons are his uncorrected QHEI scores?

MR. SULSKI: Correct.

MS. FRANZETTI: I think we got it now. Moving on to question 17, I'm jumping a bunch because they were asked back in January, but this one the Agency asked to reserve and we

would come back to back in the January hearing.

How much good -- and I'm defining good habitat as having a QHEI score of greater than 60. How much good habitat is there in each of the subject areas involved in this rulemaking, particularly in the Upper Dresden Pool?

MR. ESSIG: I don't have a percent in relation to area, but I do have a percent in relation to the number of QHEI values that have been generated in these waters.

MS. FRANZETTI: I think Mr. Essig would you please explain a little more what you mean by that so we understand when you give us the percent, what it's a percentage of?

MR. ESSIG: Basically the number of QHEI values that have been determined since the mid '90s all the way through 2006 is what I'm referring to.

MS. FRANZETTI: Okay. Just, again, so we can stay with you and I'm sorry to break in, but are those -- and I hope the answer to

this is yes. Are those the QHEI values that were just mentioned Mr. Sulski as being laid out on the maps that were produced by the Agency yesterday?

MR. ESSIG: Yes. There might be a few more that aren't included in there.

MS. FRANZETTI: Darn.

HEARING OFFICER TIPSORD: And that's Exhibit 30.

MS. FRANZETTI: Thank you. Okay. You took QHEI values, most of which are on Exhibit 30, but there may be a few more that you used that are not.

MR. ESSIG: Let me explain.

MS. FRANZETTI: Okay.

MR. ESSIG: I went back to the Lower Des Plaines UAA report, there was a table in there that has QHEI values for the Brandon and the Dresden Island Pool. It was cited to the ComEd report of 1996 was the source of that data.

Originally, I just used that data from the Upper Des Plaines report. I decided to go back to the original 1996 report and

then from there went to individual reports, 1993 fishers reports and '94 fishers report that were generated by EA as part of that Upper Illinois Waterways Survey.

MS. FRANZETTI: These are reports that were cited in the ComEd 1996 report?

MR. ESSIG: Yes.

MS. FRANZETTI: Okay. So if somebody wants to follow your train, go to the '96 report and then you also looked at references that were contained in there?

MR. ESSIG: Yeah. And when I went to those -- and some other reports also, I think. I'd have to go back and check. I basically used all those to look at the percentages.

MS. FRANZETTI: All right. And now go ahead to tell me what the percentages are you derived.

MR. ESSIG: In the Upper Island Pool roughly 15 percent would be classified as good. In the Lockport Pool there would be none.

MR. DIMOND: Just a clarification,

Mr. Essig, you said that there were none in the Lockport Pool. Did you mean the Brandon Pool?

MR. ESSIG: No. I'm referring to the Lockport Pool on that one.

MR. DIMOND: What is the Lockport Pool?

MR. ESSIG: Upstream Lockport Lock and Damn.

MR. DIMOND: Is that even a segment at issue in this proceeding?

MR. ESSIG: No, it's not.

MR. SULSKI: Well, it is under this whole proceeding. It's part of the CAWS.

MR. DIMOND: It's part of the CAWS, okay.

MS. FRANZETTI: Mr. Essig, did you look at Brandon Pool or no?

MR. ESSIG: Yes, I did.

MS. FRANZETTI: Okay. You're pulling that out for us?

MR. ESSIG: Yes.

MS. FRANZETTI: Okay. We'll wait.

HEARING OFFICER TIPSORD: This might

be a good time to take about a ten-minute break and everybody get up and move around a little bit.

(Whereupon, after a short break was had, the following proceedings were held accordingly.)

HEARING OFFICER TIPSORD: During the break I spoke briefly with Ms. Williams from the Agency and she pointed out that part of the materials that they filed with the Board on March 4th include another qualitative habitat evaluation index scores sort of map, graph kind of thing.

And since we're talking about that right now, we're going to go ahead and enter that as Exhibit 32 if there's no objection. Seeing none, we'll mark this as Exhibit 32.

(Document marked as Exhibit No. 32 for identification, 03/11/08.)

MS. WILLIAMS: Would it be helpful at this point to explain what it is?

MR. CONSTANTELOS: Does anyone have copies?

MS. WILLIAMS: It was in the packet.

HEARING OFFICER TIPSORD: Go ahead, Ms. Williams.

MS. WILLIAMS: Sure. Mr. Smogor, looking at what's been marked as Exhibit 32, did you prepare this document?

MR. SMOGOR: Yes.

MS. WILLIAMS: Would you explain for everyone what it means and what's contained in there?

MR. SMOGOR: This is a visual summary on one page of the information that's in Exhibit 30, the QHEI scores that are assigned to various locations on the maps in Exhibit 30.

So this is one way of just looking at all those scores summarized in graphs and plotted by river mile throughout the Upper Dresden Island Pool.

MS. WILLIAMS: Thank you.

HEARING OFFICER TIPSORD: And I believe when we took a break Mr. Essig was

looking for some material to answer a question.

MR. ESSIG: Yes. The percent of QHEI scores greater than 60 in the Brandon Pool would have been 0 percent.

MS. FRANZETTI: I'm sorry, 0 percent?

MR. ESSIG: Zero percent.

MS. FRANZETTI: This question number 18 may have been answered generally, but I would just like to make sure more specifically I know the answer to this one so I'm going to ask it.

Has it been determined whether any of the areas that received QHEI scores greater than 60 with apparently good habitat are, in fact, unusable as good aquatic habitat because of legacy pollutants and sediment?

MR. SULSKI: It has not been determined. There isn't -- we didn't have information to make that determination.

MS. FRANZETTI: Okay. I'm sorry, I'm jumping. Everything else has been asked through -- go all the way to question 26.

Now, just by way of clarification because it was supposed to follow 25 but I think you've answered 25 yesterday and somebody else asked the question about the fact that the IBI scores are generally 20 suggesting that the existing aquatic life is not achieving its expected biological potential and I think, Mr. Sulski, you've already explained that; would you agree?

MR. SULSKI: Where are we at in terms of waterway reaches?

MS. FRANZETTI: We're in Upper Dresden Island Pool.

MR. SULSKI: Okay. I believe I answered that.

MS. FRANZETTI: Right. Okay. And then so question 26 is how do the many chemical and physical causes of non- to partial attainment identified by the Illinois EPA in their 305B report contribute to these low IBI scores?

MR. ESSIG: When you're talking about the many chemicals and the physical causes, are you still referring to the Upper Dresden

Island Pool?

MS. FRANZETTI: Yes.

MR. ESSIG: There were no causes listed for the Upper Dresden Island Pool in the 2006 report. It was assessed as meeting indigenous aquatic life use, the current designation for that.

MS. FRANZETTI: Yes. Okay. I stand corrected. Let me change the question then taking it away from the 305B report. Have you looked at whether there are any chemical or physical causes of that reduced IBI score for Upper Dresden Island Pool?

MR. ESSIG: I personally have not compared it to the general use standards. That was done in the Lower Des Plaines UAA report, I believe.

MS. FRANZETTI: I'm sorry, Mr. Sulski, did you want to --

MR. SULSKI: He clarified. I wanted to clarify that wasn't Howard's duty to assess these waterways for proposed higher uses.

MS. FRANZETTI: Right.

MR. SULSKI: However, an assessment was done in the UAA reports.

MS. FRANZETTI: Let me ask the question a little differently. Mr. Sulski, you've noted that you think that, you know, there is a disparity between the IBI scores that are down in the generally 20 range and the QHEI scores for the Upper Dresden Pool.

Has the Agency done an evaluation or review to identify what are the causes of the IBI scores being relatively lower than you think they should be based on the QHEI scores?

MR. SULSKI: That's the nature of what the UAAs did. They did a water quality assessment as a part of the process and a near initial part of the process to look at the existing chemical and physical conditions and then compare them against the biological conditions. And when they don't meet, then they try to find out the reasons, try to identify the stressors. So, yes, we did it through our contractors.

MS. FRANZETTI: And what did your

contractors conclude were the reasons for the depressed IBI scores in comparison to the QHEI scores?

MR. SULSKI: In the Upper Dresden Island Pool or across the system?

MS. FRANZETTI: Upper Dresden Island Pool.

MR. SULSKI: Temperature was identified as a significant stressor.

MS. FRANZETTI: Anything else?

MR. SULSKI: Was DO on the edge?

MR. TWAIT: Yes.

MR. SULSKI: DO was another parameter -- chemical parameter.

MS. FRANZETTI: Anything else?

MR. TWAIT: Off the top of my head I believe copper was also, but we've -- I believe copper was also.

MR. SULSKI: Let me add that copper was also identified in CAWS. We were able to look at data when we put together this proposal that was generated and submitted to us afterward, after the reports were done at the conclusion of the contractor's work and

at least in the case of CAWS many of those parameters of concern dropped out.

MS. FRANZETTI: You know, if I may, and if you don't know the answer I'll understand, but just as an aside we really haven't discussed the contractor who did the UAA report for the Lower Des Plaines, that was Dr. Novotny and Hey and Associates. Are you familiar with what their prior experience was or familiarity was with the Lower Des Plaines River that they did the UAA report on?

MR. TWAIT: No, I can't say that I would know.

MS. FRANZETTI: Okay. Moving on, question 27, I'll skip the preamble part and just let me ask the first foundationary question. Has ammonia been identified as a major stressor in the system?

MR. ETTINGER: Currently or ever?

MS. FRANZETTI: Currently.

MR. ESSIG: Are you referring to the UAA report or to the Section 305B, 303D assessment?

MS. FRANZETTI: Anything. I don't want to exclude anything. I'm trying to understand whether the Agency thinks that ammonia is a major stressor in the system.

MR. ESSIG: I'm going to refer to the 305B, 303D report. Ammonia was not listed as a cause of impairment for the Upper Dresden Island Pool because it was considered to be meeting its designated use.

Ammonia was identified as a potential cause in one the Sanitary Ship Canal segments and also in the Grand Calumet River. Those were the only two segments that listed ammonia. And I would not consider them to be major stressors in the -- the violations of the water quality standards were rather low compared to other stressors like dissolved oxygen.

HEARING OFFICER TIPSORD: Mr. Essig, you need to keep your voice up. You trail off especially when you start looking down at your notes.

MS. FRANZETTI: And just so we can put that in perspective for purposes of the

proposed rules, and I must admit offhand I forget, do the proposed rules propose to make the ammonia standards stricter than the current secondary contact against which those conclusions were made?

MS. WILLIAMS: Are we asking about the entire waterway here?

MS. FRANZETTI: Well, I mean, I was trying just for simplicity, but you know what, I'll take it as just stick with the Lower Des Plaines River portions, Chicago Sanitary and Ship Canal, Brandon and Upper Dresden Island Pool.

MR. TWAIT: Yes, I believe they are more stringent than the other standards.

MS. FRANZETTI: And so, therefore, if a comparison were done today using the same data Mr. Essig was referring to, we might find both more and a greater severity of noncompliance with the proposed standard?

MR. TWAIT: Let me look through --

MS. WILLIAMS: Let's pull out the current standard.

MR. ETTINGER: Which waters are we

talking about, the waters in which Mr. Essig identified had been listed as an ammonia problem or the Upper Dresden Pool?

MS. FRANZETTI: Okay. Good point. Why don't we stick with what Mr. Essig relied on.

MR. ESSIG: It would have been the Sanitary and Ship Canal and the Grand Calumet River.

MR. SULSKI: Can I tell you about ammonia in the Lower Des Plaines system first and then we'll look into CAWS?

MS. FRANZETTI: Sure. I think that would be helpful.

MR. SULSKI: You can find the results of that on Page 244 of Attachment A of -- these are the UAA conclusions for the Lower Des Plaines. And I'll summarize it for you, but you can read it to yourself. And that is that both an acute and a chronic standard would be met. In other words, they didn't identify ammonia as a stressor in the system based on their comparisons.

MS. WILLIAMS: It's my recollection --

I don't know if this helps or makes it more confusing, but it's my recollection that at the time this report was prepared that Illinois was in the process of updating its ammonia water quality standards.

So I don't think -- I mean, they looked at the criteria document that that update was based on, but I don't know per se that anyone looked at that time at what's on the books now for general use.

MS. FRANZETTI: Well, tell you what, in the interest of time do you want to set aside this specific question about what do we think will be the state of compliance with the proposed ammonia water quality standards?

MR. SULSKI: Good call.

MS. FRANZETTI: Arguably, it's starting to get into the criteria which we -- moving on to C, QHEI/IBI Data, CAWS and Brandon Pool Aquatic Life Use B Waters. And I know since these questions were submitted we now have had a lot of QHEI maps and scores come out. In looking at the Exhibit 32 that we were just referring to earlier, is it

correct that stops at Brandon Lock and Damn, so it would not address the Brandon Pool QHEI data, correct?

MR. SMOGOR: Correct.

MS. FRANZETTI: Do we now have a map that would show QHEI data in Brandon Pool?

MR. SMOGOR: No.

MR. SULSKI: No.

MS. FRANZETTI: All right. So then I should still ask this question. I thought that was the case but I just wanted to clarify.

Question one, on Page 17 of the Sulski pre-filed testimony it is stated that the, quote, QHEI scores in the CAWS and Brandon Pool Aquatic Life Use B Waters generally are below 40 and IBI scores generally are below 22, which are to be expected in waters with very poor to poor habitat attributes. Identify the source or attachment in which this QHEI data is contained.

MR. SULSKI: And then I would refer to both of these Exhibit 30 and -- well,

Exhibit 30 will give you the sources.

MS. FRANZETTI: Okay.

MR. SULSKI: Wait, we're talking about -- not for Brandon. So for Brandon Pool it would be the Attachment A.

MS. FRANZETTI: The UAA report?

MR. SULSKI: Correct. And then the source is cited in that report.

MS. FRANZETTI: Okay. On Pages 11 to 12 of the Twait pre-filed testimony it is stated that White Sucker was added to the list of representative aquatic species, RAS, for the CAWS and Brandon Pool Aquatic Life Use B Waters, quote, based on the fact that White Sucker is present in certain waters. Identify the waters referenced in this testimony and the data on which this statement is based.

MR. TWAIT: I want to make a clarification here. The White Sucker was not added to the CAWS and Brandon Pool life Use B waters. The White Sucker was added to the CAWS Aquatic Life Use A waters.

MS. FRANZETTI: Okay. And so was your

testimony referring to certain waters in the Aquatic Life Use A areas?

MR. TWAIT: Yes.

MS. FRANZETTI: Can you tell us which those are?

MR. SMOGOR: Not off the top of my head. But when Scott asked me about that I was using the fish data that were in the CAWS UAA Attachment B.

MS. FRANZETTI: So Mr. Smogor, what you're telling me is if I go look at Attachment B, the UAA report for the CAWS, I should find some information about where White Sucker is present?

MR. SMOGOR: Yeah.

MS. FRANZETTI: Okay. Moving on to Roman seven, Effluent and Waterway Management Controls, and this regards Mr. Sulski's pre-filed testimony at Page 18. Number one, regarding a statement that, quote, the UAA found that attainable uses were in some cases not achievable without overcoming dissolved oxygen, temperature and bacteria limitations, what, quote, unquote, cases are being

referred to here?

MR. SULSKI: It would be in the CAWS UAA Report B, they went reach by reach and identified which reaches failed their screening criteria for various parameters, including oxygen, temperature and bacteria.

MS. FRANZETTI: Moving on to question two, does the Illinois EPA contend that the attainable use for the Chicago Sanitary and Ship Canal is not attainable solely because of temperature?

MR. SULSKI: I believe there were DO deficiencies or DO and temperature conditions identified in the Chicago Sanitary and Ship Canal.

MS. FRANZETTI: So it's not the Agency's position that temperature alone is preventing any such use from being attained?

MR. SULSKI: Correct.

MS. FRANZETTI: Same question, number three, with respect to Upper Dresden Island Pool, does the Illinois EPA contend that an attainable use for the Upper Dresden Pool is not attainable solely because of temperature?

MR. SULSKI: For the most part, yes.
MS. FRANZETTI: I'm sorry, so for the most part you are contending that temperature is preventing the Upper Dresden Pool from --
MR. SULSKI: Yes.
MS. FRANZETTI: Okay. So can you identify what the use is that's not being attained due to temperature and the basis including any supporting technical and scientific data for the statement that for the most part temperature is preventing any such use from being attained?
MS. WILLIAMS: Well, can we break this up, I'm getting lost?
MR. SULSKI: Well, if you refer back to the Aquanova UAA report, Attachment A, there's discussion in their comparisons that the temperatures at times would be lethal. And then if you look at the criterion or the criterion parts of the standard, the temperature numbers that we're proposing and you compare existing conditions to those, then that supports what the Lower Des Plaines UAA is contending.

MS. FRANZETTI: And at those times when the Aquanova report says the there were lethal temperatures, were there reports of fish kills?

MR. TWAIT: I'm sorry, I thought Rob said that the Aquanova report was talking about -- the Aquanova report, as I have said before, misspoke when they said that there was lethal temperatures.

MS. FRANZETTI: That's what I thought he said in January but I thought maybe we were changing the position again.

MR. TWAIT: No. I misunderstood Rob when he said -- if he said that. And I've made some corrections that were submitted and those statements made by Aquanova were not correct --

MS. FRANZETTI: Okay.

MR. TWAIT: -- about the ambient temperature.

MS. FRANZETTI: Right. I understand. And that's why I am pressing for what is the basis for saying that it's temperature that for the most part is preventing the Upper

Dresden Pool from attaining a higher use?

MR. SULSKI: Well, I'm going to let Scott follow up because I don't want to cut my throat here. But it's my understanding that temperature is the only limiting factor left in trying to identify stressors in the Upper Brandon Pool is what we're -- or I'm sorry, in the Upper Dresden.

MR. SMOGOR: When you say --

MR. SULSKI: Let me strike that because we're back in the Upper Dresden Island Pool.

MR. TWAIT: According to our contractor, the Upper Dresden Island Pool should have lower temperatures based upon his analysis, so that's where that statement would come from that we believe it's a limiting factor.

MS. FRANZETTI: Mr. Twait, do you believe there are other limiting factors in Upper Dresden Island Pool?

MR. TWAIT: I'm not sure.

MS. FRANZETTI: What about --

MR. TWAIT: I think temperature is the

major factor here.

MS. FRANZETTI: Do you think that flow alteration is a factor?

MR. TWAIT: I would have to defer to the biologists.

MS. FRANZETTI: All right. We've already established, we just don't know about -- or the Agency doesn't feel it knows enough to say whether contaminated sediment is. What about lack of adequate good to excellent habitat, that's not a major factor?

MR. TWAIT: I would have to defer to the biologists for that.

MR. SMOGOR: If I may, the use that we proposed for Upper Dresden Island Pool, the biological potential that that use represents, we believe that that potential is attainable given the irreversible human impacts that occur in Upper Dresden Island Pool which include some aspects of flow that are obviously non-natural and also some aspects of habitat that fall short of obviously non-natural habitat.

But given the availability of that

template, which we're judging is irreversible, we still believe that the goal that we've set for that water in terms of the aquatic life use is reasonable.

MS. FRANZETTI: Okay. And accepting that, is it the Agency's position that -- let me step back because this is important I think, very important points for all of us to understand.

Today, the Agency's position is that Upper Dresden Pool does not attain the proposed use designation?

MR. SMOGOR: Yes.

MS. FRANZETTI: Okay. And what the Agency is saying is that the major reason it doesn't is temperature?

MR. SMOGOR: Yes.

MS. FRANZETTI: No other significant causes to it not being able to attain today this proposed use?

MR. SMOGOR: We believe that the primary problem keeping it from reaching that goal that we've set is temperature and temperature related. Temperature has effects

on other things, one notable one is dissolved oxygen. The warmer the water gets, the less it can hold dissolved oxygen. So there are these synergistic effects of temperature on factors other than just the temperature effect on the organisms living there.

MS. FRANZETTI: But Mr. Smogor, didn't we just -- I think it was yesterday and I think it was Mr. Twait who pointed it out that at the I-55 bridge where there is extensive monitoring done of both temperature and DO and even at the current higher thermal standard that applies from what you've proposed here for I-55, Mr. Twait, didn't you say you don't see DO violations even of the more stringent DO standard that exists today than what you proposed here?

MR. TWAIT: That's the limited data that I looked at in Appendix A, that is correct.

MS. FRANZETTI: That data is limited?

MR. TWAIT: I believe the data that I was looking at just had a couple years in it.

MS. FRANZETTI: Okay.

MR. SMOGOR: But I'd also like to add I do believe that the Attachment A, the Lower Des Plaines River UAA does provide some evidence of excursions below the existing standard -- I'm sorry, below the existing general use standard.

They did compare it to the existing general use standard which has since changed, effectively, excursions below 5.0 milligrams per liter.

HEARING OFFICER TIPSORD: And we're talking about dissolved oxygen when you talk about excursions, not temperature?

MR. SMOGOR: Dissolved oxygens, sorry.

MS. FRANZETTI: Do you know whether any of those were associated with CSO events?

MR. SMOGOR: I don't know for sure.

MS. FRANZETTI: Would you agree that that would be a relevant consideration before temperature is blamed?

MR. SMOGOR: Sure.

HEARING OFFICER TIPSORD: Ms. Franzetti, before you move on, Mr. Twait, earlier you referenced the fact that you had

submitted some edits to the UAA Attachment A on the thermal issue in particular. And since we're discussing that, I think it might be helpful if we go ahead and enter that as an exhibit, as well. Just to be sure, it's the edits to the Lower Des Plaines UAA, Attachment A to the Illinois EPA's Statement of Reasons that was filed on March 4th; is that what you were referring to?

MR. TWAIT: Yes.

HEARING OFFICER TIPSORD: Those were filed on March 4th and we will enter that as Exhibit No. 33 if there's no objection. Seeing none it is Exhibit 33.

(Document marked as Exhibit No. 33 for identification, 03/11/08.)

HEARING OFFICER TIPSORD: Go ahead, Ms. Franzetti.

MS. FRANZETTI: I think in the exchange that we just had I pretty much covered question four.

Question five, can you describe

the expected improvements to these limitations caused by temperature that will occur, and I'm going to change this to the Upper Dresden Pool, based on requiring effluent cooling?

MR. SULSKI: I should strike Sanitary Ship Canal?

MS. FRANZETTI: For now. I want to stay with -- we were just talking about the Upper Dresden Pool so I want to stay with that. The next question is the same question with the Upper Dresden Pool so I'm really asking question six before question five.

MR. SULSKI: Well, a couple of things come to mind. If you have an elevated temperature that is pervasive throughout some portions or that creates a block in a system, you're going to disrupt aquatic species for migrating around that system.

For example, the temperature is high, they'll want to avoid it, they won't be able to get at these pockets of habitat that we've identified. That's something that comes to mind.

And then just general improvements that occur with the lowering of temperature and removing that stressor, general improvements in aquatic life assembly.

MS. FRANZETTI: Same question with respect to the Chicago Sanitary and Ship Canal, please describe the expected improvements to the, quote, limitations, end quote, caused by temperature that will occur in the Chicago Sanitary and Ship Canal based on requiring effluent cooling.

MR. SULSKI: I would reiterate what I just said about the Upper Dresden Island Pool, but I would add the dissolved oxygen problems that also exist more dramatically in the south branch of the upper Chicago Sanitary and Ship Canal so that now you have two major stressors interacting with each other so removal of either one of those will result in improvement -- should result in improvements.

The other thing that's a little unique to this situation is if you look at the -- I'm going to call it the Lockport

Pool, although it's not been referred to, but we'll call the Lockport Pool everything that's upstream of the Lockport area and goes out to the control structures that prevent water from coming in and out of Lake Michigan. We have the Calumet system on the south and then we've got the Chicago River system on the north.

Well, sort of in the middle you've got the south branch and the upper part of this Chicago Sanitary and Ship Canal. If you have a stressor blocked there, you've really basically cut off communications, you've essentially reduced that to two zones now, and so you're preventing migration, immigration, emigration through that system by aquatic wildlife, you've set up a block. So that's an added problem in that system.

For example, there's limited habitat for spawning purposes in the Chicago River system. However, if you get into the Little Calumet River system and the Little Calumet lower leg where there's general use waters and that, you have more availability

there. But if you cut off the communications in that system, you know, that's an impairment right there in my view.

MS. FRANZETTI: When you say the communications in that system, do you mean the ability to get from one spot to another throughout the system?

MR. SULSKI: Yes.

MS. FRANZETTI: But isn't that already somewhat inhibited by that invasive species electric barrier?

MR. SULSKI: Well, that's true, but that invasive barrier is downstream, there's communication cut off between -- in that lower Sanitary Ship Canal between the barrier zone area and whatever can come in at the Lockport lock, but that's a small Use B reach. That's already limited by severe habitat restrictions and that.

I'm talking about in the south branch and the north Sanitary Ship Canal, just a thermal and DO bifurcation of that whole system.

MS. FRANZETTI: Do you know whether

that bifurcation, you've also called it I think blockage, occurs presently? I mean, isn't it possible that the temperatures will stratify vertically and allow fish to swim under the warmer surface waters?

MR. SULSKI: I don't have the data to support that.

MS. FRANZETTI: Or to refute it?

MR. SULSKI: I do have some data on dissolved oxygen that indicates dissolved oxygen drops to zero at times.

MS. FRANZETTI: During CSOs, correct?

MR. SULSKI: Yes.

MS. FRANZETTI: That is not typically a time of high effluent temperature being the cause of the ambient elevated temperatures, correct?

MR. SULSKI: That is correct. However, the CSO events consist of solids and floatable material, organically rich material which then settles out in the system again and then gets churned up by barges and traffic. And then if the temperature is raised, it starts decomposing. It's an -- I

couldn't design a better in situ treatment system than exists there, I'll tell you.

HEARING OFFICER TIPSORD: Mr. Harley, you have a follow-up?

MR. HARLEY: Mr. Sulski, is it your testimony that temperature block at a single location in a stretch of waterway can affect the entire waterway?

MR. SULSKI: Yes.

MR. HARLEY: Where are the temperature blocks in the Chicago Sanitary and Ship Canal.

MR. SULSKI: The south branch and the upper Sanitary Ship Canal.

MR. HARLEY: Can you attribute those temperature blocks to specific sources?

MR. SULSKI: Yes.

MR. HARLEY: What are those sources?

MR. SULSKI: Power plants.

MR. HARLEY: How do the temperature or the thermal conditions attributed to those power plants affect DO levels in the Chicago Sanitary and Ship Canal?

MR. SULSKI: In a number of ways.

I'll cite two, which I already did. If you raise the temperature, you raise the activities of decomposers, organisms that decompose organic matter. And if you have food there for them, their metabolic rate will increase and they will start to consume those organics and may extract oxygen from the waterway, so the oxygen subsequently lowers.

I lost my train of thought. Sorry. Could you repeat the question? I had a couple in mind and I lost my train of thought.

MR. HARLEY: Yeah. You said that there were two ways in which temperature and DO were related to one another.

MR. SULSKI: Okay. The other thing is saturation -- a chemical saturation situation. The higher the temperature, the less dissolved oxygen water can hold.

MR. HARLEY: And so is it your testimony that if you were to limit excessive thermal conditions in waste water from the sources you've identified, that would improve

both temperature and DO conditions in Chicago Sanitary and Ship Canal?

MR. SULSKI: Correct.

HEARING OFFICER TIPSORD: Mr. Harley, you need to identify yourself for the court reporter.

MR. HARLEY: I'm sorry. My name is Keith Harley, Chicago Legal Clinic on behalf of the Southeast Environmental Task Force.

HEARING OFFICER TIPSORD: Thank you.

MS. FRANZETTI: I'm sorry, Mr. Sulski, I just don't understand how you can adamantly or definitively say there are blockages when you can't tell me whether or not it is vertically stratified or not.

I specifically asked the question of is it possible that the temperatures will stratify vertically and allow fish to swim under the warmer water and you said you don't know.

MR. SULSKI: I don't know.

MS. FRANZETTI: So how can you answer Mr. Harley and say there's a blockage there? I don't understand.

MR. SULSKI: Okay. It's my understanding through the interaction of dissolved oxygen and temperature that we have a multi-stressor block in that system with contributions from both temperature and DO and I think that that would occur regardless of whether there's a zone to go below a higher temperature or not.

MS. FRANZETTI: What's your understanding based on? I mean, other than your opinion, what data is it based on?

MR. SULSKI: I have data that dissolved oxygen drops to zero in that zone.

MS. FRANZETTI: When?

MR. SULSKI: After overflow events.

MS. FRANZETTI: Okay.

MR. SULSKI: And I also know that temperature increases metabolic rate, and so based on that connection, that that exacerbates that problem.

MS. FRANZETTI: I understand those principals. Have you looked at your data of when you get those low DOs down to zero what's happening on temperature? I mean, has

temperature gone up at the time that you get those low DOs so you see a correlation between high temps, low DO?

MR. SULSKI: Let me give you my observations of what occurs out in the waterway.

MS. FRANZETTI: No. I'm asking you about data. Is there data to back up this alleged connection between the cause of the low DOs being high temperatures? That's what I am asking. I don't want judgments anymore. I want to know if there's data to back up these judgments.

MR. SULSKI: Okay. Let me just -- may I just explain to you what happens during a fish kill or a stress situation in that zone of the waterway?

MS. FRANZETTI: Mr. Sulski, you could explain it but it's not the question I'm asking. And I don't know why the Agency is fighting us on this. Is there or isn't there this data?

MR. SULSKI: I'm not trying to fight you.

MS. WILLIAMS: Are you asking if there is or is not thermal stratification data, is that your question?

MS. FRANZETTI: No. I'm asking whether there is data showing that when you're getting these low DOs that are apparently now being blamed on the high temperature, you have data showing there's high temperatures at the time or higher temperatures causing these low DOs. I want to see if the data supports the judgments.

MS. WILLIAMS: So you're asking if there's contemporaneous data for temperature and DO at the low DO times that can be compared to each other?

MS. FRANZETTI: Right.

MR. SULSKI: I haven't personally looked at that same time comparison. I believe that the data exists. And I believe that the contractor got some of that data, too, because we were supplied with a lot of continuous monitoring data by MWRD that includes temperature and DO.

MS. FRANZETTI: Okay. You think it

exists but you don't know whether it shows that correlation?

MR. SULSKI: Well, I know that the data exists and I would have to go back to prove that relationship, yes.

MS. FRANZETTI: Okay. Fair enough.

MR. SULSKI: I would like to add something to that.

MS. FRANZETTI: Okay.

MR. SULSKI: And that is my observations on when fish kills and fish stresses because we're talking about blockages that include thermal and DO situations. There's a third example that occurs. And this is when we get fish kills in stress situations in the south branch and in the upper Sanitary Ship Canal, it's a typical situation where you have the hot season, late July/August, the temperatures are elevated, especially in that reach of the river, you have a storm event that results in -- are you listening?

MS. FRANZETTI: I'm listening. I'm trying to find the south branch on the map.

MR. SULSKI: Please do.

MS. FRANZETTI: Okay. I'm sorry, Mr. Sulski, just so we can understand where you're talking about, when you refer to the south branch could you take one of the maps? Some people are saying are you talking about Bubbly Creek.

MR. SULSKI: Yes. If you'll hone in on your Fisk and Crawford power plants, that's the area I'm talking about.

MS. FRANZETTI: In between those two?

MR. SULSKI: Up stream, downstream, around those areas.

MS. FRANZETTI: Okay.

HEARING OFFICER TIPSORD: And for the record, those are marked in red on all three exhibits, 27, 28 and 29. The Fisk and Crawford plants. I'm sorry, just on Exhibits 26 and 27. Sorry. It's all running together.

MS. FRANZETTI: And Mr. Sulski, again, before you go further, when is or was the fish kill that you're talking about that's in this area?

MR. SULSKI: I've worked for the Agency for 25 years, I can give you fish kills and fish stress times that were reported and that we went out and investigated. So they've occurred on and off for the last 25 years that I have been with the Agency.

MS. FRANZETTI: In this area?

MR. SULSKI: In that area, yes.

MS. FRANZETTI: Okay.

MR. SULSKI: Fish stress situations where the fish are at the surface sucking water, that the carp are up at the surface sucking air I mean, so that's a stress situation.

Typically what occurs in this system is in July and August when the temperatures are as high as they get in that reach, we have these significant storm events, the sewers overflow, organic matter gets put into the system, the DO drops to zero or somewhere around there and the temperature drops. So what happens is the fish get triple whammied.

First of all, they're under a stress situation because of high temperature, then you drop the temperature by more than four or five degrees, that's a reverse thermal stress situation, then you hit them with all this sewage and you drop the oxygen down to zero and they croak. They don't outright croak, they're sucking air at the surface or they're just floating back down the system.

So this is a third situation as an example of what occurs in this zone. And this is why I bring in both temperature and oxygen as leading stressors in that situation. And if that occurs every year, it's a triple whammy stressor.

MS. FRANZETTI: Is there data on these fish kill situations you're talking about?

MR. SULSKI: There are investigations and reports, yes.

MS. FRANZETTI: Okay. Are any of these in the last ten years?

MR. SULSKI: I believe there are some in the last ten years, yes.

MS. FRANZETTI: Okay. We're not aware.

MR. SULSKI: I have a good file on that.

MS. FRANZETTI: Okay.

MR. SULSKI: That won't account for situations where fish aren't dead in huge numbers where it gets reported to us. We respond to reports. We don't run out there when that situation occurs. The data will be -- it will underestimate the situation. But we'll provide you with that.

MS. FRANZETTI: Okay. Moving on to question six, describe the expected improvements to any, quote, limitations caused by temperature that will occur in the Upper Dresden Island Pool based on requiring effluent cooling.

MR. SULSKI: Well, if we remove what we consider to be a thermal -- if what one would consider to be a thermal barrier, there would be more freedom for aquatic life to move about the pool and get into and out of some of these zones of reasonable habitat

that we've identified.

MS. FRANZETTI: Okay. More freedom of movement for the aquatic life. Any other expected improvements from requiring effluent cooling for Upper Dresden Island Pool?

MR. SULSKI: Well, I would expect that if we remove stressors, temperature being one, that are subsequent assessments, that being IBI, et cetera, would be more commensurate with the habitat that exists out there as opposed to currently the disparity that exists between what we expect based on habitat to what is actually occurring in terms of aquatic life right now.

MS. FRANZETTI: And can you -- I understand you say the IBI is going to improve. Can you give us anything more specific about how the aquatic life will change out there?

MR. SULSKI: Well, I've given two examples.

MS. FRANZETTI: I'm sorry, is one example more freedom of movement?

MR. SULSKI: Freedom of movement to

occupy a restricted -- some of these habitat areas that we have?

MS. FRANZETTI: What was the second.

MR. SULSKI: Improvement in the aquatic life condition as reflected in aquatic life.

MS. FRANZETTI: That's the one I'm asking you to -- you know, the mere statement that the IBI is going to improve somewhat doesn't mean anything more than that. What will we see reflected out there in the aquatic life?

MR. SMOGOR: If we're improving conditions that we believe are limiting or keeping water from attaining a biological condition that would meet a proposed goal, there are a number of ways waters can improve or the biological community can change to go from a lower biological condition to a higher biological condition.

One of the most common is you allow more different types of organisms, you create a better situation for organisms that are precluded or effectively precluded, they

occur at such lower numbers or they're barely holding on. If you improve these conditions, these organisms will move in and say, yeah, that's good for me now and you're more likely to encounter them. And so one real common manifestation would be a greater number of species showing up with persistence?

MS. FRANZETTI: And that's really what we're getting at here is who do you expect to show up? I mean, it's great to say, well, you know, we think that more species are going to show up if we require all these dischargers to cool their effluent. But who is going to show up? Where is there some certainty to what is this degree of improvement that's going to occur?

MR. SMOGOR: They're showing up. And there's also if they're barely holding on or barely subsisting, then species that are barely subsisting will probably benefit as well. And given that they're already there, they'll show up probably in greater numbers. And you're achieving the balance then. Balance isn't just based on who is there and

who isn't there. Balance is based on the relative numbers of what is occurring there as well.

So, for example, maybe -- and I don't know all the details of what species are living there in exactly what numbers right now. But one thing that wouldn't be surprising would be for some of the organisms, some of the say fish that live downstream, assuming that they're not being blocked by some negative conditions below I-55, would be more inclined to and be better able to be supported above I-55 if these changes occur.

MS. FRANZETTI: Because above I-55 has got better habitat than below I-55?

MR. SMOGOR: No, not necessarily better. But we expect that because we believe temperature and things associated with temperature are limiting the biological potential, again, we've set the biological potential based on what we believe the habitat can support above I-55. Upper Dresden Island Pool is what I'm referring to.

So it wouldn't be surprising to find species that can occur down stream and aren't really found at all or aren't really found at high numbers in Upper Dresden Island Pool, that if you address what you believe is limiting there, you will find more of them occurring up in that area after that is addressed.

MS. FRANZETTI: And you would agree with me, though, that if you are wrong about what is limiting them, we won't see these probable or likely improvements by requiring effluent cooling, correct?

MR. SMOGOR: Yes. If we're wrong -- I'd also like to add that when we're setting standards about what a water should be to allow a particular situation, meeting just one of those standards doesn't guarantee that you're going to get the ultimate goal that you're shooting for.

These are requirements kind of one at a time requirements that in total must exist in order to allow attainment of the potential.

MS. FRANZETTI: I thought we've just spent a fair amount of time today with the Agency saying that in Upper Dresden Pool it's temperature.

MR. SMOGOR: It's primarily temperature. And you're right, if we're wrong about what the primary one is, then I agree with the way you stated it.

But I don't want to say temperature has been identified as the sole, only limitation. I can't say that based on the information.

MR. SULSKI: We also discussed the interaction between temperature and oxygen.

MS. FRANZETTI: I understand.

MR. SULSKI: So if you reduced the temperature, it's possible DO will raise as well just by reducing temperature.

MS. FRANZETTI: I understand. I understand. That's possible, other things are likely, but we don't really know.

MR. SULSKI: The other thing I wanted to point out was that, you know, we have the Upper Dresden Island Pool, we also have a

Dresden Island Pool, we have downstream of I-55 which goes all the way to the Dresden Lock and Damn, correct?

MS. FRANZETTI: Correct.

MR. SULSKI: We also have the very large Kankakee River coming into that system.

MS. FRANZETTI: Right. And below I-55 we've got cooler waters, don't we?

MR. SULSKI: I guess my point is that there's a pool of species diversity out there that could contribute to a re-population of this area with an aquatic life that is commensurate with what we expect should occur here.

MS. FRANZETTI: I understand. But I think it's important as well to acknowledge that below I-55 is general use thermal standards, right, that's what's applicable there?

MR. SULSKI: Yes.

MS. FRANZETTI: Today?

MR. SULSKI: Yes.

MS. FRANZETTI: And has been for years, correct?

MR. SULSKI: Yes.

MS. FRANZETTI: And those are cooler temperatures, correct?

MR. SULSKI: Yes.

MS. FRANZETTI: So what are all the species that exist below I-55 bridge that don't exist in what here we're calling Upper Dresden Island Pool above I-55?

Have we done that comparison to see what are all the additional species that are there in the cooler general use waters but are not up in the Upper Dresden Island Pool waters that I guess are among those you may feel are likely to come upstream?

MR. SMOGOR: We haven't examined specifics. And when I say coming from downstream, I'm not only limiting that to the Des Plaines River below I-55 as the only source of coming from downstream.

So there is the possibility for fish to move from the Kankakee River system all the way up because there's a connectivity with the Kankakee River system, as well.

MS. FRANZETTI: Mr. Smogor, what I'm

trying to I guess underscore is that if temperature were such a major constraint, then wouldn't I be seeing a distinct difference below I-55 bridge versus above I-55 bridge because, if anything, isn't there in that area immediately downstream of I-55 bridge somewhat better habitat than exists in Upper Dresden Island Pool?

MR. SMOGOR: I don't know. I don't know how much better it is below I-55.

MS. FRANZETTI: Would you agree it's no worse?

MR. SMOGOR: Yeah. I know that the UAA, the Attachment A makes some of those comparisons. I don't know offhand, so if we wanted to check that, we can check some of the information. Although, that is only based on a limited set of habitat information.

MS. FRANZETTI: I've been asked just as a quick follow-up when Mr. Sulski referred to after a CSO event cooling the waters by four to five degrees, were you talking in terms of Celsius or Fahrenheit?

MR. SULSKI: Either one. There's even more substantial drops from that. So if we're not at the Fahrenheit scale, let's bounce it to centigrade.

MS. FRANZETTI: So it's four to five centigrade?

MR. SULSKI: Yeah. I mean, there are significant drops in this temperature that result in thermal stress.

MR. ETTINGER: Can I just ask one question as a follow-up. Have you ever looked at the temperatures that exist below the I-55 bridge and compared them with the aversion temperatures that Chris Yoder presented in his report?

MR. TWAIT: No, I don't believe we have.

MR. ETTINGER: Thank you.

HEARING OFFICER TIPSORD: For clarification, Chris Yoder's report?

MR. TWAIT: Exhibit 15?

HEARING OFFICER TIPSORD: Exhibit 15?

MR. ETTINGER: Yes.

HEARING OFFICER TIPSORD: Exhibit 15.

Thank you.

MS. FRANZETTI: Moving on to question seven. At Page 18 of the Sulski pre-filed testimony it is stated that, quote, temperature constraints could be overcome through additional effluent cooling at the five Midwest Generation electrical generating stations, end quote. Explain how much additional cooling is needed. And I don't know that -- I think this last part of the question has probably been answered already by our last dialogue here so can you give us some explanation of what you're referring to as the additional effluent cooling at the five Midwest Generation plants?

MR. TWAIT: The amount of cooling would just depend on the amount of cooling that would be required to meet the water quality standards outside of any mixing zone.

MS. FRANZETTI: Okay. So that's how that phrase was used was just Midwest Gen is going to have to add enough additional cooling to get down to what the roughly thermal water quality standards are, assuming

no mixing zone?

MR. TWAIT: I don't know that I would say assuming no mixing zone.

MS. FRANZETTI: I was just trying to keep it simple, but that's fine, I understand a mixing zone may apply. But that's basically what your -- your statement there, you didn't have in mind specific technology, a specific delta drop in the current effluent discharge temperatures, you were just referring to the fact that you got to add enough to come into compliance with the proposed thermal water quality standards?

MR. TWAIT: I believe that's all the cooling that would be necessary.

HEARING OFFICER TIPSORD: Mr. Harley, you have a question?

MR. HARLEY: Before we leave the topic of temperature block and the way it can affect water quality, one of the questions I wanted to ask you is based on your response that this would be most prominent in periods of time of time July, August. Is there also a temperature block phenomena that might

exist during colder weather periods? I'm reflecting on Chris Yoder's testimony that there could be thermal shock to fish that are preferentially attracted to warmer waters near thermal discharge points and that if that thermal discharge is then stopped, the fish can actually suffer as a result of that dramatic change in temperature. Does the concept of temperature block apply during winter periods, as well?

MR. DIMOND: Object on the basis of foundation. There's no showing that this witness has done any study or has any factual basis to testify about a temperature block or that he has any factual basis to offer an opinion about whether or not there's a temperature block, whatever that means, during a cold weather period.

We've got a real pattern developing here where any time the Agency doesn't want to offer an opinion, they say we haven't collected the data, we can't answer. Any time they want to offer an opinion, even though they don't have data, they offer it up

and that's a real problem with the record.

MS. WILLIAMS: I don't think that's a fair characterization. I think we're trying to answer everyone's questions as best we can.

HEARING OFFICER TIPSORD: Mr. Harley, would you like to rephrase because we have been talking about blockages?

MS. WILLIAMS: Is this question primarily about the concept of thermal -- can we take the term block out of it?

HEARING OFFICER TIPSORD: You know what, let's do it this way, and the Board is well aware that this is merely the opinion of the witness, could you answer Mr. Harley's question?

MR. SULSKI: Could you repeat the question, please?

MR. HARLEY: Could you repeat that question?

(Whereupon, the requested portion of the record was read accordingly.)

MR. SULSKI: The short answer is I

don't know whether that phenomena occurs here. I don't have any observations of it.

MR. HARLEY: Thank you.

MS. FRANZETTI: One might think that this is not a good breaking point, but I think it might be in the sense that my next question, question eight, is based on the existence of certain impairments, non- to partial attainment of the uses. And what I would like to do before getting to that question is have the Agency for all of us take us through just a bit of the portion of the filing last week where it -- this was in response to a request from the first hearing where they have information now on I believe the specific assessment information for the streams in question here as well as what are the impairments that have been noted.

Am I right, the Agency witnesses, that this portion of your filing last week, Appendix B1, specific assessment information for streams 2006, was intended to respond to that request for information about most recently identified impairments?

HEARING OFFICER TIPSORD: The title page on that is Information on Impaired Segments of the Lower Des Plaines River and the CAWS.

MS. FRANZETTI: Yes. That would be helpful if I would have said that. Thank you.

HEARING OFFICER TIPSORD: You know what, for ease if we're going to be asking some questions about this and talking about this, why don't we go ahead and mark this as Exhibit 34 as well.

MS. FRANZETTI: Right.

HEARING OFFICER TIPSORD: It's Information on Impaired Segments of Lower Des Plaines River and CAWS and there are several pages attached. We'll mark that as Exhibit 34.

(Document marked as Exhibit No. 34 for identification, 03/11/08.)

MS. FRANZETTI: And I am not implying that we have to go through every line of this

chart because obviously the chart includes waters that have nothing to do with this waterway, doesn't it, in part?

MR. ESSIG: Yes.

MS. FRANZETTI: Because of just how they're listed in your report, but I think because of that, that's what I'm getting at. If we could go through and identify for people what names on the chart are associated with water segments that are part of this UAA rulemaking, that's what I would ask the Agency to do.

MR. ESSIG: The list is in alphabetical order, so I will go through the names of the reaches that we're talking about.

MS. FRANZETTI: Exactly. And then if you could just be prepared to take an example line across the chart to explain what the codes mean, how does someone understand what the findings are with respect to any impairments or causes of impairments for a particular waterway so we just all understand how to use the information on those charts.

MR. ESSIG: Okay.

MS. FRANZETTI: Thanks.

HEARING OFFICER TIPSORD: Are you going to need a few minutes to do that?

MR. ESSIG: This could take a while, yes.

HEARING OFFICER TIPSORD: But I mean --

MS. WILLIAMS: No. He's ready.

HEARING OFFICER TIPSORD: Okay. Well, what I'm thinking is if we break now and try to go to the cafeteria or any other restaurants around, it might be insane. So why don't we go ahead and do that and we'll get through that with Mr. Essig and then take a break about 12:15, 12:30 and get out that flow.

MR. ESSIG: First, let me just explain the --

HEARING OFFICER TIPSORD: Mr. Essig, remember you need to keep your voice up.

MR. ESSIG: If you turn to the second page, it's labeled Appendix B1, that will give you the different, if you will, codes,

the different types of things that are included in this tabulation.

MS. FRANZETTI: And Mr. Essig, can I just help you along? In the upper left under use ID, that tells you what is the use classification for the given waterway?

MR. ESSIG: That's correct.

MS. FRANZETTI: And if you go over to the right of that, the support code, can you just explain what support codes mean?

MR. ESSIG: The support codes basically mean -- F means that it's fully meeting the designated use; N is not supporting the designated use; I means insufficient information; and X indicates that it was not assessed.

MS. FRANZETTI: And then could you briefly explain what the CAWS IDs are that are listed in the remaining two boxes below that on this Page 1, Appendix B1.

MR. ESSIG: The individual CAWS IDs indicate either a chemical or physical types of causes that can contribute to the degree of nonsupport. They are based on, in many

cases, chemical parameters that do have water quality standards either for general use or for indigenous aquatic life.

It also includes other parameters that do not have standards that we feel may contribute to cause of nonsupport. As an example, phosphorous -- I'll leave it at that for the time being rather than get bogged down on this.

If you want to go to the next page, on the next page it has source ID and these are codes that are used to identify possible sources of these causes of impairment.

And then when you get into the actual table itself, you'll notice that on the left-hand side of the table it's got the name of the water body, the ten digit HUC code, hydrologic unit code, H-U-C code, the IEPA basin is just a code for the -- you have a statewide map in this report that has the entire state and it has the watersheds delineated and those numbers refer to those watersheds, the assessment unit ID is the

actual ID of that stream segment that was assessed and the size in miles indicates the size of that segment. The category I believe is the 303D list category.

MR. ETTINGER: Is this from the 303D list?

MR. ESSIG: This is from the 2006 integrated report in the appendix. This is the actual assessments of all the water bodies. The 303 list itself is actually in another table within that report.

MR. ETTINGER: But this is part of the integrated 305B, 303D report?

MR. ESSIG: Yes, it is. And then the next column is the designated uses with the attainments, so you have the codes attached to that. And as I said before, an N in front of the code means that it's not supporting, F means it is supporting the use and X means that it was not assessed.

So if we go down on Page 14 that we're on, there's the Calumet River that is indicated on here and the assessment ID is ILHAA-01 and it indicates for that water body

that that is a general use waterway and it was indicated as being nonsupport for aquatic life. The code 583 indicates fish consumption use. The N in front of that means nonsupport to fish consumption.

Then 585 is the primary contact use. That's also indicated as not supporting its use.

Then the code for 586, secondary contact, that was not assessed.

And the final code, 590, is esthetic quality and that was not assessed.

And then if you go to the next column, the causes of the nonsupport are listed. So then you'd have to go to cause ID table. So 375 cause is silver; 441 is pH; 462, phosphorous; 348 is PCBs; and 400 is fecal coliform.

What this doesn't point out necessarily is, you know, which causes are contributing to which use impairment. But the 400 fecal coliform obviously is for primary contact. The other causes listed would be for the aquatic life. The listing

of PCBs would be listed for fish consumption. And then the following columns are the potential sources and you have to go to the source table for that.

MS. FRANZETTI: And those are sources of the causes?

MR. ESSIG: Yes. We think these sources might be contributing these causes to the waterway.

MS. FRANZETTI: Right.

MR. ESSIG: There isn't a definitive analysis of that. Twenty-three is combined sewer overflows; 62 is industrial point source discharge; 177 is urban runoff storm sewers; and 140 is source unknown.

And, again, within this table, the sources that are causes are not linked.

MS. FRANZETTI: Can you -- and I'm open to suggestions if there's an easier way, but would it take much time for you to go through these pages and note for us which are the names that are within the CAWS and the Lower Des Plaines UAA areas?

MR. ESSIG: Yes, I can do that. You

want to go page by page?

MS. FRANZETTI: I think that's maybe the only way that we can delineate which portions of this are relevant to this proceeding.

MR. ESSIG: Okay. On Page 14 we have the Calumet River. Do you want me to give you the assessment unit ID?

MS. FRANZETTI: No. I think we can all just mark it if you give us the name.

MR. ESSIG: Okay. The Calumet Sag Channel.

MS. FRANZETTI: Both entries, there's two?

MR. ESSIG: Right. Then we'd have to go to the next page, it would be Page 17, Chicago Sanitary and Ship Canal, there are three entries there for that. Then below that is the Chicago River.

And then we have to go to the next page. We get to the Des Plaines River, but I'm going to have to tell you which segment IDs are for that reach.

MS. FRANZETTI: Okay.

MR. ESSIG: The listing for the Des Plaines River on Page 23 are all general use waters, they're not within the study area. Page 24, segment -- this is still on the Des Plaines River, assessment unit ID ILG-23, that is within the Brandon Pool. And ILG-12 is within the Upper Dresden Island Pool. The remaining Des Plaines River sites on that page were all general use.

MS. FRANZETTI: Okay.

MR. ESSIG: And not within the UAA area.

MR. DIMOND: Could I ask a question about that? Mr. Essig, when you say that the ILG-12 is within the Upper Dresden Island Pool, is that because the assessment is a specific point or is it intended to cover the entire reach?

MR. ESSIG: There are stations within those reaches. The station itself might be a specific point, but the assessment is considered to take into account that whole assessment unit.

MR. DIMOND: And where is ILG-12

within the Upper Dresden Island Pool?

MR. ESSIG: That is -- I believe that one is basically just downstream of the tailwater area. But other stations may have been used within that segment for the assessment.

But there's -- let me try to explain it. In many cases the assessment unit ID is based on an existing station code. So there is an actual station code called G-12. In this case, that segment unit was named after that station, but we have other stations within that segment with a different station code.

MR. DIMOND: So the assessment that's reflected in here, even though it's labeled as ILG-12, may incorporate data from other stations within the Upper Dresden Island Pool?

MR. ESSIG: Right. Then I think we're on to Page 36, Grand Calumet River. That would be it for that page. Page 51, Little Calumet River North, there's two entries for that. There are two entries here for the

Little Calumet River South, but they are not within the CAWS.

And then we go on to the next page, Page 64, North Branch Chicago River, the first entry is part of CAWS, assessment unit ID ILHCC-02.

Then you skip one and you go to the next, North Branch Chicago River, which will be ILHCC-08.

Go on to the next page, 65, North Shore Channel. Page 77, South Branch Chicago River. And then the last page, south fork of the South Branch Chicago River. And I believe that should be all of them.

MS. FRANZETTI: Thank you, Mr. Essig. That's very helpful.

MR. ESSIG: I might want to add one thing. I just noticed something here and I'm not too sure why this is the case. On Page 65, the North Shore Channel is on there, but it's only giving one segment, ILHCCA-04, and then there is another segment, ILHCCA-02, and I'm not too sure why that's not showing up on this table. I'll have to check on that.

MS. FRANZETTI: The record can always be supplemented if there needs to be an additional page to cover that.

DR. GIRARD: Can I ask a question? Mr. Essig, I have a quick question. Is this database from the IEPA's website?

MR. ESSIG: It's from the report that is available on the website. Unfortunately, the website does not contain the appendix which is what this is.

DR. GIRARD: Basically my question is can you give us the address to be able to look at it?

MR. SMOGOR: The website at one point has carried those appendices as part of the report. They were there. It came to my attention maybe about a couple weeks ago that the appendices -- I think they're redoing website stuff is about the best I can put it and I think somehow the appendices were lost.

Typically, they're there and they should be there so we're going to have to -- we're looking into getting those appendices posted back to that website where they should

be.

DR. GIRARD: Thank you. Let us know when do you and how we can find it.

MR. SMOGOR: Okay.

MS. FRANZETTI: Okay. I'm going to modify question eight in the hope of eliminating what may be factual disagreement between us and just ask the question. Does the Agency have a watershed management plan in place for the -- let's take it first for the Lower Des Plaines River to address any of the non- or partial impairments?

MR. ESSIG: I'm not aware of specific watershed plans for these waters at this time.

MS. FRANZETTI: So the answer would be the same if I enlarge the question to include any of these UAA waters?

MR. ESSIG: Yes.

MS. FRANZETTI: Okay. Moving on to Roman eight, Aquatic --

HEARING OFFICER TIPSORD: If you're done with question eight let's go ahead and -- it's about 20 after, that should give

us enough time. Let's try and get back by about 20 after 1:00.

(Whereupon, after a short break was had, the following proceedings were held accordingly.)

HEARING OFFICER TIPSORD: Thank you all for your promptness and your return. I appreciate it. I realize that although we need no introduction for most of the panel, I'm sure, I forgot to introduce who is up here today from the Board.

So before we start, to my immediate right is Dr. Tanner Girard, the presiding Board member. To my immediate left is Andrea Moore, one of our Board members and to her left is Thomas Johnson, also a Board member. To Dr. Girard's immediate right is Anand Rao from our technical unit and to his immediate right is usually Alisa Liu.

MR. RAO: She stepped out.

HEARING OFFICER TIPSORD: She stepped out. And at the end of the table today I told you yesterday that our extern, Walter

Tirsch, would be joining us and this is Walter. And I think Christine is going to try and come back this afternoon, too, so you'll see her again this afternoon. And with that, Ms. Franzetti, I think we're back with you.

MS. FRANZETTI: Okay. And just so the next questioner after me knows where I'm stopping because I do think at least one other questioner has more, quote, unquote, general questions is what we're calling them, which I think at this point is anything other that getting into the proposed standards themselves, I will stop after my section on contaminated sediments, Roman nine, and allow whoever is left that has general questions to ask them, if that's consistent with your understanding.

HEARING OFFICER TIPSORD: That's fine.

MS. FRANZETTI: Okay. I think we stopped with Roman eight, Aquatic Invasive Species Barrier. In the Statement of Reasons at Page 50, the Illinois EPA describes the, quote, aquatic invasive species dispersal

barrier, end quote, installed in the CSSC at Romeoville as follows: Quote, the barrier involves applying an electrical charge directly to the water at a rate intended to prevent any fish from passing alive, end quote. While the statement notes the intent to prevent fishing from pass alive, does the Illinois EPA know from those responsible for the installation and operation of the barrier whether the barrier does effectively prevent all fish from passing alive?

MR. SULSKI: I don't know whether it prevents all fish from passing alive.

MS. FRANZETTI: Okay. Question two is already asked. Moving on to Question 1 and I will note the pre-filed question cites the chromium, but that should be cadmium so I'll read it in that corrected way.

On Page 67 of the Statement of Reasons the Illinois EPA notes that it appears barge traffic which suspends the sediments in the waterways contributes to causing exceedances of the cadmium chronic water quality standard. Did the Agency

review the effect of sediment resuspension on aquatic life in the waterway?

MR. SULSKI: Just in a cursory discussion amongst the stakeholders, that's it.

MS. FRANZETTI: And that would probably then be reflected in the minutes that have been presented already in the record?

MR. SULSKI: It may be, yes.

MS. FRANZETTI: Okay. Moving on to question two. With respect to the proposed maintenance of the Section 302.403 narrative standard for unnatural sludges, even though the existing conditions in the waterway violate the standard due to the presence of contaminated sediments, on Page 55 of the Statement of Reasons the Agency states it intends to apply the standard to, quote, prevent additional accumulations of sediment. Would you please first define unnatural sludge or bottom deposits and clarify the sources of such materials?

MR. SULSKI: Part of it is defined in

the 302.403 right after unnatural sludge or bottom deposits, and that would be floating debris, visible oil; that encompasses that.

In addition, solids associated with discharges from municipal wastewater treatment plants, combined sewer overflows, floatable materials that are associated mainly with those sources, sanitary debris.

MS. FRANZETTI: Can you explain in greater detail how this application -- and by that I'm referring to that quoted language to prevent additional accumulations of sediment will be applied?

MR. SULSKI: Well, from a field investigatory compliance framework, if a source was found to be discharging floatables and settleables and it resulted in the accumulation of same within the waterway, that would be what's called a violation of this rule.

MS. FRANZETTI: So would that make CSO discharges a violation of that rule?

MR. SULSKI: It would.

MR. TWAIT: It would -- we would apply

it the same as we do general use where if we see a problem that can be remedied or if we see a problem, we will investigate further and use that for a violation notice.

MS. FRANZETTI: So would an entity like the city of Chicago, if it continues to have CSO discharges which may have floatables and other type materials in them as you've described, fall within the meaning of unnatural sludge or bottom deposits? Would they risk violating this standard if its applied to the UAA waters?

MR. TWAIT: I think they would, especially if they were not doing the nine minimum controls to keep that at a minimum.

MS. FRANZETTI: Would compliance with the nine minimum controls be a defense then to an alleged violation of this section?

MR. TAIT: I'm not in the compliance section so I'm not qualified to say.

MR. SULSKI: It could be. It's a fairly complicated and time-extended situation in the Chicago metropolitan area due to TARP and time it's going to take to

complete TARP, which is the long term control plan for the whole Chicago metropolitan area.

MS. FRANZETTI: Let me pick up the second part of 2B there. Do you think the language of 302.403 clearly expresses your stated limitation to the scope of its applicability, namely only to prevent additional accumulations of sediment?

MS. WILLIAMS: No.

MS. FRANZETTI: Is the Agency going to consider proposing a revision to that section to --

MS. WILLIAMS: We would consider proposals that are thrown out by others, but we couldn't come up with one that we felt was consistent with federal law.

MS. FRANZETTI: Moving on to question 3. On Page 55 of the Statement of Reasons the Illinois EPA states the, quote, historic sediment pollution presents an attainability concern for some types of aquatic life in these waters. First, what's meant by the term attainability concern?

MS. WILLIAMS: I think we may have

tried to talk about this yesterday, but I think that is misleading the way it's written there that this was focused purely on pointing out that we recognized there's historic sediment pollution there and that there's a compliance concern with the standard as it's written.

I don't think attainability concern for aquatic life is a -- I think it's a poor choice of words because that's not really what we were looking at.

MS. FRANZETTI: Okay. So the Agency does not believe that historic sediment pollution presents any problem for certain types of aquatic life in these waters?

MS. WILLIAMS: That was not what was meant by this statement. I guess they can answer the technical piece of that question.

MR. SULSKI: Back to some of the early testimony that we don't have enough information to make a judgment from a toxicity standpoint, however, we did indicate that from a habitat structural standpoint that we recognize it results in a poorer

quality habitat.

MS. FRANZETTI: So to the extent -- if I understand correctly then, so to the extent that poorer habitat is considered as part of the attainability analysis, it is relevant to that review?

MR. SULSKI: It's relevant to evaluating habitat.

MS. FRANZETTI: I'm going to skip over four. I think just based on your prior testimony I don't need to ask that question. I'm done.

HEARING OFFICER TIPSORD: Okay. Then that takes us -- we're stopping short of actually discussing the standards in this area of questions. Ms. Franzetti, you're stopping --

MS. FRANZETTI: I'm stopping with my questions that now get into the specific chemicals, including temperature in that category for purposes of that shorthand reference, my questions on the specific standards proposed for these uses.

HEARING OFFICER TIPSORD: With that in

mind, does Flint Hills have any additional questions short of that mark?

MR. SAFLEY: Well, I don't know. I apologize, I didn't know that we were stopping short of that mark, so apparently I missed that.

HEARING OFFICER TIPSORD: You know what, I think Citgo does, which would be next, if you don't mind, and then we can come back.

MR. SAFLEY: Of course. That's fine.

HEARING OFFICER TIPSORD: I believe that's who's next on the list. Let me double check.

(Brief pause.)

HEARING OFFICER TIPSORD: Yes. Mr. Fort, will you please tell us where you're starting with pre-filed questions?

MR. FORT: Thank you. Jeffrey Fort on behalf of Citgo. I have a few questions that were left out of my Roman two of the pre-filed questions. Many of those -- some of those I was able to ask back in Chicago. Some I think have been answered by others.

And if you think that they have been asked and answered, I know you will say so.

I also have a couple follow-up questions to some of the documents that the Agency filed last week at least as they apply to Citgo. And, again, because Citgo is a discharger to the Chicago Sanitary and Ship Canal, I'm really focusing my questions only on those so-called Use B waters today.

Most of my questions start off with the premise stated on the bottom of Page 3 of the prepared pre-filed questions about a summary of the Agency findings and the proposal to the Board.

Madam Hearing Officer, from an interest of the record, would you like me to read that or should I just go ahead?

HEARING OFFICER TIPSORD: Why don't you read it for the record?

MR. FORT: Thank you. In our review of the Agency filings, the Agency appears to find and recommend to the Board that the Chicago Sanitary and Ship Canal from its confluence of the Cal Sag Channel to its

confluence of the Des Plaines River and the Lower Des Plaines River from its confluence with the Chicago Sanitary and Ship Canal to the Brandon Road Lock and Damn should be categorized, quote, non-recreational use, end quote, water, which precludes primary contact, incidental contact and non-contact recreation due to physical or low-flow conditions or other restrictions, Statement of Reasons Page 42.

The Agency also recommends grouping the ship canal and the Lower Des Plaines River from its confluence with the canal to the Brandon Road Lock and Damn as being part of the category called Chicago Area Waterway System and Brandon Pool Aquatic Life Use B Waters on Pages 46 to 47.

With those findings and recommendations, what is the justification for the following -- in light of the following questions.

First, the basis for taking directly from the parallel provisions in Section 302.208 which deals with general use

waters, requirements to adopt acute standards, chronic standards and human health standards and including them in a new 302.407?

MS. WILLIAMS: I have that as asked and answered in Chicago, but we can do it again if you want.

MR. FORT: If you want to do it.

MS. WILLIAMS: I think it's very short.

MR. TWAIT: If your question is asking why we didn't reference 302.208, standards in our proposal, it was based on a management decision to have stand-alone regulations.

MR. FORT: My question is a little bit different. My question is why are you now including those three criteria as part of the Aquatic Life Use B Water Quality Requirements?

MR. TWAIT: It's all based on protecting aquatic life.

MR. FORT: Notwithstanding the findings that you made here about the limited habitat and the life with respect to this

part of the Chicago Sanitary and Ship Canal?

MR. TWAIT: Yes.

MR. FORT: Maybe then I should ask questions on the document that you submitted. And Madam Hearing Officer, I certainly didn't bring enough copies for everybody in the room.

HEARING OFFICER TIPSORD: If it's from the March 4th filing, if you could show me which one it is, we have some of those with us.

MR. FORT: It is one of the first ones.

HEARING OFFICER TIPSORD: These have already been put in as an exhibit. Hang on, let me tell you which exhibit. I think Exhibit 29, yes, the UAA Factor Application to CAWS and Lower Des Plaines River is Exhibit 29.

MR. FORT: Do you have a copy there handy?

MR. SMOGOR: Yes.

MR. FORT: And this is a two-page document -- or a one-page front and back and

then a second page.

HEARING OFFICER TIPSORD: Yeah.

MR. FORT: I'm not sure when the Agency is answering this, but as I read through the first page here there are nine segments, one of which is called the Lower CSSC or the Lower Chicago Sanitary and Ship Canal; is that correct?

MR. SULSKI: Correct.

MR. FORT: Okay. And it is the only category on this first page that is non-recreational?

MR. SULSKI: Correct. Yes.

MR. FORT: And these are generally segments that are upgradient of the Chicago Sanitary and Ship Canal, mostly in the Chicago River?

MR. SULSKI: The ones above that?

MR. FORT: On this first page, yes.

MR. SULSKI: Yes.

MR. FORT: And on the next page this is more water body segments that are -- including the Sanitary Ship Canal that are also upgradient of the Chicago Sanitary and

Ship Canal down to the Brandon Lock and Damn except that these are on the Calumet system, correct?

MR. SULSKI: Correct.

MR. FORT: Okay. And, again, the Chicago Sanitary and Ship Canal segment here is the only one that is non-recreational?

MR. SULSKI: It's not a -- On Page 2, on the second page?

MR. FORT: Yes.

MR. SULSKI: I don't see a Chicago Sanitary and Ship Canal.

MR. FORT: Looking at the bottom set of brackets.

MR. SULSKI: Yes. I'm sorry, I apologize.

MR. FORT: Did I correctly say that this is the -- on the second page, that these are all Calumet River system segments going to its confluence of the ship canal?

MR. SULSKI: I need to clarify. This is where you point out CSSC on the bottom row?

MR. FORT: Yes.

MR. SULSKI: That just designates where this LDPR, Lower Des Plaines-Brandon starts and then Brandon Lock and Damn is where it ends. So it's not a Sanitary Ship Canal reach, this is the Lower Des Plaines River-Brandon Pool.

MR. FORT: Thank you for clarifying that. So going back to the first sheet of the page, the Lower Chicago Sanitary and Ship Canal goes down to the Lower Des Plaines Lock and Damn and then on the next page it continues on down to the Brandon Lock and Damn or are these overlapping or is this just a nomenclature difference between the two bottom segments on the chart?

MR. SULSKI: Let's go to the first page, the lower CSSC begins -- if you look at the column heading, it begins at the Cal Sag Channel, CSC, and it ends at the lower Des Plaines River-Brandon.

And then if we go down to the Lower Des Plaines River-Brandon, that reach begins at the Chicago Sanitary and Ship Canal and ends at the Brandon Lock and Damn.

MR. FORT: Okay. But you've put other stream segments in the Aquatic Use B category, not just these two segments of the ship canal and the Lower Des Plaines, correct?

MR. SULSKI: That's correct.

MR. FORT: And why do you put those two segments, which have non-recreational attainable use categories in with all the other Use B categories?

MR. TWAIT: They are separate. We have two use -- well, we have more than two uses, we have six uses for the non-recreational. That is a recreation use. And Aquatic Life Use B is an aquatic life designated use.

MR. FORT: Are there any differences, though, in the water quality standards that you're proposing even though you have different uses?

MR. TWAIT: Yes. For the recreation, those -- we're not proposing any water quality standards at this time, however, in the future we will be proposing bacteria

standards and for the Aquatic Life Use Standards A, B and the Lower Des Plaines will have the chemical water quality standards.

MR. FORT: But those chemical water quality standards are identical regardless of what the aquatic use is, correct?

MR. TWAIT: No.

MR. FORT: No?

MR. TWAIT: No.

MR. FORT: How are they different?

MR. TWAIT: Aquatic Life Use A -- the Aquatic Life Use B Waters and Brandon Pool do not support early life stages, so dissolved oxygen is different, ammonia is different and temperature is different.

MR. FORT: Okay. So for those three chemicals -- or those three parameters, those three parameters are different, but for everything else all the chemical parameters are identical?

MR. TWAIT: I believe that would be accurate.

MR. FORT: Going back to the pre-filed question number three on Page 4, dealing with

the uses you say that the language for acute standards, chronic standards and human health standards is not intended to be a change from how they're applied for general use waters. So on Page 63 of the Statement of Reasons. My question is assuming that I've reasonably characterized what you said in the Statement of Reasons, why is that so, what's the basis?

MS. WILLIAMS: So you're asking specifically about the section in the proposal 302.407 A, B, C and D?

MR. FORT: Well, I'm probably asking more for the background as opposed to the words, but it relates to that, yes.

MS. WILLIAMS: The background?

MR. FORT: The basis.

MS. WILLIAMS: Right. In that section, that's the language we're talking about, correct?

MR. FORT: Yes.

MR. TWAIT: The Agency made some changes in 302.208D1. We took that language from general use, but we made some changes to the language to make it clearer and more

accurate.

The new language is in 302.07D1. The Agency made the statement the Agency believes this revised language is clearer and more accurate than the existing language, but the proposed language is not intended to make a substantive change in the way the regulatory language is interpreted and applied.

MR. FORT: So you were simply trying to take what was already in the regs for general use waters, clean it up or clarify and apply that to Use B waters among other waters here, correct?

MR. TWAIT: Yes.

MR. FORT: And why were you doing that?

MS. WILLIAMS: Why were they cleaning it up or why were we putting it in?

MR. FORT: Whichever one he wants to answer. But I think it's more the second.

MR. TWAIT: The reason we put it in is because for secondary contact standards, most of those were one number standards and they

are applied differently than the --
differently than what the Agency applies
acute and chronic standards for and also
different than what we have human health
standards for.

MR. FORT: So there was intended to be a substantive change in the secondary contact water quality standards?

MR. TWAIT: Yes. But there was not -- we've changed the language a little bit from what general use says and we don't want people to -- we want to make it clear that we're not planning to change how we apply acute chronic and human health standards.

MR. FORT: But those would be new requirements for secondary contact dischargers?

MR. TWAIT: Yes.

MR. FORT: And that would be implemented in the permitting process?

MR. TAIT: Yes.

MR. FORT: And do you have any sense of how much that kind of an activity might cost?

MS. WILLIAMS: Can you specify a parameter, like there's no -- this language doesn't address any particular chemicals so I would think your question would have to address a particular chemical in order to be able to be answered.

MR. FORT: Well, that's probably a good follow-up question when we get to individual parameters, but right now I'm asking if the Agency has any idea what the cost involved both in terms of Agency time and in terms of discharger time and other folks, what the cost is of going through that kind of an exercise in a permit.

MR. TWAIT: The permit engineer has to go through and analyze whether or not to put a standard in based on the current secondary contact standard. I don't know that it would take much more effort for them to look at these new standards. So in respect to Agency time, I don't think it's all that more costly.

MR. FORT: What about the discharger?

MR. TWAIT: I don't know that they

spend a lot of time trying to figure out what their permit limits are other than spending -- well --

MR. FORT: What's the basis for that?

MR. TWAIT: Most dischargers. I don't know how much extra it would cost a discharger, no.

MR. FORT: So that's your answer, you don't know how much time it would take?

MR. TWAIT: Yes.

MR. FORT: And you really are going to withdraw that prior offhand comment?

MR. TWAIT: Yes, I will withdraw that.

MR. FORT: Thank you. I'm not sure I'm supposed to be rehabilitating you, but I think I understood.

MS. WILLIAMS: I'm trying to help clarify your question, so it's okay. It's only fair.

MR. FORT: You're welcome.

Well, continuing on these questions on the uses and the grouping of uses, I was confused as to why the Agency chose to group all these different

categories. I think you've shown them on the Exhibit 29, but in the definition it's 303.235, why the Agency considered all of these different reaches of the Chicago Waterway System to be grouped as Use B because looking at Exhibit 29 I can't figure out why some went into use -- based upon the UAA factors and the recreational category, why some were in Use A and some were in Use B.

MS. WILLIAMS: I think we've talked about this quite a bit, but if you want to give Mr. Fort some leeway to go into that again, I'm fine with that.

MR. ETTINGER: I believe we've testified a lot about the structural factors on the habitat. Is that what he's asking about?

MR. FORT: No. This is more into the regulatory definition which is something I could not get into in Chicago the first time through.

HEARING OFFICER TIPSORD: The definition at 302 --

MR. FORT: 235. Look at Exhibit 29.

MR. SULSKI: Well, I don't know if looking at this sheet is going to answer your question. I'll give you a short answer and if you need more elaboration, let me know.

We made a cut between Use A and B waters based on expected aquatic life potential with respect to habitat and then expected recreational use with what recreation -- based on what recreational use exists now and in the foreseeable future. That's the simple answer.

MR. FORT: Okay. Well, then I'll just ask the question again. Why did the lower ship canal, you know, the segment that's the last item on the first page and the ship canal down to Brandon Lock and Damn, last column on the second page, get put in Use B along with the other things that are in Use B?

MS. WILLIAMS: Do you want to put them in Use A, is that what your question is?

MR. FORT: Well, actually, I suggested Use C or maybe call it secondary contact, but

I was just asking for why they all went in Use B.

MR. TWAIT: Use B was basically for those places that have limited habitat. Use A have more habitat than the Use B.

MR. FORT: And so it didn't matter what the recreational category was then?

MR. TWAIT: No, it did not matter at all.

MR. FORT: For purposes of defining uses?

MR. TWAIT: Correct.

MS. WILLIAMS: For aquatic life uses.

MR. SMOGOR: Another way to put it is Aquatic Life Use Designations were made largely independently of the -- proposed Aquatic Life Use Designations were made largely independently of the proposed recreational use designations. Does that help?

MR. FORT: Well, at least I understand that statement. I may not agree with it, but I understand it. Thank you. Okay.

Well, then while we're on the

subject of the definitions here, I could not understand the meaning in 303.204, which has a general statement about the Chicago Area Waterway System and Lower Des Plaines River of what those are. Non-specific water use designations is part of Subpart B, do you have that?

MS. WILLIAMS: Madam Hearing Officer, at this time I would ask that we shouldn't have to re-answer questions that were already asked and answered by Ms. Franzetti or one of the other parties.

HEARING OFFICER TIPSORD: He hasn't yet asked the question, but I would agree with you. Ms. Franzetti discussed this section at length, so let's hear what the question is and then --

MS. WILLIAMS: Sorry.

MR. FORT: So you have it?

MS. WILLIAMS: Oh, yes.

MR. FORT: My question is what is the meaning of the final -- or not the final phrase, by it's the phrase "limited only by the physical condition of these waters and

hydrologic modifications to these waters," what does that phrase means?

HEARING OFFICER TIPSORD: We didn't discuss that phrase specifically.

MR. SULSKI: Yes, we did. We didn't did you say?

HEARING OFFICER TIPSORD: I don't think we did.

MR. SMOGOR: That's intended to mean pretty much that's the irreversible conditions. We recognize that there's a certain amount of human impact going on in these waters. We recognize that some part of that human impact can be considered reversible conditions, some part of that human impact can be considered irreversible conditions and we're setting the goal by recognizing that level or that amount or that proportion of the human impact that represents irreversible conditions.

MR. FORT: Well, my question is you have been spending a lot of time obviously with the uses and what the actual habitat is and all those factors, spent a lot of time on

that, but how is somebody who hasn't been steeped in these hearing proceedings going to know what that phrase means?

MS. WILLIAMS: They're going to read the Board opinion when the rule is done.

MR. SMOGOR: I don't know how someone else is going to understand that or not.

MR. FORT: So if I understand, the Agency's view is that the Board is going to explain what that means?

MS. WILLIAMS: I'm sorry. I shouldn't have said that. Go ahead if you can explain any better.

MR. SMOGOR: Well, I don't know how someone else is -- whether someone is going to understand it or not understand it. The intent in the context -- and we created these uses in the context of each other in terms of the aquatic life use and I believe also in terms of the recreational uses, so there is a greater context outside of the 303.204.

If that context is not understood or not addressed then, yes, this loses some of its meaning because we did address these

things relative to other uses. But given the context of all the standards and the context of these proceedings as a whole, we believe that in a limited situation you're constrained to some narrative language to try to best define the use, so we believe that that captures that intent.

MR. FORT: Well, I guess maybe I'm in no different position than you are. I'm not sure what it means when you say the highest quality aquatic life and wildlife is attainable limited only by the condition. I'm not sure what that means. That could apply to any body of water, I think.

MR. SMOGOR: It's intended to mean in the greater context that we're -- it's representing a situation where we're setting an aquatic life goal that is less than the Clean Water Act goal because we're recognizing that there's a certain amount of irreversible human impact and that was its intent as far as I can tell.

MR. FORT: I guess I'm not correlating with -- the words just don't seem to measure

up to what you've put forward here in terms of the rulemaking. I guess I'll just leave that as a comment then and we've got other hearings to deal with, so thank you.

MS. WILLIAMS: And just to clarify, I think we tried to say when other drafting type issues like that have come up. We're not (inaudible) to any specific phrasing here. If people would like to propose suggestions that they think are clearer, that would be fine.

MR. FORT: Thank you.

HEARING OFFICER TIPSORD: And I just would like to interject that if the Agency along the way comes up with some better suggestions, too, we would appreciate those. Thank you.

MR. FORT: Well, I guess then here's the other piece of this when you keep on going when you get to the discussion we just had about the acute standards and the human health standards and those things that Mr. Twait was talking about and now the Agency is proposing to use general use

standards, how do you know what those physical conditions really mean?

MR. TWAIT: Well, the Agency isn't proposing to use general use standards per se. There's a management decision to use the most current standard available. And in some instances, that was US EPA's national criteria and in other places the Agency's general use standard was the most current.

MR. FORT: And in some cases the US EPA current criteria is even more stringent than the general use standard, correct?

MR. TWAIT: Yes.

MR. FORT: And that is part of this -- I forget what the parameter, but that is in here?

MR. TWAIT: Yes.

MR. FORT: Thank you.

MR. TWAIT: It can go the other way, also.

MR. ETTINGER: Which one are you using, a US EPA criteria that's more stringent than your current general use

standard?

MR. TWAIT: Just a second. Copper would be one, temperature, and I guess that would -- I think that's the only one.

MR. ETTINGER: I just thought it would be helpful to put that in. Do you talk about the chloride standards?

MR. TWAIT: Dissolved oxygen would be --

MS. WILLIAMS: Can we repeat the question?

MR. ETTINGER: Mr. Fort asked about the circumstances in which US EPA criteria were used instead of the existing Board general use criteria. Now it's not always clear as to, for example, temperature and DO exactly what the US EPA criteria means in this circumstance. But I gather for copper a different number is being proposed than is the current general use standard for copper, but that is in line with the US EPA criteria. I just thought in terms of getting all the information on the table that Mr. Fort is alluding to, that we find out if there was

anything -- I'm hearing copper.

MR. TWAIT: I think there's some others. Let me make a comparison. Arsenic is more stringent. Chromium trivalent is based on the national criteria. Mercury is based on the national criteria, that's mercury for aquatic life protection. Silver, we used the national criteria. And I think that's it.

MR. FORT: Do you have any more, Mr. Ettinger?

MR. ETTINGER: I think that's the pattern we're following here. You haven't been here, but we're trying to follow a complete record and fill in questions.

MR. FORT: That's fine.

HEARING OFFICER TIPSORD: Go ahead.

MR. FORT: One other question to the Agency, probably to the panel but maybe one of you wants to take it. How does the existing water quality standards that are on the books now, how are they not protective of the existing uses of the Chicago Sanitary and Ship Canal?

MS. WILLIAMS: Is this a follow-up or are we in the pre-filed somewhere?

MR. FORT: This is a follow-up.

MR. TAIT: Are you asking how the existing secondary contact standards are not protective of aquatic life?

MR. FORT: You can answer that question, too. That would be good. Yes.

MR. TWAIT: The secondary contact water quality standards were not based on protection of aquatic life, they were based on effluent standards. So back in 1972 they were not trying to protect aquatic life beyond having effluent standards.

MR. FORT: Well, I understand there's been quite a discussion that I missed on thermal, so except for thermal is there any evidence that the Agency has that the existing secondary contact water quality standards are not protective of aquatic life, the aquatic life that is available for the stream segment being the Chicago Sanitary and Ship Canal.

MR. TWAIT: Yes.

MR. FORT: And what is that?

MR. TWAIT: Arsenic had a concentration at one milligram per liter, which is a secondary contact water quality standard. It's not protective of aquatic life.

MR. FORT: And what's the basis for that conclusion?

MR. TWAIT: The amount of research data, the national criteria document and our general use water quality standard.

MR. FORT: So you're comparing it to the national criteria document or other general use standards, is that what I heard?

MR. TWAIT: Yes. Arsenic for an acute standard that we've proposed would be 0.34 milligrams per liter for an acute standard and for a chronic standard it would be 0.15.

MR. FORT: That's part of the proposal, correct?

MR. TWAIT: Yes. And that is based on the national criteria. And basically it's -- I just chose basically the first constituent

in the list. I could go down the list and point out others.

MR. FORT: But those are based upon national criteria for all water bodies, they're not based upon the exact habitat, for example, that you have in the ship canal, correct.

MR. TWAIT: The national criteria are based upon lab results showing toxicity to whatever they're doing in the lab. The habitat in the lab doesn't matter.

MR. FORT: So based upon the lab studies, not based upon the actual conditions, and I'm really just focusing upon the Sanitary and Ship Canal, correct?

MR. TWAIT: Yes. If it kills it -- the only studies that they do or the primary studies that they do are toxicity, what kills the organism in the lab. And other than whether the organism is there or not, habitat doesn't matter.

MR. ETTINGER: As to some of the US EPA criteria in the past, it makes a difference as to whether you're dealing with

a salmonid or non-salmonid species and sometimes in the case of DO and ammonia and perhaps some other chemicals the criteria are tighter when we're trying to protect some species.

As to copper and these others that we're talking about, was there a difference in the criteria in the US EPA criteria documents as to those sorts of species differences?

MR. TWAIT: Yes. In some of the national criteria documents they had salmonids and other organisms that are not found in Illinois and we removed them in the database prior to our calculations of water quality standards.

MR. ETTINGER: So the water quality standards that you're proposing for the B Waters have been adjusted to make sure that you're applying the federal criteria as it applies to those waters?

MR. TWAIT: We have made that attempt, yes.

MR. ETTINGER: Thank you.

MR. FORT: You've made that attempt, but you're not testifying that the actual species that may exist in places like the Chicago Sanitary and Ship Canal have been reflected in all the parameters that you've proposed, correct?

MR. TWAIT: That would be correct. There was a management decision that where the water quality standard could be met, we were going to propose either the national criteria or the general use standard.

There are some instances where you might be able to remove some more species from the national criteria document to more accommodate fewer species in the waterway and this was attempted on at least one parameter. But when you get to a point where you're removing too many species because of the variability and the safety factor built in, your criteria becomes more stringent.

MR. FORT: What parameters was that that you attempted it on?

MR. TWAIT: That was for cadmium. And the Agency took out the cold water species

and the species not native to Illinois and the criteria became much more stringent just because there were so few species involved in the first place.

MR. FORT: And because you had fewer species, your standard deviation got bigger and therefore your safety factor got bigger which sort of overwhelmed everything else, correct?

MR. TWAIT: Yes.

MR. FORT: So it's statistics that caused the problem, not the sampling results that caused the problem?

MR. TWAIT: There was -- I don't know what sampling results you're talking about, but, yeah, the statistics were a problem.

MR. FORT: Let me just play it back. If I understand what you were saying here, if you had ten species that you had data on, let's just assume for sake of argument all of them were five parts per million was the key number, but you conclude that -- and so therefore you have a real high confidence level or relatively high, it would be better

if it were 100 or 30 at least, but that you have a pretty good set that's around five parts per million as a standard.

But if you reduce it down from ten to five and now the variability goes from three parts per million to seven parts per million, your statistics are going to make you now go to ten parts per million or some much higher number such as that, correct?

MR. TWAIT: Yes.

MR. FORT: I thought that's what you were saying, but I wanted to see if I understood. Thank you.

Madam Hearing Officer, I've got some more questions in this set, but I think they all get very specific to individual standards, so if the rule is we're going to go with the safe questions for individual parameters, I'm done.

HEARING OFFICER TIPSORD: Well, I believe that's what Ms. Franzetti ended with so thank you very much, Mr. Fort.

MR. FORT: I guess I should say I'm done for now.

HEARING OFFICER TIPSORD: Mr. Safley, did you have anything at this point?

MR. SAFLEY: Not on behalf on Flint Hills or Corn Products.

HEARING OFFICER TIPSORD: Okay. Let me see if I can find my list. I forget who is after Corn Products.

MR. FORT: I found a document that I had forgot that I had in here. I have one question.

HEARING OFFICER TIPSORD: And we're going to hold you to that, no follow-ups, just one.

MR. FORT: That's very fair. This is a question on the document that was filed and I think this was something that Mr. Yoder mentioned. I had asked him a question was there any other sampling on species in the Chicago Sanitary and Ship Canal and I believe he said that there was. And I believe the document called Evaluation and Development of Large River Biological Assessment Methods and Standardized Protocols for Region Five is that document. Is that an exhibit?

MS. DIERS: We haven't made it an exhibit yet.

MR. FORT: I don't think it needs to be, but I was just trying to clarify the record. So I guess I'm on two questions then.

HEARING OFFICER TIPSORD: Which one is it?

MR. FORT: Evaluation. My question goes to was any of this data collected on the Chicago Sanitary and Ship Canal, because when I go to the listing of the Chicago Area Water System, Page 75, I don't see any site that's being sampled here that's something I can identify as being on the Sanitary Ship Canal. Now, he may have misheard and thought I was talking about the Chicago Area Waterway System, but as to the ship canal was the question.

MS. WILLIAMS: I would say at this point if they know the answer, I'm not going to object to them answering. But when this document came up in Mr. Yoder's testimony, he had said, well, I'm sure the Agency had a

copy of this, but all the witnesses had not seen it. So I'm not sure that -- I'm not sure if we'll be able to answer it.

HEARING OFFICER TIPSORD: How about instead of objecting, you caveat any answer from the Agency with that?

MS. WILLIAMS: That's exactly right. Can anyone answer?

(Brief pause.)

MR. SULSKI: While we're looking and trying to see, it doesn't look like any of these are on the Chicago Sanitary and Ship Canal.

MR. FORT: Okay.

HEARING OFFICER TIPSORD: And for the record we are going to enter that as Exhibit 35 if there's no objection. It's the Evaluation and Development of Large River Biological Assessment, is that the one we're talking about?

MR. SMOGOR: Yes.

MR. FORT: Mr. Sulski, I came to the same conclusion that it wasn't part of the ship canal, but...

HEARING OFFICER TIPSORD: With that, we move on to Chemical Industry Council.

MS. FREDE: We have no questions at this time.

HEARING OFFICER TIPSORD: And that goes to Mr. Andes with the Metropolitan Water Reclamation District. Did you have anything additional without getting into specific criteria?

MR. ANDES: No.

HEARING OFFICER TIPSORD: Stepan?

MR. DIMOND: I didn't even understand the distinction between the (inaudible) and specifics, so the answer is no.

HEARING OFFICER TIPSORD: Environmental Law Policy Center?

MR. ETTINGER: We have a question which arguably fits, but we would rather keep all of our things together.

HEARING OFFICER TIPSORD: And that leaves us with Exxon Mobile.

MR. SAFLEY: I think that we're in the same position.

HEARING OFFICER TIPSORD: Then we'll

go back to Ms. Franzetti.

MS. FRANZETTI: I know you all missed me.

(Brief pause.)

MS. FRANZETTI: Okay. On my pre-filed questions we are at Roman ten, Proposed Thermal Water Quality Standards. These are some background questions regarding the MBI/CABB 2005 report which is Exhibit 15, I believe, and it was also Attachment GG to the Statement of Reasons.

Question number one, in regard to the report by MBI and CABB titled Temperature Criteria Options for the Lower Des Plaines River, October 11th, 2005, which is Exhibit 15, the Illinois EPA states at Page 81 of the Statement of Reasons that, quote, US EPA Region 5 and Illinois EPA requested this study to develop technical support and temperature criteria options for the Lower Des Plaines River, end quote. Would you please explain the role of the US EPA Region 5 in the request for this study?

MR. TWAIT: US EPA Region 5 already

had a contract with MBI and they provided the funding for the study.

MS. FRANZETTI: And did you seek out assistance to come up with a way in which to derive thermal criteria?

MR. TWAIT: I don't know whether we sought assistance from US EPA or if they made the offer. I don't know.

MS. FRANZETTI: And so they offered up Mr. Yoder and his approach to deriving thermal water quality criteria and the Agency accepted the offer; would that be accurate?

MR. TWAIT: Yes.

MS. FRANZETTI: Now if the report was based on the Lower Des Plaines River, how did the Agency use the conclusions and options presented in this report to develop temperature standards for the CAWS as stated at Page 81 in the Statement of Reasons?

MR. TWAIT: The Agency believed that the CAWS system was similar to the Brandon Pool, therefore, the Agency used the RAS group, representative aquatic species of eight species throughout the CAWS and then a

little bit later we added White Sucker to the A Waters.

HEARING OFFICER TIPSORD: Mr. Dimond, do you have a follow-up?

MR. DIMOND: I do if Ms. Franzetti is done.

MS. FRANZETTI: Sure.

MR. DIMOND: Had anyone at the Agency ever seen the methodology used by MBI in this report before?

MR. TWAIT: I don't know the timing of it, but I was involved with the ORSANCO group who was working on water quality standards for the Ohio River and they are using the Chris Yoder methodology also.

MR. DIMOND: Did the Agency investigate any methodologies other than Mr. Yoder's methodology for coming up with thermal water quality standards?

MR. TAIT: The ORSANCO group did ask -- they asked Chris to look into it and Chris found several -- I think two other methodologies that were being used, one was in Colorado if I remember correctly and the

other one was either in Wisconsin or Minnesota.

HEARING OFFICER TIPSORD: For the record, ORSANCO?

MR. TWAIT: O-R-S-A-N-C-O.

MR. SMOGOR: Ohio River Valley Water Sanitation Commission. There's a few extra words in there, but they are in there. I had to look that up several times.

MR. TWAIT: Thank you.

MR. DIMOND: Did the Agency evaluate those other methodologies for coming up with thermal water quality standards?

MR. TWAIT: The Agency did not.

MR. DIMOND: That's all.

HEARING OFFICER TIPSORD: Ms. Franzetti?

MS. FRANZETTI: Actually, one more follow-up on that. Do you recall at least generally what the nature was of the Colorado methodology?

MR. TWAIT: I do not remember what the nature of it was, but it was for cold water species specifically.

MS. FRANZETTI: Similarly, do you recall generally what either the Wisconsin or Minnesota, whichever it was, and I know you can't recollect specifically, but do you recall anything about what that methodology was based on?

MR. TWAIT: Yes. The way they wrote their water quality standards was unique. It was based upon the ambient -- they wrote it for a discharger specifically. And the water quality standard is based upon the ambient temperature and the temperature that is being discharged and what they have to meet outside of a mixing zone.

MS. FRANZETTI: Mr. Twait, would it be fair to say that the Agency was not opposed to looking at other methodologies, but due to reasons like time and resources, is that why the Agency did not look at methodologies beyond the one that Yoder calls his fish temperature model?

MR. TWAIT: I would say that's accurate.

MS. FRANZETTI: There was a

temperature methodology proposed by Midwest Generation to the Agency. Did the Agency give that any consideration?

MR. TWAIT: Would you be specific as to which methodology you're talking about?

MS. FRANZETTI: Why don't we just take the last one that we presented to you which was approximately in August of 2007?

MR. TWAIT: I read the proposal that was sent in in August, but our rulemaking was basically set in August and our director had signed off on our proposal at that time so the Agency didn't give all that much -- we didn't look into it far enough because we weren't going to change our proposal at that time.

MS. FRANZETTI: Okay. Fair enough. What you're saying is from the Agency's perspective, although Midwest Gen might not have realized it, that proposed methodology came to you too late to be given thorough consideration?

MR. TWAIT: Yes.

MS. FRANZETTI: And I take it since

that time, given that you've made your proposal to the Board, it has not been given any further consideration?

MR. TWAIT: Not enough that we would -- since we knew we were not going to be changing our proposal, no, we haven't. We've read it, but that would be it.

MS. FRANZETTI: Okay. Did you consider any prior submittals by Midwest Generation for deriving thermal criteria?

MR. TWAIT: I think the other proposal we didn't view it as a water quality standard. I believe the other proposal just had alternative limits at the I-55 bridge.

MS. FRANZETTI: Okay. That's your understanding of what was submitted?

MR. TWAIT: Yes.

MS. FRANZETTI: Okay. I'll leave it at that time. Moving on to question two, and I asked basically the same question of Mr. Yoder but I didn't ask it of the Agency, so that's why I don't think it's been asked and answered.

What steps did the Agency take to

ensure that the MBI/CABB 2005 report, Exhibit 15, was consistent with the 1985 US EPA guidance for developing water quality criteria particularly as to the level of protection and priority for field data? And by that we mean that we believe the 1985 EPA guidance document does support giving priority to field data over literature or laboratory data.

MR. TWAIT: If your question is -- the Agency relied on the consultant's knowledge to be consistent with US EPA guidance.

MS. FRANZETTI: You did not do an independent review to compare what Mr. Yoder came up with in terms of how consistent it was with the US EPA 1985 guidance, correct?

MR. TWAIT: Correct. He was the --

MS. FRANZETTI: Expert.

MR. TWAIT: -- expert.

MS. FRANZETTI: I understand. And so you relied on him?

MR. TWAIT: Yes.

MS. FRANZETTI: I think then we can probably go quickly through these next few

questions. Does the Illinois EPA know what portion or percentage of the fish species database on which the MBI/CABB 2005 report, Exhibit 15, recommendations are based consist of unreviewed data?

MR. TAIT: The Agency does not know the percentage of the data that is unreviewed.

MS. FRANZETTI: Moving on to number four, did either the Illinois EPA or the US EPA Region 5 have Exhibit 15 peer reviewed or take any other steps to address quality assurance issues relating to the report?

MR. TWAIT: Not that I'm aware of.

MS. FRANZETTI: Number five, is it correct that after Exhibit 15 was completed there was no meeting of the stakeholders group for the Lower Des Plaines held to review and discuss the report?

MR. TWAIT: Yes, that is correct.

MS. FRANZETTI: Do you know why that was?

MR. TWAIT: I don't know.

MS. FRANZETTI: Okay. Moving on then

to B, Thermal Standards Development. On Page 2 of the Twait pre-filed testimony it is stated that he, quote, interpreted, end quote, the thermal information Chris Yoder provided and translated that information into the proposed thermal water quality standards.

Now I recognize I think some of this has been covered, and bear with me, I'll try not to be repetitive. I think A has not been asked and answered. Did this interpretation, quote, translation, end quote, include any changes that were intended to address Yoder's statement on Page 7 of Exhibit 15 that, quote, the model output will propagate a degree of uncertainty which can be considered in the eventual derivation and application of the temperature criteria? In other words, did you make adjustments to account for that degree of uncertainty?

MR. TAIT: This statement was not specifically addressed. However, the Agency provided that the daily maximum could be exceeded by two degrees Celsius 2 percent of the time but it was not specifically because

of the statement on Page 7 of Exhibit 15.

MS. FRANZETTI: Was it in part included in order to address the general principal of some uncertainty perhaps to the thermal numbers? I'm not trying to put words in your mouth, Mr. Twait, I just didn't know if you were saying, well, not specific to this statement, but generally because of concerns regarding uncertainty of the reliability of the numbers.

MR. TWAIT: No. I think the Agency put in the two degrees Celsius 2 percent of the time excursions based upon historically putting that in and for compliance reasons.

MS. FRANZETTI: Okay. Moving on to B. As noted at Page 3 of Exhibit 15, quote, the steady or regular increases in test temperature inherent to the methodologies used do not reflect environmental reality, end quote.

Did the Agency's interpretation of the thermal information provided by Mr. Yoder result in any changes to his recommended thermal criteria in order to, quote, reflect

environmental reality, end quote?

MR. TWAIT: The Agency did not make any changes as to the result of those concerns.

MS. FRANZETTI: Was there any review of Mr. Twait's interpretation and translation of the Yoder fish species data that was performed by a recognized expert in such matters?

MR. TWAIT: No. These changes were discussed at meetings within the Agency.

MS. FRANZETTI: Give me a moment. I think maybe part of two has been asked and answered. I'm not sure. We talked about White Sucker, but I don't think this question has been answered. Question two, on Page 12 of the Twait pre-filed testimony it is stated that the eight species RAS list was expanded by adding the White Sucker to this list. Please provide the Illinois EPA's justification for adding the White Sucker to the RAS list and identify who proposed its addition.

MR. TWAIT: Ed Hammer of US EPA

proposed the addition of White Sucker to certain CAWS waterways and Stonecat Madtom to the Upper Dresden Island Pool.

The Agency personnel agreed with the addition of the White Sucker and that's when we made the CAWS A Waters and we disagreed with the addition of the Stonecat Madtom.

MS. FRANZETTI: And because you disagreed, you didn't add it?

MR. TWAIT: That is correct.

MS. FRANZETTI: Okay. Now, just so I understand, with respect to what Region 5 proposed on the White Sucker, was it just proposing its addition for the Use A Waters or was it proposing its addition across the board and you scaled it back to the Use A Waters?

MR. TWAIT: At the time of our proposal, and that would have been the March proposal, we only had one segment for the CAWS waters and Brandon Pool and I think Ed suggested that there was some segments in the waterways that had White Sucker and so we

went and looked at it and we agreed that White Sucker was there and I believe that's when we split off into A and B Waters for temperature.

We had A and B Waters already, but they were not differentiated for temperature. At this point in time is when we separated them for temperature, I believe.

MS. FRANZETTI: Okay. So the addition of White Sucker to the Aquatic Life Use A RAS list actually caused a change in what the Agency decided to propose as the thermal standards for the Use A Waters?

MR. TWAIT: Yes.

MS. FRANZETTI: And that's because it's believed to be the most sensitive species?

MR. TWAIT: With the addition of the White Sucker, that is the most sensitive species out of those what would be nine fish species.

MS. FRANZETTI: And the White Sucker thermal numbers that we're talking about driving that proposed standard, they come

from Mr. Yoder's fish temperature model, correct?

MR. TWAIT: Yes.

MS. WILLIAMS: I would like to ask an indulgence and it's up to your ruling, but yesterday there was a question I had trouble answering on what changed in the temperature propose that you requested we answer in writing. I think we would be prepared now to put that on the record here unless you still prefer that it be done later in writing.

HEARING OFFICER TIPSORD: It was Ms. Franzetti's question?

MS. WILLIAMS: No, it was actually from Stepan.

HEARING OFFICER TIPSORD: I'm fine with him going ahead and answering it now. That would be fine.

MS. WILLIAMS: Well, I know the question on -- it was question four on Page 14 that we were asked to respond to in writing which said on what basis did the Agency change the proposed temperature standard between the last proposal to this

SAG and what was proposed to the Board?

So I would like you to clarify for us the changes that were made from the March 2007 outreach meeting document and what is contained in the Agency's proposal in this rulemaking.

MR. TWAIT: I believe there were four changes. The first change we corrected an error for the summer temperature for the eight species RAS. This made our proposal a little bit more stringent.

I know I said yesterday that everything was less stringent, but I was mistaken. It did make it more stringent. The daily maximum went from 91.9 degrees Fahrenheit to 90.3 degrees Fahrenheit and the monthly average went from 83 -- I'm sorry, it went from 88.3 degrees Fahrenheit to 86.7 degrees Fahrenheit.

MS. WILLIAMS: And you're referring to the CAWS A Waters?

MR. TWAIT: Yes. This would be for -- I'm sorry, this would be for CAWS B Waters.

MS. WILLIAMS: Okay.

MR. TWAIT: The second change was, as we were just discussing, the addition of the White Sucker to the A Waters and that did make it more stringent for the A Waters.

The third change was that we included MWRD effluent as part of the background and this made the non-summer months less stringent. And this was done based on the request by MWRD saying that -- I believe they noted that they were the source of the water so they should be, quote, end quote, background.

And I believe the fourth and last change was the Agency decided to extend the daily maximum summer temperature throughout the year instead of having monthly daily maximum temperatures based on ambient data.

MS. WILLIAMS: And did that last change make it more stringent or less stringent?

MR. TWAIT: Less stringent.

HEARING OFFICER TIPSORD: Thank you very much for that.

MR. TWAIT: Sorry I didn't have it

yesterday.

MS. FRANZETTI: Moving on to question --

MR. DIMOND: I'd like to ask a follow-up on that especially since it was my question being answered.

MS. FRANZETTI: Yes.

MR. DIMOND: I will have to go back and look at the comparison. So I take it that in the March 2007 proposal there were daily maximum temperatures that changed for different periods during the year and so what you're saying is that you changed it so that it's just one daily maximum, just one number throughout the entire year now?

MR. TWAIT: Yes.

MR. DIMOND: Okay. And then I didn't -- the first one that you talked about, you said you corrected a temperature in the eight species RAS. That only affects the Aquatic Life Use B Waters then, right?

MR. TWAIT: Yes, Aquatic Life Use B Waters and Brandon Pool. And at the time it would have affected the A Waters also, but

then we went back and added White Sucker so the White Sucker was driving the proposal.

MR. DIMOND: So what was -- I didn't quite understand what the correction was that you made to the eight species RAS list.

MR. TWAIT: Sure. Exhibit 15 has an error in it for the secondary contact -- well, for the eight species and the Agency corrected that with Attachment HH.

MR. DIMOND: Okay. That's it. Thank you.

MS. FRANZETTI: Moving on to question three. On Page 12 of the Twait pre-filed testimony it is stated that the Illinois EPA determined that the 27 species RAS list identified by Chris Yoder for his modified use classification was an appropriate basis on which to derive the thermal water quality standards for the Upper Dresden Pool. Doesn't the use of only these 27 species that are based on a modified use classification show that the available habitat in the Upper Dresden Pool for aquatic life is more limited than for a full aquatic life use designation

such as general use?

MR. TWAIT: Yes. Well, I won't say yes. The Agency used a modified use RAS 1. We could have and we probably should have used the general use RAS 3 and come up with the same criteria.

MS. FRANZETTI: The last part of that answer threw me.

MR. TWAIT: If we were to be consistent with our proposal throughout just saying that was general use.

MS. WILLIAMS: Do you want him to explain why it would be the same criteria?

MS. FRANZETTI: I'm not sure if that's what he's saying. Have you already looked at that and determined that using Mr. Yoder's methodology, whether you were to use the general use RAS list you'd wind up with essentially the same thermal values as you did using modified use?

MR. TAIT: Yes, for the general use RAS 3 it would have the same criteria for the daily maximum monthly average.

MS. FRANZETTI: Doesn't that cause you

some basis to doubt the reliability of this Yoder methodology for deriving thermal criteria?

MR. TWAIT: Based on his methodology, he had the same RAS -- the same species that was most sensitive for those two categories and that was the White Sucker.

MS. FRANZETTI: I understand what causes it to come out the same as between a modified use category that does not attain clean water aquatic life goals and a full use general use classification that does. My question is does that cause you some doubt or discomfort about relying on such a methodology?

MR. TWAIT: I think Chris testified when he was here that he did not break these categories to mean anything specific or at least that's how the Agency took it. He just used different options.

MS. FRANZETTI: I don't think my question has been answered, but I'll move on.

MS. WILLIAMS: I think that you may be right. Can you repeat it?

MS. FRANZETTI: I'm just asking whether the fact that a methodology that keeps churning out basically the same numbers, irregardless of the significant difference in the use designation, creates some doubt in your mind as to whether or not this is a good, reliable, you know, whatever words you want to use, acceptable methodology for deriving thermal water quality standards?

MR. TWAIT: Since I know how his criteria work and it all depends on projecting the most sensitive species, I would -- I don't know that I can answer that in the affirmative.

MS. FRANZETTI: Okay.

MR. DIMOND: I have a couple of follow-ups. How many species were in the general use RAS 3 category?

MR. TWAIT: There were 49 and then he removed Stonecat Madtom, so I would say 48.

MR. DIMOND: Okay. Thank you.

MS. FRANZETTI: Moving on then to C, Seasonal Ambient Temperature Data.

HEARING OFFICER TIPSORD: Excuse me,

Ms. Franzetti, 4 has been asked and answered?

MS. FRANZETTI: I'm sorry. I jumped over it.

HEARING OFFICER TIPSORD: I only noticed because I think we'll take a break before we move into C.

MS. FRANZETTI: I will ask it. Did Region 5 explain why or provide any technical justification for its request that the Stonecat Madtom be added?

MR. TWAIT: I cannot recall the phone conversation exactly, but I do believe that they suggested that the Stonecat Madtom -- let me make sure I'm talking about the right species. That StoneCat had been found in the Lower Des Plaines River.

MS. FRANZETTI: And you disagreed with it based on your data that indicated it really wasn't present?

MR. TWAIT: No. I talked to our biologist and the habitat was not conducive to StoneCat and so we made the decision that if Stonecat Madtom was found, that this was not its primary habitat.

MS. FRANZETTI: Do you recall what was it about -- and I guess I should stop. We're talking about the Upper Dresden Pool habitat, right?

MR. TWAIT: Yes.

MS. FRANZETTI: Do you recall what it was about the Upper Dresden Pool habitat that wasn't conducive to the Stonecat Madtom?

MR. TWAIT: I think I remember, but Roy would probably --

MR. SMOGOR: I talked with Scott about this. He asked me about my opinion of StoneCat in Lower Des Plaines. I primarily based my opinion on the lack of historical records of StoneCat in the main stem of the Lower Des Plaines. Reasons why that never occurred there, I don't really recall discussing much.

MR. JOHNSON: I thought that was a rock band.

MS. FRANZETTI: I know. I was going to say that.

MR. TWAIT: I remember the conversation a little bit. I believe we

looked up in one of the fish --

MS. FRANZETTI: Books?

MR. TWAIT: -- fish books is what we're calling them.

MS. FRANZETTI: Works for me.

MR. TWAIT: And I believe their habitat was riffle run habitat.

MR. SMOGOR: That's correct. Primarily, it is. Primarily, their habitat is riffle run, but I don't want to say that there's no riffle run in Lower Des Plaines because of the upper part of the tailwater I think has some habitat that may be suitable to StoneCat.

But I don't think they've historically been known to occur in Lower Des Plaines so that kind of trumps that, at least in my opinion.

MS. FRANZETTI: I see. Right. Off the record.

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

HEARING OFFICER TIPSORD: At this point we'll take a break. Let's go

ten minutes or so.

(Whereupon, after a short break was had, the following proceedings were held accordingly.)

HEARING OFFICER TIPSORD: Ms. Franzetti, whenever you're ready.

MS. FRANZETTI: We're moving into the Subpart C of my pre-filed questions, Seasonal Ambient Temperature Data. Question one on Page 83 of the Statement of Reasons and Page 13 of the Twait pre-filed testimony it is stated that the, quote, criteria for non-summer periods are derived to maintain seasonal norms and cycles of increasing and decreasing temperatures, end quote. Explain what the Agency means by the terms seasonal norms and cycles of increasing and decreasing temperatures.

MR. TWAIT: This language was taken from Page 15 of the MBI report, which is Exhibit 15. Basically means that the normal cycle is preserved where it's warmer in the summer and cooler in the winter and a gradual

change in the springtime and fall.

MS. FRANZETTI: So basically are the two phrases -- are seasonal norms basically the same thing as cycles of increasing and decreasing temperatures or are they two different things?

MR. TWAIT: I think the seasonal norms are the winter and the summer and the cycles of increasing and decreasing temperatures are more toward the fall and spring. That's how I interpreted it.

MS. FRANZETTI: Question two, explain how the proposed thermal water quality standards maintained seasonal norms and cycles of increasing an decreasing temperatures.

MR. TWAIT: The Agency tried to pick a background station. I think we've explained how we picked that background station. And having a period average will force or will have a seasonal component and it will increase in the spring and decrease in the fall.

MS. FRANZETTI: Well, I guess I'll use

Upper Dresden Island Pool. I'm looking at Section 302.408, which is the proposed temperatures water quality standards. In Subparagraph D, as in dog, are the proposed temperatures for the Upper Dresden Pool. For example, the period average for the month of January is 54.3 degrees Fahrenheit, for February, it drops down a little bit to 53.6 and then for March it starts going up to -- it goes up to 57.2.

So just using those three months for example, is the point that -- is the theory that you maintain these temperatures for the entire month's average in or about these 50-something degrees to maintain that would be the seasonal norm for the winter months?

MR. TWAIT: You could look at it that way.

MS. FRANZETTI: I'm just trying to interpret what you said, so tell me if you would look at it differently.

MR. TWAIT: The seasonal norms I think is going throughout the winter I guess and

also throughout the summer, yes.

MS. FRANZETTI: And then in the April to -- is the April-May time period what we would define as spring or should I go into the first half of June, include the first half of June in that?

MR. TWAIT: With the Chris Yoder methodology, he's considering the summer from June 16th to September 15th.

MS. FRANZETTI: And so for the cycles of increasing and decreasing temperatures which apply to the fall and springtime period, what did the Agency do here to implement that theory of needing increasing and decreasing temperatures for the spring? And start first by what are you defining as spring based on how the period average months and dates are included?

MR. TWAIT: We didn't do anything specific for springtime. What we did is for the non-summer months we looked at the background temperatures. And once again, that was the ambient station plus MWRD data further effluent and we separated it into the

same period averages that Chris had in his report and we took the 75th percentile and made that into the period average.

MS. FRANZETTI: Okay. Let me just break that down and make sure we all understand that. When you say you took the same period averages as Mr. Yoder did, you mean if he split the month into two different periods as listed here, for example, for April, April 1st to 15th has a period average of 60.8 degrees Fahrenheit, April 16th to 30th has a different period average of 62.1, if he split the month of April, you split the month of April, correct?

MR. TWAIT: That is correct.

MS. FRANZETTI: Okay. So that is what you meant by following his same period averages?

MR. TWAIT: Yes.

MS. FRANZETTI: Okay. Now with respect to getting the thermal values for each of those period averages time periods you created, that's where you used the background temperature data which was, as you

previously explained, either the 75th percentile thermal temperature level of the district's effluent discharge or if it was -- I forget what you said -- more stringent you use the --

MR. TWAIT: We use the least stringent number between the district's effluent data and the receiving stream data.

MS. FRANZETTI: Okay. What I'm not understanding or grasping is how the use in the fall, winter and spring -- well, let me strike that.

Am I understanding correctly that the use of the district's effluent temperature and the stream station, whichever was the least stringent, was that done for fall, winter, spring?

MR. TWAIT: No. That was done for each of the periods here. Like January 1st through 31st we looked at the effluent data and we looked at the stream data.

For February 1st through 28th we looked at the effluent data and the stream data and so on and so forth.

MS. FRANZETTI: So the period average is totally determined by either the district's effluent data or that background stream sampling station throughout the year?

MR. TWAIT: For the period average, yes.

MR. ETTINGER: Were you going to ask about the 75th percentile?

MS. FRANZETTI: I'm going to get there. I'm just first trying to make sure I understand what the period is based on.

MR. TWAIT: That's for the period average for the non-summer months.

MS. FRANZETTI: But see, Mr. Twait, that's what I was trying to get at before. What's the non-summer months?

MR. TWAIT: That is everything other than June 16th through the September 15th.

MS. FRANZETTI: Okay.

MR. TWAIT: Those are the dates for his summer criteria.

MS. FRANZETTI: Okay. So for those non-summer months that run from September 16th through June 15th, how does

the use of the district's effluent temperatures account for or address this need for, quote, unquote, seasonal norms?

MR. TWAIT: I guess nothing in this system is, quote, unquote, normal. We had originally chosen just to use the ambient station but the district made the comment and we accepted that during parts of the year they are the background. I mean, all the flow is theirs and so --

MS. FRANZETTI: Because it's an effluent dominated stream --

MR. TWAIT: Yes.

MS. FRANZETTI: -- during most of the parts of the year?

MR. TWAIT: Yes.

MS. FRANZETTI: Okay. So given that it's not really a normal stream and it is an effluent dominated stream, isn't that really what your numbers reflect, your proposed thermal standards, and not really trying to accommodate seasonal norms?

MR. TWAIT: For these waters, those are basically the norms.

MS. FRANZETTI: Okay.

MR. TWAIT: Seasonal norms.

MS. FRANZETTI: And same question with respect to the increasing and decreasing temperature cycles, does the district's effluent reflect that or is that really not a concept that comes into play in the thermal water quality standards that have been proposed here?

MR. TWAIT: I believe the district's effluent temperature does increase in the spring/fall and in the summer, but not as much as the receiving stream did and so in those cases we used the receiving stream data.

MS. FRANZETTI: Mr. Twait, I'm realizing I'm not sure when you said earlier that you used the least stringent between the district and the receiving water background station. What least stringent means based on that last answer, because I think you just said if the district's effluent temperature didn't increase as much or decrease as much as the background station, you went with the

background station value?

And, I'm sorry, I'll explain. I'm thinking that a greater decrease by the background station would actually result in a more stringent standard, that's why I'm confused.

MR. TWAIT: We did not look at how much it -- I'm just -- I did that just to explain there's not as much variation in the MWRD's effluent as there is in a receiving stream during the spring and fall.

For each of these months or half months for the non-summer period, we took the 75th percentile of the effluent and of the receiving stream and we used the least stringent. It didn't matter which was going up or down the most.

MR. ETTINGER: By least stringent you mean the higher number?

MR. TWAIT: Yes.

MS. FRANZETTI: Mr. Ettinger, I'll get to the 75th percentile question but not for a few more questions.

MR. ETTINGER: I'll let you do it

whenever you're ready.

MS. FRANZETTI: I'm not ignoring. I figure I'll just stay with the script.

Question number three, to what extent, if at all, has the Illinois EPA considered whether the temperatures it has proposed for, quote, maintaining seasonal norms and cycles, end quote, necessarily reflect the thermal prerequisites of the aquatic species that inhabit or that it anticipates will inhabit CAWS and the Upper Dresden Pool?

MR. TWAIT: Maintaining seasonal norms and cycles is for reproduction in the fish and the answer to your question is the Agency has not specifically looked at the requirements of the fish in the Upper Dresden Island Pool or the CAWS or Brandon Road.

HEARING OFFICER TIPSORD: Mr. Safley?

MR. SAFLEY: Tom Safley this time on behalf of Corn Products. I want, Mr. Twait, to zero in a little bit on the CAWS and Chicago Sanitary and Ship Canal. And your answer that you just gave was that the change

in seasonal temperature is meant to address or take into account reproduction; is that correct?

MR. TWAIT: Yes.

MR. SAFLEY: Okay. Earlier in your testimony today and also in your pre-filed testimony you stated that at least some portions of the Chicago Area Waterway System, and I think in particular the Chicago Sanitary and Ship Canal are -- the Agency is not protecting those waters to protect early life stages; is that correct?

MR. TWAIT: Yes.

MR. SAFLEY: If that's the case, what is the need for the seasonal variation in the Chicago Sanitary and Ship Canal, for example, if the Agency does not expect early life stages to be present?

MR. TWAIT: The Agency is not protecting for early life stages because the habitat is not there for the early life stages. However, it was thought that the fish could swim upstream or downstream to find the habitat to spawn, so we're trying to

protect their ability to spawn.

MR. SAFLEY: And just so I understand, it's the Agency's position that the temperature in, for example, the Chicago Sanitary and Ship Canal does have an effect on the reproduction of the fish in that area even if they're not spawning in that water body?

MR. TWAIT: That is the theory behind wanting to protect for the seasonal norms, yes.

MR. SAFLEY: Okay. And what's the support for that theory or information that the Agency relied upon?

MR. TWAIT: That is all within Attachment 15 in Chris Yoder's.

HEARING OFFICER TIPSORD: Exhibit 15?

MR. TWAIT: Exhibit 15. Thank you.

MR. SAFLEY: Those are my only questions.

HEARING OFFICER TIPSORD: Mr. Fort, you had a follow-up?

MR. FORT: Mr. Twait, your comments here about the fish swim, is that -- can you

comment upon the number of locks and damns there are in the Chicago Sanitary and Ship Canal and how quickly the fish will swim up and through those devices?

MR. TWAIT: I think there's only one lock and damn that is on the lower portion of the Sanitary and Ship Canal and so the fish could swim up into the Cal Sag Channel or farther up to where there's available habitat on the Sanitary and Ship Canal. And if they're in the Brandon Pool, then their downstream is Brandon Lock and Damn, upstream is the Lockport Lock and Damn, however, they can get to the Des Plaines River in the Upper Des Plaines River where it's general use water quality standards.

MR. FORT: I think I have to look at a map for various lock and damns, but go ahead. I'll look at that before I go any further.

MS. FRANZETTI: Can I ask a question to make sure I understand what you're saying? I understand that the Agency believes that maintaining seasonal norms and cycles is necessary for reproduction in fish. But then

in answer to Mr. Safley's questions you were saying but it's also necessary to maintain those seasonal norms and cycles in areas where you don't expect reproduction because fish may be passing through those areas to get to areas where they can reproduce, correct?

MR. TWAIT: Yes.

MS. FRANZETTI: Okay. So if I'm a fish and I'm in the mood for love and I got to get to where I need, you're saying that if I happen to pass through some waters that are not consistent with those seasonal norms, when I get to the other side I'm not going to be able to reproduce?

MR. SULSKI: I'm thinking of Yoder --

MS. FRANZETTI: It doesn't seem to make sense.

MR. SULSKI: Yes. No. I'm thinking of Yoder's testimony that in addition to reproductive times, you have a pre-reproductive time period where adults have to go through a seasonal norm to ready themselves for reproduction.

So if you have a fish residing in or passing through an area that doesn't have those seasonal norms, it's not morphologically getting ready for reproduction.

MS. FRANZETTI: So the fish that tend to live in the Sanitary and Ship Canal, you're saying they will go elsewhere to reproduce and so they need this seasonal norm to get them ready to do that?

MR. SULSKI: That's my understanding of the Yoder's testimony.

MS. FRANZETTI: I understand that. You're trying to relay what he said. Okay.

MR. TWAIT: I don't know that it's necessarily just they're going somewhere else to reproduce, but they will go somewhere else to spawn. I don't know if there's much of a difference there.

MR. SAFLEY: If I could follow-up again? Tom Safley. That was going to be my question in relating back to a response, Mr. Twait, that you gave to an earlier question of Ms. Franzetti. Has the Agency

looked at what temperatures are conducive to spawning as opposed to what temperatures are conducive to this pre-spawning period that Mr. Sulski mentioned?

MR. SMOGOR: If you're asking for a specific temperature as to what cues the -- acts as cues, I don't know specific temperatures at which fish are cued or triggered.

MR. SAFLEY: And I didn't necessarily mean to ask for specific temperatures, but Ms. Franzetti's question three was has the Agency looked at how this maintenance of seasonal norms is going to affect the thermal prerequisites of the fishing and I thought Mr. Twait's answer was we haven't looked at that question. I was trying to hone in even more specifically and make sure I'm correct that the Agency has not considered the issue of essentially is it necessary for the same seasonal variations to occur at least to the same degree if the spawning is not occurring in that water body and all that's occurring in that water body is the pre-spawning

period. And it sounds to me like the Agency has not separated that issue and looked specifically at that issue. I just wanted to make sure that I was correct about that.

MR. SULSKI: Well, I think that the response to the question was whether they're spawning in that waterway or not, if they're residing there, they have the ability to reside there for periods of time, if you disrupt the seasonal norms, you have the potential of morphologically disrupting their processes so that they wouldn't be ready to spawn or they wouldn't spawn or they wouldn't, you know --

MR. SAFLEY: Right. And I apologize. I was just trying to get a little bit more specific if it was possible or the Agency had had any data on whether you could separate outside temperatures at the time of spawning as opposed to temperatures pre-spawning and what kind of effect that might. I just was asking if that --

MS. WILLIAMS: Can I ask a follow-up, too, I guess or a restatement? I think part

of what you're asking is is there data out there that we're aware of that would tell us the difference in the temperature needs or the specifics of the temperature needs for this gametogenesis in general?

MR. SMOGOR: My experience with some of the state fishery fish texts that have species-by-species accounts of the animal's natural history and observations made on the species, there are observations of water temperatures at which fish are found in particular spawning colors or spawning conditions and even temperatures available at which -- that are associated with observations of actual spawning of fish.

I don't know of any specifics on temperatures at which fish first start to -- you know, internally maybe are triggered to get ready for the spawning season. I'm not familiar with any detail other than that.

MR. SAFLEY: And that was going to be my next follow-up question. Is there any way or does the Agency have any information on whether fish need a higher temperature or a

lower temperature at that pre-spawning stage as opposed to at the spawning stage, and it sounds like the answer to that question is, no, the Agency does not have any information on that.

MR. TWAIT: While Roy was talking here I did find some. In Appendix Table Z3 of Attachment 1 of Chris Yoder's pre-filed testimony -- I'm sorry, maybe it's not attachment one. It's Attachment 3 of Chris Yoder's pre-filed testimony.

HEARING OFFICER TIPSORD: Which is Exhibit 16.

MR. SAFLEY: So I should look at that is what you're saying?

MS. FRANZETTI: Hang on. Let's let Mr. Twait tell us what type of information is in that appendix.

MR. TWAIT: The Agency has not looked at this specifically. And this only talks about spawning periods and associated low and high temperatures, not necessarily what they need for gametogenesis.

MS. FRANZETTI: Or as I like to call

it, just getting ready.

HEARING OFFICER TIPSORD: Mr. Andes, you had a follow-up, as well?

MR. ANDES: Yes. We're talking a lot about spawning, but I seem to recall a discussion about yesterday, correct me if I'm wrong, but yesterday there wasn't any actual evidence of spawning, it was simply that there were fish collected that were smaller than normal; am I right?

MR. SMOGOR: If you're referring to, I think, some of my testimony yesterday, you asked is there evidence of spawning in Chicago Area Waterway System and maybe I didn't use the word inferred, but there was inferred evidence of spawning, which is not -- I agree that's not direct observations of fish spawning.

But the inference is that if small individuals do occur across several species, it's likely that they did occur -- that they did spawn somewhere in the system to allow the occurrence of those small sub-adult individuals.

MR. ANDES: Somewhere in the system?

MR. SMOGOR: Somewhere in the system. I cannot infer exactly where they did spawn.

MR. ANDES: Okay.

HEARING OFFICER TIPSORD: Mr. Safley?

MR. SAFLEY: If I could just continue, we've been talking about reproduction, does the changes in -- the seasonal changes in temperature, does that have any relevance to the development of early life stages or is the only issue with regard to seasonal changes the reproductive activity?

MR. TWAIT: I believe it's the reproductive activity.

MS. FRANZETTI: If I can just distill a few things from this? As we sit here today we don't know whether every species needs this increasing, decreasing temperature or seasonal norms, whichever, in order to ready itself to reproduce, correct? We don't know that all of them need this?

MR. SMOGOR: I don't know that.

MS. FRANZETTI: Well --

MR. SULSKI: We do know one thing,

though, just an obvious thing is that relatively speaking we've been around here for a very short period of time and the aquatic wildlife within our area developed over thousands and thousands of years and developed in a system that had seasonal norms. I just wanted to throw that out.

MS. FRANZETTI: Can I just finish this? Couple more just on this. You don't --

MR. SULSKI: Sex and evolution, where can we go next?

MS. FRANZETTI: And I'm trying to be careful. Isn't it true that gametogenesis has only been demonstrated for a few species? And, again, if you don't know, say you don't know.

MR. SMOGOR: My understanding of the word gametogenesis is gametes are the reproductive sperm and eggs and genesis is creation of sperm and eggs, so gametogenesis happens in any reproducing -- sexually reproducing organism.

MS. FRANZETTI: Okay. Let me be more

specific. That you need the cool period to --

MR. SMOGOR: To get ready.

MS. FRANZETTI: To get ready.

MR. SMOGOR: I'm not aware that for every species it's been absolutely proven that a cool period is needed to get ready.

MS. FRANZETTI: And are you aware that it's only been proven for a few species that it is needed?

MR. SMOGOR: No, I'm not aware of that.

MS. FRANZETTI: Okay. That's fine. And, therefore, it is possible that the species that do need it are not species that are either present or are going to be present in the Chicago Sanitary and Ship Canal or Brandon Pool?

MR. SMOGOR: Not knowing -- taking your word that it's only been proven for a few species, not knowing those species and not knowing much about that information, I can't comment any further on that.

MS. FRANZETTI: Okay. Mr. Ettinger?

MR. ETTINGER: There's two things that have been left hanging and I don't know whether you're getting here. One is the 75th percentile problem.

MS. FRANZETTI: Going to get there.

MR. ETTINGER: The other relates to this same set of issues is whether -- maybe I'll ask this now and maybe pursue it more. Is part of the rationale behind setting these period averages to protect against cold shock?

MR. TWAIT: No.

MR. ETTINGER: Is there anything then -- if we took away the period averages here, would there be anything to protect against cold shock in these systems?

MR. TWAIT: No.

MR. ETTINGER: Thank you.

HEARING OFFICER TIPSORD: Mr. Andes?

MR. ANDES: Is there any evidence that cold shock syndrome is a phenomenon that exists in these types of water bodies or these types of species?

MR. TWAIT: We know that cold shock

does happen and we've seen it in perched lakes where the power plant has shutdown and they get a fish kill because the water got too cold too fast.

I don't necessarily know that cold shock is an issue for a stream like this.

MR. ANDES: Thank you.

MR. SULSKI: I would add to that we don't know. It could be because of the earlier testimony about what happens when we have late August -- I mean, early August, late July storm events that drop the temperature. However, there's multiple factors that are occurring there.

MS. FRANZETTI: Again, just so we're clear, these standards don't prevent Midwest Generation from shutting down a plant for a few days, correct?

MR. TWAIT: Correct. There is nothing in Illinois, there is nothing even in general use water quality standards that prevent cold shock.

MS. FRANZETTI: And would you agree you really can't write a standard that

compels a discharger not to shut down?

MR. TWAIT: Well, it would be tough to write a regulation. However, I do know that when there are fish kills, when a plant shuts down and they do have fish kills, there are repercussions.

MR. ETTINGER: You can write a standard to keep the temperature from there being such a great differential between the ambient temperature and the heated temperature such that if you shut down a plant rapidly there won't be cold shock?

MR. TWAIT: I suppose we could write something like that. We -- I'll leave it at that.

MR. ETTINGER: Thank you.

MS. FRANZETTI: Moving on, I think number four you've answered. It was meant to just identify where the Agency's approach to the non-summer period thermal water quality standards is the same as the approach suggested by Mr. Yoder and where does it differ.

And I think you've said it's just

basically the use of the Midwest Gen effluent discharge temps in certain instances rather than a, quote, unquote, true --

MR. TWAIT: Midwest Gen?

MS. FRANZETTI: I'm sorry. Thank you, Mr. Twait. The Water Reclamation District's effluent temperature -- it was wishful thinking on my part -- instead of a true background ambient station?

MR. TWAIT: There are more differences than that.

MS. FRANZETTI: For the -- again, for the non-summer period?

MR. TWAIT: Yes.

MS. FRANZETTI: Okay. Go ahead then if there are.

MR. TWAIT: The MBI report suggests using a daily maximum based on background temperature using a statistical method and they suggested 98th percentile. And once again, that would be for the daily maximum.

And when you choose a limit based on the 98th percentile, you're automatically choosing a 2 percent exceedance rate. The

Agency decided not to go with that statistic and instead used the summer maximum and applied that year round.

The other difference is the MBI report suggested using a geometrical mean of the background temperature as a period average and the Agency used a 75th percentile for the period average. And the agency used a different ambient site for the, quote, unquote, background, including the use of the MWRD facilities.

MS. FRANZETTI: Okay. Why did the Agency decide to use 75th percentile rather than the geometric mean?

MR. TWAIT: Part of that was based on my participation in the ORSANCO work group. They were looking at -- they were looking to use the geometrical mean also based on Chris Yoder's report. And they started looking at it year by year and seeing the rate of exceedances and decided that the exceedance amount was --

MS. FRANZETTI: High.

MR. TWAIT: -- was high or

unacceptable. I don't know that I'd say it's high, but there was periodic exceedances, and I'm going to say every year based upon all the period averages, so they decided to use something different.

And at one time they were using the 75th percentile, although I think they ended up using something different than that.

MS. FRANZETTI: Okay. So I think also basically what you're saying is ORSANCO decided like the Agency not to follow Yoder's recommendation of the geometric mean?

MR. TWAIT: Yes.

MS. FRANZETTI: With respect to the Agency's decision to use the summer maximum applied throughout the year as the daily max rather than the 98 percent, was the reason there because the 98 percent fills in and 2 percent of the time everybody is going to exceed it?

MR. TWAIT: That was -- yes.

MS. FRANZETTI: Any other reason? Not staying there is one, I just want to make sure we understand the reason for the

decision.

MR. TWAIT: I think that was the only reason. And we looked at using some different statistical method, but we decided instead to just take the summer maximum throughout the year.

MS. FRANZETTI: Actually, how did you come up with that alternative of using the summer max throughout the year? I mean, is that -- had another group like ORSANCO done that?

MR. TWAIT: No. That was basically Toby's idea.

MS. FRANZETTI: Sure, let's blame him, he's gone.

MR. TWAIT: Yeah, he's not here, I'm going to blame him. I had suggested using -- let me see if I can find it. I had suggested using the 75th percentile plus 1.5 times the inner cortile range or the 75th percentile plus 2.5 times the inner cortile range, and those are all statistical values, the inner cortile range. I believe it's called nonparametric.

And we were noticing some exceedances anyway from that data and Toby just -- we talked to Chris and I don't know that Chris would agree but we decided that the period average would take care of the gametogenesis in the reproduction introduction and so we decided to go with the daily maximum throughout the year.

MS. FRANZETTI: Moving on to question five, on Page 83 of the Statement of Reasons and Page 13 of the Twait pre-filed testimony it is stated that, quote, the monitoring location at Route 83 on Chicago Sanitary and Ship Canal was used at the, quote, background location because it was not directly influenced by thermal sources such as cooling water or Lake Michigan and was believed to be representative of, quote, background temperatures, end quote.

Explain how the Agency defines background as used in this quotation and as applied to the Chicago Sanitary and Ship Canal and Lower Des Plaines?

MR. TWAIT: This system does not have

any, quote, unquote, background temperatures. Some areas are influenced by Lake Michigan and would have cool waters, some areas are influenced by thermal sources and some areas are influenced by the district's discharge.

The Agency tried to choose a non-summer thermal criteria that was reasonable and we ended up choosing the Route 83 monitoring location on the Chicago Sanitary and Ship Canal.

MS. FRANZETTI: Okay.

MS. WILLIAMS: A related follow-up at this point. Was that different from the background station Mr. Yoder suggested?

MR. TWAIT: Yes. Chris Yoder's suggested background station was the Route 83 monitoring location on the Cal Sag Channel.

MS. WILLIAMS: And can you explain what the difference would be between those two?

MR. TWAIT: The Agency felt that that station was much more influenced by the lake water and it was much cooler than the station that we chose.

MS. WILLIAMS: Thank you. I see Route 83 and I just assumed they're the same thing, so I thought it would help to clarify that there's two Route 83 stations.

MS. FRANZETTI: Thank you, Counsel. Moving on to number six. On Page 13 of the Twait pre-filed testimony it is stated that, quote, because the source water of the CAWS is composed of the MWRDGC wastewater treatment plant effluence, the temperatures of these waters can be expected to exceed other measures of background or ambient temperature at certain times of the year. Consequently, the Agency decided to use the effluent temperature from the MWRDGC's north side, Calumet and Stickney facility as the background temperature instead of using temperatures at the Route 83 Chicago Sanitary and Ship Canal station during periods of the non-summer months when the effluent temperature was higher than the background temperature. These periods were January, February, October 1 to 15, November and December, see also Statement of Reasons at

Page 83.

I think we've covered Subpart A, what's the purpose of background temperatures. And I think just based on your last answer, do you agree that wastewater treatment plants effluent really isn't accurately considered background temperature for a waterway in the common understanding of the term background temperature.

MR. TWAIT: For normal waterways, I would tend to agree. But in this case, since the majority of the flow is from the district, we thought that that was a -- we thought it was appropriate to use it as a background temperature.

MS. FRANZETTI: Moving on to C. As stated at Page 13 of the Twait pre-filed testimony, the use of the MWRDGC effluent temperature data as background constituted an alteration to the recommendations in Yoder's temperature report by the Illinois EPA.

Is it correct that the reason this alteration was made is as stated at Page 14 of Twait's pre-filed testimony, namely that

using Yoder's recommendations for how to derive the thermal water quality standards would have resulted in standards that were lower than the temperature of the district's effluence and thus, quote, would have required installation of cooling towers or other treatment technology to reduce the temperature of these effluents, these effluents being the district's effluent?

MR. TWAIT: I know that's my statement.

MS. FRANZETTI: Well, Mr. Twait, I recall earlier I think you did mention that the district commented --

MR. TWAIT: Yes, they did.

MS. FRANZETTI: -- on a prior proposed set of thermal standards which did use the Route 83 station, and I can't recall whether it was the ship canal.

MR. TWAIT: It was the ship canal.

MS. FRANZETTI: Wasn't there a comment that if you proceed with this approach, we're going to have to cool the effluent from our plants?

MR. TWAIT: Well, when we talked to Mr. Yoder and asked him how he would proceed, he suggested that we look at giving MWRDGC a mixing zone. And our water quality standards would not be written in such a way to give them a mixing zone for the thermal water quality standards. That's not how we write water quality standards.

MS. FRANZETTI: Well, Mr. Twait, given that they dominate the waterway at many times of year, right?

MR. TWAIT: Yes.

MS. FRANZETTI: Well, how could you give them a mixing zone? Wouldn't that be that they're basically -- you'd have to give them the whole water column?

MR. TWAIT: For the north side and Calumet facilities, yeah, that would be correct.

MS. FRANZETTI: As you said, our mixing zone regs have a requirements for things like a zone of passage, correct?

MR. TWAIT: Correct.

MS. FRANZETTI: And that would have

violated that, right?

MR. TWAIT: Yes. But I don't know that they would have had any particular problem at those two facilities. I'm not sure but, yes, that's a correct statement that they mentioned that they were the background and that they would have trouble meeting the water quality standards and their discharge.

HEARING OFFICER TIPSORD: Mr. Andes has a follow-up.

MR. ANDES: Mr. Twait, the concept of in an effluent dominated water body, using the characteristics of the effluent as background is not a new concept, right?

MR. TWAIT: For which part of -- I don't quite understand the question.

MS. WILLIAMS: Is it specific to thermal that you're asking the question?

MR. ANDES: I was speaking more generally, but if you want to address thermal, that's fine.

What I'm trying to ask really is was the primary basis for making this

decision that, as you stated earlier, the Agency felt it was appropriate to use the temperature of the effluence because it dominates the water body and, therefore, was appropriate to use that as background; is that right?

MR. TWAIT: Yes.

MR. ANDES: So the Agency felt that that particular way of dealing with it was appropriate from a regulatory perspective?

MR. TWAIT: Yes.

MR. ANDES: So it wasn't the Agency's intent to bail out MWRD by making this treatment, rather it felt this is an appropriate regulatory mechanism?

MR. TWAIT: We did think it was an appropriate mechanism.

MR. ANDES: Thank you.

MS. FRANZETTI: That also bailed out the MWRDC, right?

MR. TWAIT: I guess it would have.

MS. FRANZETTI: Moving on to D, is it correct to state that the alteration to the Yoder approach to deriving thermal water

quality standards resulted in an accommodation to the MWRDGC so that it would not incur the economic costs of having to comply with the non-summer thermal water quality standards?

MR. TWAIT: The Agency believes that that's an appropriate approach.

MS. FRANZETTI: Did the Agency perform any economic analysis with respect to the MWRGDC?

MR. TWAIT: No.

MS. FRANZETTI: With respect to E, does the Agency have any underlying rationale for the decision to set the thermal water quality standards based on the goal of avoiding cooling costs for a particular discharger?

MR. ANDES: I object to the characterization. That's the goal of the rule.

HEARING OFFICER TIPSORD: Could you rephrase?

MS. FRANZETTI: Well, is it fair to alter your proposed thermal standards, as you

did, so as not to compel one discharger to install supplemental cooling while forcing other dischargers to do so?

MR. ANDES: I'm going to object again. That's saying it was done so as to avoid those costs.

MS. FRANZETTI: Well, the testimony will speak for itself as well as the pre-filed written testimony.

MR. ETTINGER: Is it really -- I know it's rhetorically fun, but does it really advance us to ask the witness to answer what is fair at this point? I guess we can all make judgments on that.

HEARING OFFICER TIPSORD: I guess I understand the objections, but I also understand where Ms. Franzetti is going in looking for some economics here as to why economically you didn't perform an economic analysis I'm assuming before you decided this was a more appropriate method, correct?

MR. TWAIT: Correct.

HEARING OFFICER TIPSORD: But you didn't perform an economic analysis to make

that determination?

MR. TWAIT: We did not.

HEARING OFFICER TIPSORD: But aren't you concerned that on the one hand this decision has meant that, economically, certain dischargers will not have to perform functions that other dischargers are going to in the same rulemaking? I mean, is there -- there does seem to be a disparity there and I'm wondering if you can explain or talk to me, explain on the record why that would be. Why on the one hand you did it one way, but not on the other? Why you're not giving the break to all dischargers instead of just -- and perhaps break is not the right word.

Remember, these are just to enhance the record. This does not mean any predisposition on the part of the Board. I'm trying to enhance the record here and get the explanation of what seems to be a disparity.

MS. WILLHITE: I think I'm going to take that one. I think the main basis of this decision was the fact that the flow of this water system comes from the district's

effluence. As you've noted effluent dominated, I think that's the main rationale.

And we acknowledge that it does have this result of differential impact. I think that's often the case when there is a standard setting or permit limits put in place there can be disparities between requirements on dischargers.

But my understanding of the main rationale is focused on that -- for the system we're talking about, the effluent forms the waterway.

MS. FRANZETTI: Mr. Dimond?

MR. DIMOND: Ms. Willhite, if the MWRD gets a break because --

MR. ANDES: I'll object to that characterization.

MR. DIMOND: If the MWRD doesn't have to install cooling systems because their discharge is effluent, why shouldn't all the other dischargers who discharge effluent get the same consideration? The rationale could apply to any discharger, but you've decided selectively only to apply it to one

discharger.

MS. WILLHITE: Well, that may be your perception of it, but that wasn't the rationale.

MR. FORT: Well, just to follow this up, why make a distinction even on things like the nitrification facility, which my client, Citgo, operates in order to meet the ammonia requirements? So it has very similar technology even to what the district does, but because of the mixing zone rule being the way it is, we are affected adversely by this decision as it plays out.

MS. WILLHITE: I'm struggling on the applicability here of the analogy.

MR. FORT: We have a nitrification facility that we have to heat, particularly in the winter, in order to make sure the bugs grow and do their job, same technology, same kind of treatment, not exactly the same, but same principles that the district has.

The standard as you proposed it is going to affect us mostly because of the upstream temperature, not our own

temperature.

MS. WILLIAMS: Can you explain how?

MR. FORT: There's no -- there will be no mixing zone, so what's the rationale on that technology basis to make a distinction one from the other?

MS. WILLHITE: I guess it goes back to my original comment that -- at least my understanding, and I haven't studied it carefully, is that in your portion of the river there is other flow coming besides your own, you're not forming the waterway as is the case with the district.

MR. ETTINGER: I guess we're all seeing the slippery slope that happens when you cut deals with particular dischargers, but in this case I would ask to --

MS. WILLHITE: Excuse me?

HEARING OFFICER TIPSORD: Objection noted.

MR. ETTINGER: But in this case is there any reason to believe that there will be a biological impact from using the Metropolitan Water Reclamation District's

discharge temperature as the background temperature for the month that it's used?

MS. WILLHITE: I'll bump that to another member of the team here.

MR. TWAIT: I can tell you what the difference is in the background temperature.

MR. ETTINGER: I'm not asking about the differences in the temperature. I'm asking about the potential for effecting the chemical or --

MR. TWAIT: I don't know the answer to that.

MR. ETTINGER: -- the biological integrity of the water by using the MWRD discharge temperature in the Sanitary and Ship Canal as opposed to what the Yoder calculation would have been?

MR. TWAIT: The Agency does not know whether there would be one or not. But if we did know that there would be a difference, then we would not have proposed it.

MR. ETTINGER: Thank you.

MS. FRANZETTI: Because the goal of the proposed thermal water quality standards

is supposed to be to protect the aquatic community that is there or is capable of being there, correct?

MR. TWAIT: Yes.

MS. FRANZETTI: And so we don't know if by using the district's effluent thermal temperatures whether or not we're doing that; is that -- that's what I think I understand you to say?

MR. TWAIT: I think that's a fair characterization.

MS. FRANZETTI: Moving to question seven. On Page 83 of the Statement of Reasons and at Page 14 of the Twait pre-filed testimony it is stated that the Agency, quote, used the 75th percentile as the monthly average to ensure that the seasonal norms are preserved in the system.

Explain -- I think you've done some of this, but I think we want to get into the issue of why the 75th percentile as the monthly average ensures that the seasonal norms are preserved.

MR. TWAIT: If you were to look at it

year by year to keep the seasonal norms, you'd be looking at a 50th percentile, that would give you exactly half. Half of the data would be above that point and half the data would be below that point.

So if we were to know in advance what each year was, we could set it at the 50th percentile and that would be exactly the temperature that the average would come out to be. We chose the 75th percentile because there's variation from year to year. I noticed -- well, I'll stop there.

MS. FRANZETTI: Don't be volunteering anything. Before I go further, just so we have it in the record, what do we mean by the 75th percentile as used here?

MR. TWAIT: It is the number where 75 percent of the data points would fall below that number and 25 percent would be above that number.

MS. FRANZETTI: In a given year? I mean, did you take a -- choose a year of the district's data or was that over a longer period?

MR. TWAIT: It was over a longer period. And we asked the district to provide the same data set that Chris Yoder used and that was the data collected from 1998 to 2004.

MS. FRANZETTI: Okay. So it's the 75th percentile across all those approximately six years of data?

MR. TWAIT: Yes.

MS. FRANZETTI: Okay.

MR. SAFLEY: May I follow up?

HEARING OFFICER TIPSORD: Mr. Twait, keeping in mind that there can be yearly variations, would that mean that 25 percent of the time one would expect that the temperatures downstream of the MWRD facilities are going to be higher than the standards you're proposing?

MR. TWAIT: No.

MR. SAFLEY: And explain to me why that's not the case.

MR. TWAIT: We took the 75th percentile of all the data and we're using that as a period average. So

25 percent of the values will be above the water quality standard -- or 25 percent of the values will theoretically be above the standard and 75 percent will be below. And so when you take an average, it may not necessarily result in a violation.

MR. SAFLEY: Okay. And I have two follow-up questions after that. When you say 25 percent will be above the standard, you mean the period average standard or you mean the maximum standard, the same all year?

MR. TWAIT: The way the 75th percentile works is 25 percent of the individual values were above what we've chosen as a numeric value for our period average.

MR. SAFLEY: For the period average. So 25 percent were not above the maximum temperature number?

MR. TWAIT: Correct.

MR. SAFLEY: Okay. So if I'm looking at Chicago Area Waterway System, you know, Brandon Pool Aquatic Life Use B Water January 1 through 31, the period average is

54.3 degrees; what you're saying is the data that you looked at, you looked at each January for six years --

MR. TWAIT: It's actually seven years, but, yes.

MR. SAFLEY: All right. Each January for seven years and 25 percent of the time the numbers were above that 54.3 degrees.

MR. TWAIT: Twenty-five percent of the individual numbers were above that, yes.

MR. SAFLEY: Okay. Did the Agency undertake any kind of analysis to run the average numbers to find out how the averages would play out and whether that 25 percent/75 percent split would result in average numbers that were below this for the period average?

MR. TWAIT: In Chris Yoder's report, Exhibit 15, Appendix Table 2, he lists lots of statistical values. He's got the month, the period, the number of samples, the mean of all those samples, a geometric mean of all those samples, a median of those samples, a single maximum occurrence, a maximum

occurrence that occurred twice, a maximum occurrence that occurred three times. Then he's got several different percentiles; the 98th, 95th, 90th, 75th percentile and 5th percentile and then he's got some other nonparametric values.

MR. SAFLEY: So if I wanted to try to determine based on the data whether or not on a period average basis the water -- the effluent downstream of the MWRD facilities would be above or below the period average, I could at least, to some extent, get that out of that Yoder Appendix Table 2?

MR. TWAIT: You could make the comparison of the mean against the 75th -- or against the proposal. That, of course, doesn't tell you what happened each individual year.

MR. SAFLEY: Okay. So the numbers -- and I found this appendix. These numbers -- the mean is for all seven years?

MR. TWAIT: Yes.

MR. SAFLEY: Okay. So I can certainly say on an average basis over a seven-year

period, and I'm looking right now at the entire month of January, it's a number of 49.6. And I don't know where this collection point was, but that that is below the 54.3 in the rule so just looking at that I would say averaging over seven years it doesn't look like for January the monthly average would be above the standard that's proposed; is that the right way to do that?

MR. TWAIT: Yes. With that limited data set, yes.

MR. SAFLEY: Okay.

MR. TWAIT: Like I said, it doesn't have -- the individual average could be higher one year and lower the next year. And, actually, it will be higher one year and then lower the next year.

MR. SAFLEY: And are those individual data sets by year in the Agency's submission to the Board?

MR. TWAIT: I do not believe so.

MR. SAFLEY: Okay. My guess is someone is going to say they're available on MWRD's website, but...

MR. TWAIT: The data was from MWRD. I don't know if it's on their website or not.

MR. SAFLEY: Is that something that we could get in the record if that's what's making up the numbers on this table?

MS. WILLIAMS: Yes. I mean, if it's not in the record, we can put it in the record.

MR. SAFLEY: And if it is in the record, I realize that the record is so big in this and it may be that I just don't realize it.

MR. TWAIT: If I have the data, we'll put it in the record. But if I don't have the data, then we'll have to ask MWRD for the data or at least a cite to their website.

MR. SAFLEY: And, clearly, Chris Yoder had the data at some point; is that correct?

MR. TWAIT: Yes.

MR. SAFLEY: And the Agency provided that data to him; is that correct?

MR. TWAIT: I believe that he went right to the district for it.

MR. SAFLEY: Okay.

HEARING OFFICER TIPSORD: Attachment W maybe, 2001-2006 effluent sampling result for temperature at Water Reclamation District plants?

MR. TWAIT: No. Well, that would have just been the effluent data that we used for setting background, not the actual sampling sites.

If I do have that data, it will be in a large database. And I think I have it on a CD. What would be the best way to provide that if I have it?

HEARING OFFICER TIPSORD: If you have it, you can certainly provide it to the Board on a CD. Does anyone object to receiving that on a CD? And I'm assuming most of the people here are on the service list so a CD is fine.

MR. SAFLEY: Does the Agency have any information right now on the statistical likelihood that if you looked at an individual year in a month or two-week time period that there would be on an average basis a violation of the Agency's proposed

standard?

MR. TWAIT: No. I don't believe we made that analysis.

MR. SAFLEY: Okay. Does the Agency consider there to be a statistical probability that there would be a violation in one of those time periods?

MR. TWAIT: For the particular -- no, I don't.

MR. SAFLEY: Okay. Looking at this Appendix Table 2, each month is broken up into entire, early and late. Are you aware -- is early always the first half of the days of the month and late always the second half of the days of the month? Would that correspond with, for example, April 1 through 15 and 16 through 30 or do we know?

MW. TWAIT: I believe that Chris used the same format for, like, the 1st through the 15th and then the 16th through the end of the month.

MR. SAFLEY: Okay.

HEARING OFFICER TIPSORD: And just to be clear, Appendix Table 2 of Exhibit 15?

MR. TWAIT: Yes.

MR. SAFLEY: Those are all my questions right now. Thank you.

MS. FRANZETTI: And I just have one more question on it. I'm not understanding, given the testimony we've had this afternoon about the fact from the Agency's perspective it's an effluent dominated stream so it's reasonable to use the effluent of the district as the background, why not use 100th percentile? Why are we doing 75 percent?

MR. TWAIT: The reason that we did not use the 100th percentile is -- well, if we had used the 100th percentile, that would be the highest temperature ever measured in that time period and then we would turn around and set that as the average and we did not think that was appropriate.

MS. FRANZETTI: Okay. But in using the 75th, we could have issues of noncompliance by the district's own effluent on which the standard is based?

MR. TWAIT: Anything is possible.

MS. FRANZETTI: But statistically isn't that --

MR. TWAIT: Statistically, if we were looking at one year only and we chose the 75th percentile, then there would be no chance of violating that number as a period average.

But because we are looking at eight years and taking the 75th percentile, there could be a year that has high temperatures.

MS. FRANZETTI: Okay.

MR. ETTINGER: Realistically, the Metropolitan Water Reclamation District's dischargers don't vary from all that much from year to year, do they?

MR. TWAIT: I don't know how much they vary from year to year. The data is included as Attachment W.

MS. FRANZETTI: I just submit it sounds like they do a bit since you didn't want to use the 100th percentile because it was too high.

MR. TWAIT: Well, using the

100th percentile value would -- if we went out to the stream and found out that the stream had gotten to say 88 degrees and that was the highest that we had measured, that would be the 100th percentile.

MS. FRANZETTI: In that year?

MR. TWAIT: And then we would take that 88 degrees and say that's what the period average has to be.

MS. FRANZETTI: When you take the 100 -- I guess you're saying one year. Wouldn't you be looking over six or seven years?

MR. TWAIT: If we took the data from the seven years and had taken the 100th percentile, basically the 100th percentile is the highest value recorded.

MS. FRANZETTI: Ever in the seven years.

MR. TWAIT: Even in the seven years. That's the highest value. That would be the 100th percentile.

MS. FRANZETTI: Okay. I think I was

misunderstanding. I thought you would take the highest in each January and average them?

MR. TWAIT: Okay.

MS. FRANZETTI: No?

MR. TWAIT: Yes. If we took the highest -- if we took the 100th percentile of the January 1st through 31st data, first through 31st, if we had taken that data and the highest value was say 60 degrees, then we would turn around and say that's the period average that you have to meet.

And so then you could discharge say -- or then to get that period average, you could go as high as 70 degrees just as long as you got it down to 50 degrees. And that would be an increase in the background temperature.

MS. FRANZETTI: Okay.

MR. TWAIT: We didn't feel that the average should be set at the highest measured temperature.

MS. FRANZETTI: And really then the daily max temperature for January just doesn't -- it's not at all connected to the

period average value, correct?

MR. TWAIT: Say that again, please?

MS. FRANZETTI: Well the -- the daily maximum value, which is just the summer daily max I thought carried across the whole year?

MR. TWAIT: Yes.

MS. FRANZETTI: It doesn't have any relationship, it's not in any way based on that period average?

MR. TWAIT: No.

MS. FRANZETTI: Okay. Question number eight, were either the concepts of the use of the Route 83 Chicago Sanitary and Ship Canal sampling station or the use of the 75th percentile as the monthly average presented and discussed within the various UAA stakeholder group meetings?

MR. TWAIT: Only at the March 2007.

MS. FRANZETTI: That was the public meeting, right?

MR. TWAIT: That was the public meeting.

MS. FRANZETTI: Moving on to question nine, has the Illinois EPA reviewed the

ambient water temperatures for the past few years to determine what the ambient water temperatures typically are in comparison to the proposed thermal standards for those dischargers who are located downstream of the district's plants?

MS. WILLIAMS: Can you clarify what you mean by "what the ambient"?

MS. FRANZETTI: What's the temperature level that dischargers are going to be taking in from the stream that is basically dominated by the district's effluent? In other words, that's setting the thermal level in the stream for the downstream discharger?

You know, what do they start with so to speak as the temperature of the intake water versus what the proposed standard is? Is it already higher so that they're actually going to have to cool it before they add any thermal inputs to it because it's above the standards?

And I don't know the answer to that. I don't know if the Agency has looked at that.

MR. TWAIT: The station at Route 83 bridge is downstream of the Stickney facility, which is also downstream of the Fisk and Crawford facilities. It's approximately 10 miles downstream of the Stickney facility. Since we are proposing to use a 75th percentile as a period average, we believe there's some cushion there.

MS. FRANZETTI: I'm not sure I followed that answer. I'm sorry. Actually, my question isn't limited to the period average. Scott, can you try and explain to me what you just said? There's a sampling station ten miles -- about ten miles downstream from Stickney?

MR. TWAIT: Our background station that we used for our background is from the Route 83 bridge on the Chicago Sanitary and Ship Canal. That bridge or that sampling location is approximately ten miles downstream from Stickney facility.

MS. FRANZETTI: Okay. But that is that station wasn't what you for the most part used to set the period average, I

thought? See, I'm not sure what you're telling me.

MR. TWAIT: Yes. That's what we used to -- that was the ambient station that we had used in addition to the Stickney's -- or the district's effluent.

MS. FRANZETTI: But when the district's effluent was --

MR. TWAIT: Could you ask your question again, please?

HEARING OFFICER TIPSORD: If I may, I think what he's answering is -- let me try this. Mr. Twait, the Agency's background level, the place you took the sampling to develop the background level is downstream of the district's discharge by ten miles, correct?

MR. TWAIT: Correct.

HEARING OFFICER TIPSORD: So you do have downstream data that is not just the effluent of the district, correct?

MR. TWAIT: Correct.

MS. FRANZETTI: And that downstream data is showing compliance with your proposed

standards?

MR. TWAIT: At that location because we are using it as our background, yes.

MS. FRANZETTI: I see. I guess I thought for the most part you were using the district's thermal levels as the background unless --

MR. TWAIT: We are using the district's temperature -- we are using the least stringent of the district's temperature for this ambient station that's downstream of the district.

MS. FRANZETTI: So for the most part, the ambient station is cooler.

MR. TWAIT: In some periods of time during the winter, the -- let me look at the month specifically.

Of the periods of January, February, October 1st through 15, November and December the stream is cooler than the district's effluent.

MS. FRANZETTI: Okay. That's what I finally realized that's what you're saying.

MR. TWAIT: Yes.

MS. FRANZETTI: And that the other times it's not?

MR. TWAIT: Correct.

MS. FRANZETTI: And so for a downstream discharger, they could be using water that is already above the water quality standards?

MR. TWAIT: It depends on how far downstream that you're talking about and whether there are sources in between there.

MS. FRANZETTI: Fair enough.

MR. TWAIT: Because we've chosen the 75th percentile as the period average, -- that's creating some leeway in the proposal.

MS. FRANZETTI: I'm jumping down to ten. Question ten, when the ambient temperature of the waterway is at or near the thermal quality standard, does this indicate that the downstream dischargers will likely need to cool the water withdrawn from the waterway before discharging it back to the waterway after any industrial use?

MR. TWAIT: If the water were warmer than the water quality standard and they were

adding heat to it, they would need to provide cooling.

HEARING OFFICER TIPSORD: What if they're not adding heat?

MS. FRANZETTI: Yeah, what if they're not adding heat because I'm not sure any of us focused on that.

MR. TWAIT: I believe that there are some NPDS, national pollutant discharge elimination system rules about taking water from the same source as you're discharging to and as long as you're not increasing the parameter that you're concerned with, it doesn't put it back into your permit. So if --

MS. FRANZETTI: If the discharger can make that showing that they've added no heat to the water, you think there is provisions of the NPDS regulations that would give them basically a pass?

MR. TWAIT: I believe so.

MS. FRANZETTI: Would you agree -- actually, a follow-up. Would you agree that it's generally true in the Chicago Sanitary

and Ship Canal and down to the Upper Dresden Pool that the water will tend to warm as it moves downstream regardless of any heat input from dischargers?

MR. TWAIT: I don't know that I know the answer to that.

MR. SULSKI: I wouldn't agree with that. It would depend on the time of the year, you know, if it's summer all the sudden you get a warm spell, it's possible. But I wouldn't agree with that in general, no.

MS. FRANZETTI: Okay. But in summer that can happen?

MR. SULSKI: I wouldn't know either because it's a narrow system, there's a limited surface area for heat transfer.

MS. FRANZETTI: Just don't know?

MR. SULSKI: I just don't know.

MS. FRANZETTI: Okay. Question number 11, impervious surfaces, e.g., streets, parking lots, rooftops greatly increase the temperature of surface water runoff during summer periods. Is this contribution being considered as part of, quote, unquote,

background?

MS. WILLIAMS: Is there a citation or anything to that?

MS. FRANZETTI: No. But we'll back it up with expert testimony on that.

MR. SULSKI: I'd like to respond to it. This is the first I've ever heard of it or experienced it. Generally, it's the opposite, the rain cools those surfaces by the time it hits the waterway, it's cooling the waterway.

MS. FRANZETTI: Okay.

MR. SULSKI: The rain is cold.

MS. FRANZETTI: These surfaces are very hot. That the rain comes in contact with before it runs off into the river, just so you understand what the question is saying.

MR. SULSKI: I understand the question. In my experience -- we're talking about perhaps separate sewer areas. Even in separate sewer areas the rain cools the surfaces quite rapidly and ends up discharging at a cooler temperature in the

warmer periods of the year. In a combined sewer area, it hits the sewer so it really has no bearing.

MS. FRANZETTI: Okay. Moving on to D.

MR. TWAIT: I'd like to provide an answer, also. We have taken into account only to the effect that it would have an effect on the sampling station that we used.

So, I mean, if you're saying that it's warming up the water during the summer -- during the non-summer periods and it affects the Route 83 bridge that we've chosen as our sampling station, then it has been taken into account because we're using that station as a background.

MS. FRANZETTI: Okay. Moving on to D.

HEARING OFFICER TIPSORD: Let's call it a day. The next question is multi-point so let's go ahead and go off the record.

(Which were all the proceedings had in the above-entitled cause on this date.)

STATE OF ILLINOIS )
) SS.
COUNTY OF WILL )

I, Tamara Manganiello, RPR, do hereby certify that I reported in shorthand the proceedings held in the foregoing cause, and that the foregoing is a true, complete and correct transcript of the proceedings as appears from my stenographic notes so taken and transcribed under my personal direction.

_____
TAMARA MANGANIELLO, RPR
License No. 084-004560

SUBSCRIBED AND SWORN TO
before me this ____ day
of _____, A.D., 2008.

_____
Notary Public