ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
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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	)	R08-09 (Rulemaking-Water)

REPORT OF PROCEEDINGS held in the above-entitled cause before Hearing Officer Marie Tipsord, called by the Illinois Pollution Control Board, taken before Laura Mukahirn, CSR, a notary public within and for the County of Cook and State of Illinois, 9511 Harrison Street, Des Plaines, Illinois, on the 23rd day of April, 2008, commencing at the hour of 12:00 p.m.

A P P E A R A N C E S

MS. MARIE TIPSORD, Hearing Officer
MR. TANNER GIRARD, Acting Chairman
MR. ANAND RAO
MS. ANDREA S. MOORE
MR. NICHOLS MELAS
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MR. SCOTT TWAIT
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HEARING OFFICER TIPSORD: Good afternoon. My name is Marie Tipsord, and I've been appointed by the board to serve as hearing officer in this proceeding entitled Water Quality Standards and Effluent Limitations for the Chicago Area Waterway System and Lower Des Plaines River. The proposed amendments to 35 Ill. Admin. Code 301, 302, 303, and 304. The Docket No. is R08-9. To my right is Dr. Tanner Girard, the lead board member assigned to this manner. To his right is board member Thomas Johnson. To the far left is board member Nicholas J. Melas, to his immediate right is board member Andrea Moore, and to my immediate left is staff member Anand Rao of our technical unit. This is the third set of hearings to be held in this proceeding. Today's hearing is going to continue with questioning of the proponent, the Illinois Environmental Protection Agency. I will have the Agency introduce the witnesses and they will be sworn in. We have completed the prefiled questions from several groups, but those who

have prefiled questions left are Corn Products International, Metropolitan Water Reclamation District of Greater Chicago, Stepan Company, and Exxon Mobile Oil Corporation. And I understand that Stepan Company will be beginning today in just a minute. Anyone may ask follow-up question. You do not have to wait until your turn to ask questions. After we finished the prefiled questions, we will go to any additional questions that the participants have based on the testimony we have received so far. I do ask that you raise your hand, wait for me to acknowledge you. After I've acknowledged you, please state your name and whom you represent before you begin with your questions. As you can see, we have a returning court reporter, but please be sure to give your name and spellings and everything. Please speak one at a time. If you're speaking over each other, the court reporter will not be able to get your questions on the record. And, please note, any question asked by the 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. As we discussed off the record at the last hearing it is my intent to go to 7:00 o'clock tonight. We'll take a couple of breaks and proceed forward. Dr. Girard?

CHAIRMAN GIRARD: Good afternoon. On behalf of the Board, I welcome everyone to the ninth day of hearing to consider water quality standards and effluent limitation changes for the Chicago Area Waterway System and the lower Des Plaines River. We certainly appreciate all the time and effort that everyone is putting into this rulemaking. It will help us compile a very complete record. We look forward to the testimony and questions today. Thank you.

HEARING OFFICER TIPSORD: Miss Williams, would you like to introduce our witness and we'll have them sworn in.

MS. WILLIAMS: I'm Deborah Williams, assistant counsel with the Illinois EPA.

MR. TWAIT: Scott Twait with the

Illinois EPA.

MS. DIERS: Stephanie Diers, legal counsel with Illinois EPA.

MR. SULSKI: Rob Sulski with the Illinois EPA.

MR. ESSIG: Howard Essig with the Illinois EPA.

MS. WILHITE: Marsha Wilhite with the Illinois EPA.

MR. SMOGOR: Roy Smogor, Illinois IPA.

(Witnesses sworn.)

HEARING OFFICER TIPSORD: With that, did you have anything preliminary, or do you want go right into questions?

MS. WILLIAMS: It's up to you. I think we brought some documents that we'd be prepared to enter, but they may come up as we go along. Or if you want us so go through and enter a bunch of stuff into the record or however -- we just wanted to be prepared today.

HEARING OFFICER TIPSORD: Let's go ahead and enter any exhibits you have. If it's information that's been asked for

before.

MS. WILLIAMS: Yes.

HEARING OFFICER TIPSORD: Let's enter those as exhibits on the off chance on a break someone wants to take a look at them. And I have a brand new pen for this today.

MS. DIERS: The first set of documents we have is information we obtained from Chris Yoder. I was asked, I believe, at the January hearing. The first thing that we have to enter is a CD that Mr. Yoder put together for us. This CD contains comments from U.S. EPA on his draft temperature report, representative photos of the blackhorse-carpsucker and brown bullhead. There is a Des Plaines River study is the title of it when you go into the CD. And also another title on the CD was CAWS fish data, and that is an e-mail from Ed Hammer requesting the RAS list.

HEARING OFFICER TIPSORD: If there's no objection, we'll enter the CD as Exhibit No. 37. Seeing none, it is Exhibit 37.

And I would note that the Agency still has several copies here. So they brought plenty of copies, so don't be shy. And I appreciate that there are plenty of copies.

MS. DIERS: Next I believe it was at the March hearings Illinois EPA was asked to provide any wet weather data that we have. At this time we have two reports to provide. No. 03-20 of October 2003, and the second report is report No. 04-10 July of 2004.

HEARING OFFICER TIPSORD: The first one is Report No. 03-20, October '03. If there is no objection we'll mark that as Exhibit 38. Seeing none, it is Exhibit 38.

MS. WILLIAMS: Just to clarify for the record. Both of these reports are cited in Attachment B, the CAWS UA, but they weren't provided with the filing.

HEARING OFFICER TIPSORD: And the second one is report No. 04-10, July 2004. If there's no objection, we'll mark that as Exhibit 39. Seeing none, it is Exhibit 39. And, of course, this is with the caveat that

you may, of course, question these at a later date, et cetera. July '04 is 39 and October '03 is 38.

Let's go ahead and do some questioning, and at a break you can lay these all out. Like I say, at a break you can lay them out so that we can get it a little more speedily than we're doing. Because it's already 12:15 and we haven't started questioning yet.

So with that, let's begin our questioning. Mr. Dimond, would you introduce yourself.

MR. DIMOND: Thank you, Miss Tipsord. I'm Tom Dimond representing Stepan Company. Can everyone hear me across the room? We will pick up with our questioning on prefiled questions that have not been answered. In some cases I think we have some follow-up questions that are sort of left over from previous days. While many of the questions that we will be asking today come from sections of our prefiled questions that are designated for particular Illinois EPA

witnesses consistent with past practice, anybody on the panel should feel free to answer. And I will try to, as best I can, indicate where we are in my prefiled questions so that you can follow along.

I'm going to start with the prefiled questions under the heading for Mr. Sulski with item No. 6.

HEARING OFFICER TIPSORD: Which is on Page 2.

MR. DIMOND: That's probably right. But as I've told you before, mine is paginated differently now.

HEARING OFFICER TIPSORD: That's why I jumped in with the page number.

MR. DIMOND: So Question 6: How is it determined that waterway aeration, waterway flow augmentation, effluent cooling, and effluent disinfection were the recommended options for meeting the temperature, bacterial, and dissolved oxygen standards?

MS. WILLIAMS: I guess I want to object at this point. It's a compound question. I don't think the answer is the

same for each.

HEARING OFFICER TIPSORD: Then let him separate out each one and take each one.

MR. SULSKI: Respectfully, there were a number of options discussed at the stakeholder meetings, and of the options discussed, these were the ones, the ones that we -- that you see here were the ones that were pinpointed as potential options for overcoming the stressors identified. This was in the stakeholder process.

MR. DIMOND: Well, for example, as to dissolved oxygen, what other options were discussed in the stakeholder process?

MR. SULSKI: The general tone was that there wasn't enough air. We needed more air. How do we put air into the system. So there were several -- well, there may have been several technologies discussed. I don't remember the exact technologies. Later on MWRD looked at several technologies and offered some cost for various technologies.

MR. DIMOND: Was the Metropolitan Water Reclamation District the only party

that offered any options on DO?

MR. SULSKI: They were the only ones that I can --

MR. DIMOND: Other than effluent cooling through cooling towers, were there any other options discussed as to temperature?

MR. TWAIT: I believe cooling ponds, we talked about if there's space, or closed cycle cooling for cooled cycle facilities if it was feasible.

MR. DIMOND: Were there any --

MS. FRANZETTI: Mr. Dimond, I'm sorry to interrupt you, but can I ask a point of clarification.

HEARING OFFICER TIPSORD: Identify yourself.

MS. FRANZETTI: Susan Franzetti, Midwest Generation. Mr. Sulski, when you talk about the stakeholder meeting, are you talking about just the stakeholder meetings on the CAWS UAA, or are you -- Because there were two different stakeholder groups. Or are you combining all those stakeholders?

MR. SULSKI: I'm speaking from the CAWS stakeholder meetings.

MS. FRANZETTI: Thank you.

MR. DIMOND: Were there any options other than effluent disinfection that were considered for the bacterial standard?

MR. SULSKI: We discussed end of pipe CSO treatment. The contractor -- Well, the stakeholders recommended that that option be looked at. The District did look at that option and came up with some cost figures. When I say the District, I mean the Metropolitan Water Reclamation District.

MR. DIMOND: Did the Agency conduct any -- So I take it from what you say, what you've said, Mr. Sulski, that the agency didn't conduct any independent analysis of options to comply with the standards that it's proposed?

MR. SULSKI: Not that I'm aware of.

MR. DIMOND: So Subpart B of this question asks was any evaluation made into the feasibility of these options for facilities other than the MWRDGC facility.

MR. SULSKI: Not that I'm aware of.
HEARING OFFICER TIPSORD: Mr. Twait has something to add.
MR. TWAIT: Are you talking about temperature or are you still talking about bacteria?
MR. DIMOND: This question would apply to any of the three standards or the subject of the question.
MR. TWAIT: I believe Midwest Generation did provide some economic data.
MR. DIMOND: That's for complying with the temperature standard.
MR. TWAIT: Yes.
MR. DIMOND: So Subpart C of the question asks was any consideration given to what specific methods might be utilized by facilities other than MWRDGC facilities? And, if so, was any consideration given to possible consequences of those methods?
MR. TWAIT: Well, specifically for effluent disinfection, facilities other than MWRDGC would be the two Joliet facilities.
MR. DIMOND: When you say the two

Joliet facilities, which facilities do you mean?

MR. TWAIT: That would be the east facility and the west facility.

MR. DIMOND: And those are city of Joliet?

MR. TWAIT: Yes.

MR. DIMOND: Did the agency give any consideration to the potential that industry facilities would need to do disinfection?

MR. TWAIT: It was a consideration that there might be some facilities out there that have bacteria in their effluent and they would need to disinfect.

MR. DIMOND: What was the nature of that consideration?

MS. WILLIAMS: Can you repeat the question, Mr. Dimond.

MR. DIMOND: Well, Mr. Twait indicated that some consideration was given that industrial facilities would need to adopt disinfection. And I wanted to know what consideration the Agency gave -- what the nature of the Agency's consideration was of

that issue?

MR. TWAIT: Their consideration was that there's other industrial facilities throughout the state that have bacteria in their discharges if they have -- if part of their wastewater is treating facilities, bathroom facilities at their site, and they would have to chlorinate, and we know that the -- we know that it's economically feasible and technically reasonable based on other areas of the --

MR. SULSKI: We are aware of a number of smaller facilities along especially the Sanitary Ship Canal where it's bedrock and they don't have sanitary sewer service. They have their individual systems to deal with their domestic waste.

MR. DIMOND: Are they currently disinfecting?

MR. SULSKI: Some of them are.

MR. DIMOND: The ones that are disinfecting, are they required to under the current rules?

MR. SULSKI: I'm aware that they are

disinfecting. The reason why they're disinfecting, I'm not sure.

MR. DIMOND: Is it the Agency's view that all of these facilities would have to start disinfecting upon the -- if the proposal -- or if the regulatory proposal is adopted as proposed by the Agency?

MR. SULSKI: If it's an effluent standard, so they would be required to disinfect.

MR. DIMOND: Subpart D of the question I think has already been covered, but just to confirm, the Agency didn't receive any cost data for options of compliance of facilities other than the MWRDGC and the Midwest Gen, correct?

MR. SULSKI: Not that I'm aware of.

MR. TWAIT: To answer part of your previous question would those facilities be required to disinfect, it would be those facilities that are discharging into incidental contact recreational waters and noncontact recreation waters and not the nonrecreation waters.

MR. DIMOND: Okay. And, Mr. Twait, so that clarification applies to the CAWS which has some segments that have a recreational use proposed and other segments that do not, correct?

MR. TWAIT: Correct. And also to Branden Pool which does not have a recreational use proposed.

MR. DIMOND: But as to, for example, the Upper Dresden Island Pool, dischargers there would have to consider whether or not they need to disinfect?

MR. TWAIT: Yes.

MR. DIMOND: That would be -- Would that be a new requirement in comparison to the current regulations?

MR. TWAIT: Yes.

MR. DIMOND: Subpart E of Question 6 states, according to your testimony, paren, Page 18, closed paren, the practicalities of MWRDGC's compliance were considered. Why were similar analyses not performed for facilities along the Lower Des Plaines River?

MR. TWAIT: Because there were no

facilities on the Lower Des Plaines River that we felt were the quote, unquote, background sources of the waterway. We believe that MWRDGC's effluent was the majority of the waterway.

MR. DIMOND: But the Agency still concedes that the Lower Des Plaines River is still an effluent dominated waterway, correct?

MR. TWAIT: Yes.

MR. DIMOND: Following on in the questions, have any plans been made to do such analyses?

MR. SULSKI: Not beyond what we've done in these UAAs.

MR. DIMOND: I'll pass. The last one is covered.

A few follow-ups on issues that have been raised in the previous hearings.

The Agency has testified on numerous occasions that it is generally aware that cooling towers are used by industrial facilities throughout the state. Is Illinois EPA aware of any cooling towers that have

been installed at a facility downstream of an existing wastewater treatment plant?

MR. SULSKI: How far downstream?

MR. DIMOND: Prior to the discharge flowing into a waterway.

MR. SULSKI: Downstream you mean after the discharge?

MR. DIMOND: Mr. Sulski, I mean imagine that you have an industrial facility that has, you know, wastewater discharge that must go through treatment before discharged into a waterway. My question is, is the Agency aware of any facilities in the state that have installed cooling towers or other cooling equipment that is between the flow of water into the wastewater treatment system and it's discharged into a waterway?

MS. WILLIAMS: Now I'm confused. I thought I understood the original question, but now I'm confused.

MR. SULSKI: On the property? On the property?

MR. DIMOND: I don't -- My question doesn't depend on whether it's on the

property or not.

MR. SULSKI: Please repeat the question.

MR. TWAIT: Well, the Dresden Nuclear Facility put in cooling towers. Is that --

MR. DIMOND: I'm not familiar in detail with the Dresden nuclear facility. I don't know whether that's downstream of a wastewater treatment plant or not. Are you aware, Mr. Twait?

MR. TWAIT: When you say downstream of a wastewater treatment plant, are you talking about downstream of Stickney, in case this would be downstream of Stickney?

MR. DIMOND: No, no. I'm just referring to the flow of the wastewater within the plant. In other words, you know, water is used in an industrial plant. It eventually is done being used and it goes to a wastewater treatment facility. It then eventually is going to be discharged into some waterway.

MS. WILLIAMS: Are you talking about internal, an internal?

MR. DIMOND: So the question is, are you aware of an industrial facility installing a cooling tower post the wastewater treatment facility but prior to the discharge of that wastewater into a waterway?

MR. TWAIT: I'm not familiar enough with industrial facilities to say yes or no.

MR. ETTINGER: I'm still not -- I don't think the record is clear. Are you talking about a pretreater that discharges to a wastewater treatment facility?

MR. DIMOND: A pretreater, as you described it, Mr. Ettinger, is doing wastewater treatment even if it's not going to a publically-owned treatment works, it is being treated before it's being discharged.

MR. ETTINGER: I understand a pretreater is doing treatment, but he is discharging to a pipe that goes then to a POTW or some other sewage treatment plant. Is that what you're asking, I guess, is my question?

MR. DIMOND: It could be -- You could

have an industrial facility -- I mean my question does not depend upon whether the discharge from the industrial facility goes directly to a waterway under a NPDES permit or goes to a POTW through an industrial discharge permit.

I'm asking the Agency if they are aware of any facility in the state that has installed a cooling tower after industrial treatment facility.

MS. FRANZETTI: And Mr. Dimond, if I could just ask, is this in connection with a situation where, under these proposed thermal standards, for example, the effluent from a wastewater treatment plant at an industrial facility would need to be cooled before it's discharged? So is it any situation where you have treated effluent from a wastewater treatment process and/or plant that then needs to be cooled?

MR. DIMOND: I think that would be accurate.

MS. FRANZETTI: Okay.

MR. SULSKI: I'm not aware of any.

MR. TWAIT: I don't know either.

MR. DIMOND: Did Illinois EPA give any consideration to the potential that cooling towers might biofoul and, therefore, would require treatment even after the cooling towers?

MR. TWAIT: There are, as I understand it, antifouling chemicals that can be used.

MR. DIMOND: And did the Agency consider whether or not there would be further treatment that would be needed to remove the biofouling chemicals before the water could ultimately be discharged?

MR. TWAIT: Depending on the antibiofouling chemicals used, but it's possible that no additional treatment would be necessary. If you were using chlorine, then they would possibly have to be dechlorinated.

MR. DIMOND: Is Illinois EPA aware of any plans, other than electrical generating units, that have retrofitted cooling towers solely to meet thermal standards in the State of Illinois?

MR. TWAIT: I believe in most cases where cooling is going to be necessary to meet the general use standards they have been included with the construction of the plant. So I don't know of any that have been retrofitted.

MR. DIMOND: So I take it from your answer, though, that you are aware of facilities where it's been put in the initial design?

MR. TWAIT: Yes.

MR. DIMOND: Can you identify any of those for us today?

MR. TWAIT: There are ethanol plants that have been designed to cool their effluent before discharge. I couldn't give you names of facilities.

MR. DIMOND: Any other -- just any other generic type of facility do you recall, Mr. Twait?

MR. TWAIT: Offhand, I can't think of any, but I'm not all that familiar with the industrial dischargers in the respect of what they need to do to meet permit limits.

MR. DIMOND: All right. Moving on to my question -- or Stepan's Question No. 7. You say that temperature constraints could be overcome through additional cooling of the five Midwest Generation stations. Do you also expect that other dischargers may exceed the temperature limits and need to install additional cooling facilities?

MR. TWAIT: Quite possibly. It would depend upon whether they could meet the proposed water quality standards outside of an allowed mixing zone or allowed mixing.

MR. DIMOND: And in your prior testimony, haven't we largely established that mixing zones are largely going to be unavailable in the Upper Dresden Island Pool because of the impact of upstream facilities?

MR. TWAIT: At some point all discharges will need to be -- will need to meet the temperature standard outside of a mixing zone. A mixing zone can be a maximum of 26 acres. So at some point in time no one facility is going use the entire Dresden Island Pool.

MR. DIMOND: Question No. 8, will the current proposed bacteria standards resolve the bacteria violations associated with storm events and combined sewer overflows?

MR. SULSKI: Well, there isn't a bacteria water quality standard now in the secondary contact waterways, so the question --

MR. TWAIT: And there is not a bacteria standard proposed either at this time. And I will -- the bacteria standard will not solve any violations. It's going to take hardware to solve violations such as TARP to solve the CSO problems and disinfection of the effluent to solve the bacteria coming from municipal facilities.

MR. DIMOND: So under the Agency's proposal, at least as it's currently structured for bacteria, you're simply requiring a particular technology to be used, and there isn't going to be, at least for the time being, any numerical standard?

MR. TWAIT: We are not -- We are saying that disinfection has to take place.

We're not describing the technology itself, and we've set the use designations and there is no proposed bacteria standard. When U.S. EPA comes out with their revised proposal, the Agency will come back to the Board.

MR. DIMOND: Do you have any expectation on what the timing is for the EPA revised proposal?

MR. TWAIT: No, I don't. It's a number of years.

MR. DIMOND: How will the Agency determine whether or not an industrial facility needs to implement the bacteria proposal as it's current -- or the bacteria technical standard as it's currently proposed?

MR. TWAIT: It will depend upon how large of a municipal source is in that effluent and whether they can meet the effluent standard without disinfection.

MR. DIMOND: When you say a municipal source, I was talking about an industrial discharge.

MR. TWAIT: I understand that. A

domestic source.

MR. DIMOND: So, in other words, you look at the number of employees at a facility?

MR. TWAIT: The permit engineer will look at the flow statistics. If you're using ten gallons of water for your bathrooms and 1,000 gallons for your -- for the rest of the facility, when they're combined they'll make a determination of whether or not you've got a reasonable potential to exceed the effluent standard.

MR. DIMOND: Okay. Continuing on, my next question comes from those under the heading for Mr. Smogor --

MR. FORTE: Excuse me, Mr. Dimond. Can I ask one follow-up question here to Mr. Twait --

HEARING OFFICER TIPSORD: Mr. Forte, you need to identify yourself for the record again.

MR. FORTE: Thank you. Jeffrey Forte on behalf of Citgo. Going to this testimony you just gave on the disinfection and what

happens after disinfection. In an effluent-dominated stream, has the Agency considered the effects on downstream users of that water of testing that water and going through some of the water quality standards that you propose such as the Subpart F? In other words, if somebody is downstream of a wastewater discharge which is being chlorinated, and they're taking that water in and using it, are they going to see some of the residual effects of that chlorination or whatever the disinfection is? Or has the Agency considered that question, I guess, maybe is the better question.

MR. TWAIT: Well, I guess is that specific to chlorine residual or to the bacteria itself?

MR. FORTE: I think I'm looking more at the purported treatment and the residual effects of disinfection as opposed to a bacteria which is not professing to know a lot about.

MR. TWAIT: When you say the residual effects, do you mean a chemical that might

still be in the water?

MR. FORTE: Yes, yes.

MR. TWAIT: There is a provision in the water quality standards for background concentrations. It's 304 103, and it will -- It basically says if you're taking in water, and it has, I'm just going to say total suspended solids, and you're not increasing total suspended solids, your loading can be the same with your influent.

MR. FORTE: But if you are adding something, and I think you talked a little something about it, having incidental sanitary component for industrial discharge, wouldn't you fall out of that safe harbor that you just cited?

MR. TWAIT: You may or may not. There is a clause in here of incidental addition of traces of materials. It would depend on the size of your discharge.

MR. FORTE: Well, it would also depend upon if you're an effluent-dominated waterway, if the waterway was 70 percent, for example, municipal wastewater, how big an

effect that was going to have, right?

MR. TWAIT: Possibly.

MR. FORTE: Thank you. Thank you, Mr. Dimond.

MR. DIMOND: Continuing on with, and I'm now at Question No. 3 under the heading for Mr. Smogor. And I'm going to modify -- the basic question I'm going to keep, but I'm going to modify it slightly. Considering your dissolved oxygen standards, did you conduct any studies to determine whether, even if the Upper Dresden Island Pool met your proposed standards, it would be habitable to the range of fish species that were used to develop the water quality standards for the Upper Dresden Island Pool?

MR. SMOGOR: When you say the range of fish species used to develop the water quality standards for Upper Dresden Island Pool, are you referring to the representative aquatic species that were used just for the temperature standard development?

MR. DIMOND: Correct. That is what I'm referring to.

MR. SMOGOR: Those representative aquatic species lists that were used for the development of the proposed temperature criteria were not directly used as part of the development of the proposed dissolved oxygen standards.

MR. DIMOND: Then what was the basis of the dissolved oxygen standards that were adopted?

MR. SMOGOR: The basis was from the information in the Lower Des Plaines use attainability analysis, Attachment A, I believe, and other supporting information that's on the record, we determined and proposed an aquatic life use for Upper Dresden Island Pool that, at a minimum level, if that's attained, that is equal to minimum attainment of the Clean Water Act Aquatic Life Goal. And, therefore, the standards that we developed in a previous rulemaking for general use waters for dissolved oxygen we thought were directly applicable, and we felt justified proposing those standards, those same dissolved oxygen standards for

Upper Dresden Island Pool.

MR. DIMOND: So if I understand your answer, Mr. Smogor, essentially what you're saying is that even though the Agency has not designated the Upper Dresden Island Pool as a general use water, you've decided that you're going to apply the general use dissolved oxygen standard.

MR. SMOGOR: We decided because minimal attainment of general use as it's defined now in terms of aquatic life is the same biological condition, the same level of biological condition as minimal attainment of the aquatic life use that we've proposed for Upper Dresden Island Pool; therefore, the dissolved oxygen standards are the same for either set of waters because you're setting the standards to minimally attain the aquatic life goal.

MR. DIMOND: Well, are you saying -- Is the implication of what you just said that the Agency's position is that the general use standard, quote, minimally attained the Clean Water Act fishable, swimmable goals?

MR. SMOGOR: We believe that when we attain the general use, when we attain aquatic life use related to our general use designations, minimal attainment of that aquatic life use goal is equivalent to minimal attainment of the Clean Water Act Aquatic Life Goal.

MR. DIMOND: So is it the -- I guess I'm going to ask my question again, because I thought it was a pretty simple question and I'm looking for a pretty simple answer. Is it the Agency's position that the general use standard that applies throughout most of the state minimally attains the Clean Water Act goals?

MR. SMOGOR: We believe that when you attain the aquatic life portion of general use, that represents attainment of the Clean Water Act Interim Aquatic Life Goal.

MR. DIMOND: I can't decide whether I want to ask this question or not, but curiosity has got the better of me.

If that's the Agency's position, couldn't you have -- why didn't you just --

couldn't you have made this whole regulatory proposal a lot simpler just by saying that it's the agency's position that the Upper Dresden Island Pool should be general use?

MR. SMOGOR: I can't make that call. I'm not the person who dictates policy. So I guess I don't know how to answer that. I think in general -- I shouldn't use in general. General use is such a broad umbrella use that there's been talk and there's been efforts towards defining that in more -- I guess in more explicit ways and creating different levels of aquatic life use, of biological potential. So I think general use has the potential of being split into different aquatic life uses with represent -- each representing a different biological potential. So it doesn't make a lot of sense, at least to me, to take a category that's already been created and has been recognized for some shortcomings and kind of go backwards for the Upper Des Plaines Island Pool and assigning that use.

The other issue is we believe

that the level of human -- irreversible human impact in Upper Dresden Island Pool does differ than what you might call irreversible impact in waters that are currently recognized as general use.

By saying that you're setting a standard to minimally attain the Upper Dresden Island Pool aquatic life use and to minimally attain the general use, that level of biological condition may be the same, but that's not the same as saying that general use waters have the same biological potential as does Upper Dresden Island Pool. We believe that the Upper Dresden Island Pool has a lower biological potential than general use waters.

MR. DIMOND: And so even though it has a lower biological potential, you're going to apply the same dissolved oxygen standards, or at least that's your proposal?

MR. SMOGOR: Yes. Because there's such a range of biological potential represented in that umbrella, blanket use called general use. There may be, to

clarify, there may be some waters that are currently designated as general use which, upon further analysis, would be -- their biological potential could be set as low as the biological potential of Upper Dresden Island Pool. But we don't know that yet. We started kind of addressing this whole issue with the Upper Dresden Island Pool in the Chicago Area Waterway System.

MR. SULSKI: That's the short answer because -- if I might add --

MR. SMOGOR: It's pretty long, actually.

MR. SULSKI: Because you said why didn't we just go ahead and classify a general use? Well, we can't. We're revisiting a waterway. We have to look at all the most recent criteria that have come about since our original general use designation. We had to go through that process. So in some cases -- well, in a number of cases, things have changed, criteria, levels have changed. We couldn't get away from that. We had to do it. So you

can't just -- We wouldn't have been able to just throw a general use in this waterway.

HEARING OFFICER TIPSORD: Mr. Ettinger has a follow-up.

MR. ETTINGER: Right now under the Illinois General Use Classification System our highest quality waters, West Creek (ph.), the middle four, have the same classification as, say, the Wood River and the Lower Kaskaskia; is that correct?

MR. SMOGOR: Correct.

MR. ETTINGER: So, as I understand your testimony, you were reluctant to use the general use category that we now have that's a very big box where we had more specific information for the Lower Des Plaines; is that correct?

MR. SMOGOR: That's a reasonable way of putting it, yes.

HEARING OFFICER TIPSORD: And you need to identify yourself for the record.

MR. ETTINGER: I'm Albert Ettinger. I work for the Environmental Law and Policy Center, and I represent some of the

environmental groups here.

MR. DIMOND: Then, Mr. Smogor, sort of circling back, you've indicated that it's your view that the Upper Dresden Island Pool has a lower biological potential?

MR. SMOGOR: Than --

MR. DIMOND: Than general use waters.

MR. SMOGOR: Than at least some general use waters, yes.

MR. DIMOND: Did you -- Has the Agency defined that lower biological potential in terms of specific fish species or other aquatic fauna species.

MR. SMOGOR: No. We didn't get specific, and I think maybe this, again, what we talked about in prior testimony, the definition that we proposed of the aquatic life use that we proposed for Upper Dresden Island Pool uses some general language to address the type of aquatic community that's expected in the Upper Dresden Island Pool. That would be the Upper Dresden Island Pool's potential aquatic community. But we didn't get down to consideration of specific species

by species comparisons.

MR. DIMOND: Since you did not get down to specific species by species analysis, I take it that the Agency really can't have any scientific basis to say that you need the dissolved oxygen standards that you've proposed in order to protect this biological use that you've got loosely defined?

MR. SMOGOR: Are you asking if we think we have a scientific basis or --

MR. DIMOND: Yes.

MR. SMOGOR: Well, we believe we do with the use attainability analysis and the other information that's been presented on the record. We believe we have a scientific basis. We've looked at the information that's available from Upper Dresden Island Pool, and we believe that we've proposed a use that's consistent with the biological potential of Upper Dresden Island Pool based on that information.

MR. DIMOND: But you haven't done any studies to determine whether or not your dissolved oxygen standard will allow that

biological -- You haven't done any studies to determine whether or not dissolved -- using your dissolved oxygen standards will make any difference in the biological community or not, have you?

MR. SMOGOR: Well, I guess I would address that we're not necessarily setting standards to make a difference. We're setting standards that we believe are at levels that are protective of the use that we propose. So we believe that the dissolved oxygen standards that we did propose for Upper Dresden Island Pool are the dissolved oxygen conditions that aquatic life need in Dresden Island Pool in order to be able to attain that biological potential that we've proposed for Upper Dresden Island Pool. And we believe that that information is well-supported by the technical -- or by the National Criteria Document for dissolved oxygen which is the 1986 U.S. EPA document. I believe it's Attachment X.

HEARING OFFICER TIPSORD: The Ambient Water Quality Criteria For Dissolved Oxygen?

MR. SMOGOR: Yes.
HEARING OFFICER TIPSORD: That's Attachment X.
MR. DIMOND: So Attachment X that you've just referred to, is that also what the Agency used to justify the dissolved oxygen standard for general use waters?
MR. SMOGOR: Yes. That was a primary source of information to justify.
MR. DIMOND: Question No. 4.
MR. POLLS: Can I ask a follow-up.
THE COURT: Give us your name.
MR. POLLS: Irwin Polls. I'm with Ecological Monitoring and Assessment on behalf of the Water Reclamation District. I'd like to ask you a question regarding what factors did you identify for saying that you have a lower biological potential in the Upper Des Plaines? You said that there's a lower biological potential compared to general use? What do you identify as these factors that caused this lower biological potential?
MS. WILLIAMS: You mean the Upper

Dresden Island?

MR. POLLS: Yes, Upper Dresden Island.

MR. SMOGOR: To clarify, we believe that Upper Dresden Island Pool has lower biological potential than at least some general use waters in Illinois. I'm not saying it has lower biological potentials than all general use waters in Illinois, but because of the broad range of actual levels of potential that are represented by general use, I would have to say it has lower potential than Upper Dresden Island Pool than at least some general use waters. That is based on a lot of the information that's been presented on the record and use attainability analysis of the Lower Des Plaines and subsequent studies by Midwest Biodiversity Institute and CABB were also studies on the record. And it's predominantly based on habitat conditions. We believe that the physical habitat conditions in Upper Dresden Island Pool will support a level of biological conditions that can minimally attain the clean water aquatic life goal.

MR. POLLS: When you say habitat, are you talking about the period, are you talking the stream are we talking about both?

MR. SMOGOR: We're talking about both, physical habitat conditions.

MR. POLLS: Thank you.

MR. DIMOND: I believe Items 4 and 5 under Mr. Smogor's testimony have been covered either today or otherwise. So I am moving on to Question No. 1 under the heading for Mr. Twait.

On Page 3 of your testimony, you state that the Agency is also proposing water quality standards for sulfate and chloride that are based on the proposal currently before the Board in R07-9. Subpart A asks why are water quality standards being proposed based on the proposed general use water quality standards for waters which have been determined to be unable to meet the general use water quality standards?

MS. WILLIAMS: Can I just clarify, Mr. Dimond? I'm assuming, although it doesn't say it in your question, that you're,

again, referring specifically to the sulfate and chloride water quality standards?

MR. DIMOND: Yes.

MS. WILLIAMS: Thank you.

MR. TWAIT: Our proposal of chlorides and sulfate replaces the existing total dissolved solids water quality standard. It's a secondary contact standard. We feel that our proposed role better represents the protection of aquatic life. It's based on toxicity.

MR. DIMOND: This is toxicity of chlorides and sulfate.

MR. TWAIT: We have a water quality standard for total dissolved solids that we don't think is based on toxicity, and the portions of total dissolved solids that are toxic are for Illinois, anyway, are chloride and sulfate. So we've proposed a chloride and sulfate standard instead of the total dissolved solids.

MR. DIMOND: Are there any documents in the record similar to what Mr. Smogor referenced for DO that led you to these

standards?

MR. TWAIT: I believe we just referenced the rulemaking before the Board, the other -- the other rulemaking before the board. Do you know what that is?

HEARING OFFICER TIPSORD: R07-9.

MR. TWAIT: Thank you.

MR. DIMOND: Has that rulemaking been concluded?

MS. WILLIAMS: No.

HEARING OFFICER TIPSORD: If I may, for the record, it is on the Board's pending decision agenda for second notice.

MR. DIMOND: So the Agency just basically said, well, we think whatever we've done in RO7-9 ought to apply -- ought to apply for the waters in this proceeding as well?

MR. TWAIT: We did make that conclusion. We are currently looking at that decision to see if we can -- to see if our proposal needs to be adjusted.

MR. DIMOND: Adjusted in what way?

MR. TWAIT: We are, for sulfates

specifically, we did not have a proposal on what the sulfate standard when chloride is above 500. We are looking at that. Another portion, we are taking a second look at the chloride standard that we've proposed and determining which species were the most sensitive to chlorides and making determination if they're in these particular water bodies.

HEARING OFFICER TIPSORD: If I may, for a point of clarification, you're talking about looking at these in CAWS and Lower Des Plaines?

MR. TWAIT: Yes.

MS. WILLIAMS: And I'd just like to clarify. I'm not sure I completely thought the answer was accurate in the sense that you asked if we just took the standards from that rulemaking and put them in there, and there are changes in the way we're proposing here. For example, that proposal provides a standard to protect for livestock watering which we don't believe is a protective use here. That's the only example I can think of

offhand, but there may be others that are described in the statement of reasons where we looked at whether everything in there was needed here or not.

MR. DIMOND: Were there any other ways in which differences in the uses of the CAWS and the Lower Des Plaines River as compared to general use waters were factored into the sulfate and chloride standards that were proposed?

MS. WILLIAMS: I know that we looked at whether the -- what the hardness values were and whether there were different typical hardness values here than other areas of the state.

MR. TWAIT: Yes. And we took out at least one of the equations, possibly two. I don't have which -- that with me. And those are for instances where the hardness was below 100 and chlorides were below -- below five. We took those out of the proposal.

MR. DIMOND: Question No. 2 --

HEARING OFFICER TIPSORD: Mr. Forte?

MR. FORTE: Just a couple of

follow-ups. And, Mr. Twait, when you were talking about -- you were looking at what species are present. I believe the Agency's testimony is that there are three UAA factors that the uses, the use attainability analysis concludes are not met at least by certain rise water, and, of course, I'm talking about the Chicago Sanitary and Ship Canal. To what extent is the Agency looking at those unattainability factors or use unattainability factors in looking at the chloride, proposed chloride water quality standard.

MR. TWAIT: I don't -- I think we'd like to address the issue through meeting something that's protective before we start using the factors for the UAA.

MR. FORTE: So your approach is to look at what's protected and then consider what the uses really are? Did I hear that right?

MR. TWAIT: The intent is to provide a water quality standard that is protected before we used one of the six UAA methods.

MR. FORTE: Thank you.

MR. DIMOND: Going on to Question No. 2. On Pages 3 to 4 of Mr. Twait's testimony, he states that the pH is being updated to conform to the general use standard of 6.5 to 9.0. You further state, quote, it is expected that this standard will be attained at most times and at most areas of the CAWS and Lower Des Plaines River, though data from the Metropolitan Water Reclamation District of Greater Chicago indicates there may be occasional pH violations below 6.5. And, Subpart A, the question is are these violations expected due to natural variations in river slash environmental conditions.

MR. TWAIT: I'm not sure what causes the pH to go below 6.5.

MR. DIMOND: Is it correct that the Agency does not expect that this pH standard is consistently attainable as that term is used in 40 CFR 131 22?

MS. WILLIAMS: I'm assuming this is a legal question about the meaning of that

provision, and I took a look at that provision in the purpose section. And when it -- when that term -- I would agree it may be confusingly worded a little bit, but it seems clear to me that when that provision uses the term attainable, it's talking about uses, not water quality standards. So I guess that makes the answer yes.

MR. DIMOND: Subpart C, is it appropriate to designate uses which require establishment of standards where it is not expected that consistent compliance is possible?

MR. TWAIT: Yes. It's to protect the aquatic organisms.

MR. DIMOND: That even where the Agency knows based on existing data that consistent compliance is not possible?

MR. ESSIG: Well, yes. I believe we do in that when the streams are assessed and pH comes up as a cause of impairment, then that would be addressed through the TMGL process.

MR. DIMOND: I'm sorry. I couldn't

understand all of your answer, Mr. Essig. You said when it comes up --

MR. ESSIG: If we assess the water bodies not attaining its designated use due to factors such as pH, it would then be subject to a TMGL. And that parameter of pH would be addressed through that procedure.

MR. SAFLEY: Mr. Dimond, would you mind if I asked a follow-up question? Thank you.

HEARING OFFICER TIPSORD: Identify yourself.

MR. SAFLEY: Tom Safley. Mr. Twait, am I correct that you stated the Agency is not aware of the reasons that pH is occasionally below 6.5 in these water bodies?

MR. TWAIT: I don't know if occasional violations are due to natural variations in the river or environmental conditions. So yes.

MR. SAFLEY: In that case, how can the agency consider the six UAA factors with regard to pH to determine whether or not there are -- any of those six UAA factors are

triggered based on the potential of irreversible sources or causes of those pH violations?

MR. SULSKI: We looked at all the data available. When we had problems meeting modern criteria, which we had to rely on, we revisited all the data and we found no data to give us a case that it was an effluent or it was a natural situation, none of that information came forward. So we really had no reason to invoke a factor.

MR. SAFLEY: Do you have any reason not to invoke a factor, however, or you just don't know whether a factor is applicable?

MR. SULSKI: If we're invoking a factor, we better be able to explain it through what the text is in that factor.

MR. SAFLEY: So would it be accurate that at least for this parameter, if the Agency doesn't know the cause, it simply is unable to perform an analysis of whether any factors apply of the six UAA factors?

MR. SULSKI: We don't invoke a factor because of a criteria for a standard. We

invoke a factor because we don't believe a use can be met. Then we follow afterwards and we set criteria to protect that use. If, for example, during the analysis -- use analysis somebody came forward and said, well, you know, there's 100 million geese that always sit in Lake Calumet and the bacteria level is high and we can't get rid of the geese, that's a situation that would cause us to invoke a factor. But in the case of a single parameter with no idea where it's -- you know, it's not in our, I guess our right, to invoke a factor.

MR. SAFLEY: But in this case, the water quality standard that's being proposed for pH the Agency has concluded that that standard is necessary to meet the use that it's proposing; is that correct?

MR. SULSKI: Correct.

MR. SAFLEY: Okay.

MR. TWAIT: One clarification I'd like to make, the National Criteria Document says the pH should be between -- as long as the pH is between 6.5 and 9, the fish will be fine.

If the pH is between 6.0 and 6.5, they will be okay as long as the, I believe it's carbon dioxide, soluble carbon dioxide is less than 100. I believe the District has some questions on that. So there are some instances in time between 6 and 6.5 that this could be adjusted as long as the carbon dioxide is less than 100.

MR. SAFLEY: When you say this could be adjusted, you mean that it would be defensible to have a pH level of between 6 and 6.5 based on the national criteria?

MR. TWAIT: Yes.

MR. SAFLEY: But you're not proposing in this rule to have that range of pH?

MR. TWAIT: Our original proposal does not have that in it. I, reading the District's questions, I think they're going to question that also.

MR. SAFLEY: Those are the end of my questions. I'll wait. Thank you.

MR. DIMOND: Okay. Our Question No. 3 has been covered, so I'm going to move on to No. 4. With regard to ammonia, Page 4 of

your testimony states that the seasonal ammonia standard protecting the early life stage period is not applicable to those waters not being designated for the protection of early life stages. The waters that do not protect for early life stages are the CAWS and the Branden Pool Aquatic Life Use B Waters. Subpart A: Do waters of the Upper Dresden Island Pool currently satisfy the proposed ammonia standard for early life stages?

MR. TWAIT: The UAA Attachment A addressed the proposed -- The UAA addressed whether or not these waters could meet the 1999 criteria document for U.S. EPA. And they used some Monte Carlo modeling and determined that the chronic -- that the water quality standard for ammonia would be met. The Agency has not looked at this directly to see whether or not it meets the water quality standard, but based on the analysis and the UAA, we believe it does.

MR. DIMOND: Well, if they used a Monte Carlo analysis, that's a probability

analysis that looks at different probabilities. So does that mean that there are some times when the Upper Dresden Island Pool has ammonia levels that are above the standard that you've proposed?

MR. TWAIT: The Monte Carlo analysis that they did, the way I understand the Monte Carlo analysis is that they take the existing data and model -- then they -- they take the existing data and come up with means and standard deviations, and then they turn around and run that model, and it provides a theoretical -- it provides temperature, pH, and ammonia levels, and then it will run that over many variations using those statistics and determine whether or not you would meet the water quality standard based on the measurements that they see in the stream. And when you assess it directly, the water quality standard, you don't have a sample every day. So in some respects it's difficult to say whether you would meet a monthly average if you don't have a lot of data in that particular month. That's why

they use the Monte Carlo analysis.

MR. DIMOND: Subpart B, in establishing the ammonia standard for the Upper Dresden Island Pool, what factors support a belief that the ammonia levels will decline downstream of the Brandon Locks?

MR. TWAIT: I'm not quite sure where we used the belief that ammonia levels will decline downstream of Brandon Locks?

MR. DIMOND: Well, the Brandon Locks is going to have a higher ammonia standard, isn't it?

MR. TWAIT: Yeah, based on the protected use. Basically in answering A, we believe that downstream of Brandon Locks it will meet the proposed standard.

MR. DIMOND: And that's based on this Monte Carlo analysis?

MR. TWAIT: Yes.

MR. DIMOND: I think subpart C has been covered. And I think I'll pass on subpart D.

Question No. 5.

HEARING OFFICER TIPSORD: Mr. Dimond,

let's -- We've been at it for about an hour and a half now. Let's take a ten-minute break.

(Short break taken.)

HEARING OFFICER TIPSORD: Mr. Dimond?

MR. DIMOND: I think we had finished up Question 4 under the heading for Mr. Twait. Questions 5 through 11 have been adequately addressed already in the hearing, so I'm moving on to Question No. 12 under the heading for Mr. Twait. On Page 12 of your testimony, you state, the Des Plaines River between Branden Road Lock and Dam and the I-55 bridge has incrementally more diverse aquatic life and higher quality habitat than the rest of the CAWS and the Lower Des Plaines River. For this reason, the Agency determined it was appropriate to use the option of the 27 RAS list, paren, modified use, closed paren, to determine the summer daily maximum and period average for the Upper Dresden Island Pool waters.

Subpart A question: What field studies, if any, were undertaken to

confirm that the incremental changes between the Brandon Road Lock and Dam would support the modified use of RAS list of species?

MR. TWAIT: I believe that would be the QHEI and the IBI data.

MR. DIMOND: That's all the data that the Agency relied upon?

MR. SMOGOR: We did consult species lists, species presence absence data from -- well, there was -- these, I think, are on the record. There's the 1994 or '96 --

MR. ESSIG: There's a report by Illinois Department of Natural Resources listing fish in the Lower Des Plaines --

HEARING OFFICER TIPSORD: Mr. Essig, you'll have to speak up.

MR. ESSIG: 1978 through 1990. There was also UAA reports. I believe there were a few reports from EA that we looked at.

HEARING OFFICER TIPSORD: And EA is?

MR. SULSKI: Environmental Assessment. Midwest Gen or Com Ed at the time.

HEARING OFFICER TIPSORD: Thank you.

MS. FRANZETTI: EA is the name of the

outside consultant.

HEARING OFFICER TIPSORD: Thank you.

MR. DIMOND: So I take it from that answer that there really wasn't any, and this relates to the question in Subpart B, there wasn't really any species specific study that was done to confirm that the incremental changes below the Brandon Road Lock and Dam would support the modified use species?

MR. SMOGOR: I guess how I was -- it seems like you're asking if that 27 -- if that list of representative aquatic life species is appropriate or not for that stretch of river. If that's what you're getting at, we believe that that list was appropriate. And, if I'm not mistaken, in terms of the temperature model, the criteria that come out of the temperature model are really driven by the most sensitive, temperature sensitive species on that list, correct?

MR. TWAIT: Yes.

MR. SMOGOR: So I think it's reasonable that the most sensitive

temperature sensitive organisms on that list of 27 can be expected to occur in Upper Dresden Island Pool? Is that correct, Scott? Is that reasonable?

MR. TWAIT: Yes.

MR. DIMOND: So I know in prior hearings, I think we've established that at least for many parameters in the temperature area, it's the white sucker that ends up being the most sensitive species, right?

MR. TWAIT: Correct.

MR. DIMOND: So has the Agency conducted any study to indicate that the white sucker would want the habitat in the Upper Dresden Island Pool?

MS. WILLIAMS: One of the things -- Maybe this is the logical point, Madam Hearing Officer. One of the things I believe we were asked last time was what data we looked at related to white sucker, and we -- and Howard had listed some things, and we have brought those today if you'd like to enter those as exhibits.

HEARING OFFICER TIPSORD: Let's get

those in the record.

MS. DIERS: We have -- There's -- There are four tables, Madam Hearing Officer, and a report. Do you want to mark each one individually?

HEARING OFFICER TIPSORD: Yes.

MS. DIERS: The first table that we have on the white sucker data is Illinois Department of Natural Resources DuPage River Basin Survey Station.

HEARING OFFICER TIPSORD: We'll mark Illinois Department of Natural Resources DuPage River Survey Station as Exhibit 40, if there is no objection. Seeing none, it's Exhibit 40.

MS. DIERS: The next one is Illinois Department of Natural Resources Fish Community Sampling Results and Index of Biotic Integrity IBI 2003 Des Plaines Basin Survey Main Stem Stations.

HEARING OFFICER TIPSORD: And we'll mark that document as Exhibit No. 41 if there is no objection. Seeing none, it's Exhibit No. 41.

MS. DIERS: The next one is Illinois Department of Natural Resources Fish Community Sampling Results, an Index of Biotic Integrity, IBI 2003 Des Plaines Basin Survey Tributary Stations Include Data From 2002 Surveys.

HEARING OFFICER TIPSORD: And if there is no objection, we will mark that as Exhibit 42, if there's no objection. Seeing none, it is Exhibit 42.

MS. DIERS: The next one is Illinois Department of Natural Resources Fisheries Division, Kankakee River, Fish Population Survey, the Results July 2005.

HEARING OFFICER TIPSORD: And if there's no objection, we'll mark that as Exhibit 43. Seeing none, it's Exhibit 43.

MS. DIERS: Do you have the report? And the last document for the white sucker is the Des Plaines River Monitoring the Fish Resources of the Urban River, 1978 through 1999 -- 1990, sorry.

HEARING OFFICER TIPSORD: If there's no objection, this will be marked as

Exhibit 44. Seeing none, it's Exhibit 44.

AUDIENCE MEMBER: Would you repeat the title of 44, please.

MS. DIERS: It's the Des Plaines River Monitoring the Fish Resources of an Urban River 1978 to 1990.

HEARING OFFICER TIPSORD: By David M. Day, and it's dated 12 August 1991.

MR. DIMOND: Are we ready to proceed?

HEARING OFFICER TIPSORD: I think so. We're ready to proceed?

MS. DIERS: Yes.

HEARING OFFICER TIPSORD: Go ahead, Mr. Dimond.

MR. DIMOND: Well, thank you, Madam Hearing Officer. For obvious reasons, we will reserve our right to ask questions on the exhibits that have just been distributed, or I will leave it to my esteemed colleagues.

HEARING OFFICER TIPSORD: So noted.

MR. DIMOND: At this point I think I'm ready to move on to Question No. 17. Has the Agency considered whether aquatic species in the Upper Dresden Island Pool have the

ability to engage in adaptive behaviors in the face of temperature excursions in establishing the proposed thermal standards?

MR. SMOGOR: Yes. It's recognized that organisms have -- some organisms have the ability to avoid certain situations.

MR. DIMOND: Did the Agency take that into account in any way in coming up with the thermal water quality standards?

MR. SMOGOR: I think it recognized that fish have the ability to avoid particular temperatures. But when you're setting a standard for something like water or temperature or other water quality parameters, the intent of the standard isn't to set it at the point where animals avoid it. It's to set it at the point where animals can actually sustain themselves and thrive under those conditions. If a fish is out there avoiding certain temperature conditions, it comes at a cost to the animal. Because the animal is spending that extra energy to avoid, it's prevented from occupying a certain space that may provide

certain needs for that organism; or because of its actions to avoid, it's making itself more vulnerable to predation or whatever reasons. There is a cost to that organism to that avoidance. So we're not necessarily wanting to impart those costs on an organism when we set a water quality standard. We want to set a water quality standard that, for lack of better terms, the organism is comfortable with.

MR. DIMOND: I mean all the little white sucker has to do is swim to a different area of the stream, isn't that it? I mean he's going to be swimming anyway. So how much more energy is he expending?

MR. SMOGOR: Well, if he wants to get to a particular location that has -- that he or she believes meets his or her needs, its needs, and it runs into potentially harmful or undesirable temperatures, it's going to avoid -- It's going to be redirected from its purpose. And that is a cost in -- an overall cost. If it's doing that enough times, it's not doing the things that may be necessary

for it to thrive. I guess the way I see it with water quality standards, if we're trying to set standards at levels that animals avoid, I'm not sure there would ever be a high limit. Because you could just set it and then always say, well, the creditor can avoid it. The animal can swim away from it. So let's allow it. To me that's not the idea of water quality standards.

MR. ETTINGER: I just wanted to ask. We're setting a standard for the area outside the mixing zone.

MR. SMOGOR: Yes. Right.

MR. DIMOND: I'm going to move on to Item No. 16. I'm sorry. Item No. 18. On Page 16 of, I believe this is Mr. Twait's testimony, you refer to the study commissioned by the MWRDGC and you also referred to ongoing EPA studies and the deferral of adopting any numeric bacterial water quality standard until sound information is available. And I'm going to modify my question a little bit here.

In that testimony, you also

indicate that the technical bacterial stand -- technical bacterial disinfection standard is being imposed as a precautionary measure. What's the basis for adopting a precautionary measure? Is that consistent with the Illinois Environmental Protection Act?

MR. ETTINGER: Is this -- I guess I have a question. Is this a legal question directed as to the interpretation of the Illinois Environmental Protection Act?

MR. DIMOND: It's a question about Mr. Twait's testimony where he says that he's using a -- that the Agency is proposing this as a precautionary measure.

MR. ETTINGER: So are you asking if they did that?

MR. DIMOND: The witness hasn't indicated any difficulty with my question, so I'd like it to stand.

MS. WILLIAMS: I have a problem, I guess, with your question. First you ask what the basis, and then you said is that consistent with the -- so maybe we need to

ask first what's the basis, okay?

MR. TWAIT: The basis is we set a use and we are protecting the use with the effluent standard rather than a water quality standard that we don't believe in.

MS. WILLIAMS: I think I testified in detail last time about our understanding of the legal authority under the board to adopt effluent standards under Section 13 of the Act, if that answers the second part.

MR. DIMOND: I'm sorry. Could you read back what Ms. Williams just said?

(Record read back.)

MR. DIMOND: Well, let me ask this question: Mr. Twait, in your testimony where you said as a -- this is on Page 16. As a precautionary measure to protect our recreating public, however, we are proposing to require wastewater treatment facilities discharging into any segments listed as incidental contact recreation and noncontact recreation to employ disinfection practices after a reasonable compliance period. What did you mean when you said as a precautionary

measure?

MR. TWAIT: Well, that is -- What I meant by that was that we were proposing an effluent standard to protect the proposed designated use instead of waiting for U.S. EPA and the district to get done with their studies because this is, as we know, effluent that has bacteria in it. So as a precautionary measure to the users of the system, we propose the effluent standard.

MR. DIMOND: Your qualifier as a precautionary measure, is that an indication that the Agency doesn't have any hard data to indicate that the condition of the water is creating any risk to persons who recreate?

MR. SULSKI: This question has been asked and answered a number of times and I'll reiterate my answer. We know that the system is dominated by human originating wastewater that contains pathogens of human origin. And we felt it prudent to put an effluent standard on those discharges knowing that they dominate the system, on average 75 percent of the flow in the system.

MR. DIMOND: Are you done, Mr. Sulski?
MR. SULSKI: Yes.
MR. DIMOND: Okay. And yet the Agency admits that there are many ongoing studies that questioned whether or not this treatment is really necessary to protect the recreating public, right?
MR. TWAIT: There are national criteria documents that we don't feel -- that we feel are outdated that use fecal coliform. And based on that data, these would not be something that you would want primary contact in, and most likely secondary contact. And so we think that disinfection is necessary.
MR. DIMOND: Okay. I understand that you think that the national criteria documents are outdated. What is your basis for thinking that the disinfection is necessary?
MR. SULSKI: We know that disinfection kills pathogens. We know that the system is dominated by pathogens from large municipal effluents which are, in themselves, dominated by pathogens of human origin. If we reduce

the human originating pathogens in these effluent-dominated waterways, we believe we will reduce some risk. And because of the uses existing in the system, we were compelled to put in the effluent standards.

MR. DIMOND: It seems to me, I guess my question then, Mr. Sulski, or, you know, for anyone on the panel, is I understand that, you know, if disinfection is required, yes, it may reduce the level of pathogens. I guess the question is how do you know the level of pathogens are at a concentration that creates a risk? That's the question you haven't addressed.

MR. TWAIT: That's the reason that we are proposing a two-year compliance period, and so that if the District does not -- determines that there is not a perceived risk, then they can come back to the Board.

MR. DIMOND: Would each industrial discharger that might have bacterial issues have to come back to the board as well?

MR. TWAIT: I would think that it could all be addressed in one rulemaking for

the entire water body.

HEARING OFFICER TIPSORD: Mr. Andes, did you have something?

MR. ANDES: Fred Andes for the Metropolitan Water Reclamation District, Greater Chicago. Couple of questions along those lines. First, I think that the answers the Agency was giving were using pathogens and bacteria interchangeably; but, in fact, this infection might reduce bacteria, but it won't eliminate all pathogens. Am I right?

MR. TWAIT: Depending on what technology, yes.

MR. ANDES: Is there any technology that would eliminate all pathogens?

MR. TWAIT: There is no -- As far as I know there is no one technology that would reduce path -- all pathogens. Some are good at removing viruses, some are especially good at removing bacteria.

MR. ANDES: Has the Agency studied the various technologies and the cost and the feasibility in this situation?

MR. TWAIT: Could you repeat the

question?

MR. ANDES: Has the agency studied the economics and technical feasibility of those various options?

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

MR. ANDES: In terms of the risk, and I believe that Mr. Sulski talked about reducing risk. In fact, the significant issue in terms of bacteria in water bodies is the number of combined sewer overflow discharges. Am I right?

MR. TWAIT: Yes.

MR. ANDES: Which I believe we talked about an average of, I think the testimony last time, was an average of 15 times -- 15 year times about 300 different overflow points.

MR. TWAIT: Yes.

MR. ANDES: Okay. That also -- So this proposal doesn't address that at all. So those sources of bacteria are unaddressed by this proposal?

MR. TWAIT: They are unaddressed by

this proposal, yes.

MR. ANDES: And any sources of bacteria from municipal separate storm sewer systems, MS4s, are also unaddressed by this proposal?

MR. TWAIT: Correct.

MR. ANDES: Okay. Is there any quantification by the Agency of the extent to which the disinfection of certain facilities will reduce the risk compared to the remaining risk from bacterial discharges?

MR. SULSKI: It's a matter of proportions, volumes of undisinfected effluent to volume of ambient or noneffluent flow.

MR. ANDES: But is there a comparison there to the CSOs, MS4s, other sources?

MR. SULSKI: Well, then it's a frequency of proportion, how many days are there storm flows compared to how many nonstorm flow days there are.

MR. ANDES: Is that in the record anywhere?

MR. SULSKI: How many storm flow days

there are?

MR. ANDES: And frequency and extent of those discharges from MS4s and CSOs?

MR. SULSKI: We submitted some district wet weather data today, and so there is some information in the record on that that the District generated.

MR. ANDES: Is that only as to -- What discharges does that data pertain to?

MR. SULSKI: It pertains to rain events and levels of bacteria within the waterways during heavy rain events, moderate rain events, nonrain events.

MR. ANDES: Okay. But that doesn't differentiate between various sources of the bacteria, right?

MR. SULSKI: It does not. But, again, it's proportions. The district dominates -- the district effluents dominate the system on an average of 70 percent, 70 percent of the waste waters is municipal --

MR. ANDES: Over the course of a year?

MR. SULSKI: Yes, yes. Sometimes it's much higher, sometimes it's less. Sometimes

they dominate the system especially in their recreating months of August or so when flows are typically low, they can be 100 percent of the ambient flow.

MR. ANDES: But the contributions of bacteria from other sources, particularly during wet weather events from MS4s and from CSO discharges which are not addressed by the proposal, the agency hasn't really done any kind of analysis to the extent of the risk caused by those discharges. Am I right?

MR. SULSKI: The extent of the risk, no.

MR. ANDES: Okay. And as to the two-year time frame, and I believe we've talked about this before, but we'll eventually have testimony about the time lines for the studies. If you assume for a moment that the results of the studies won't be available probably until 2010, which is very close to your two-year, and if the studies aren't available until then and then the parties have to evaluate the results of the studies and then determine whether

they'll go to the Board and ask the Board to change the rule, where is the time for the District and other dischargers to, if, for example, the Board decides to affirm the rule, where is the time for the dischargers to install their system needed to comply?

MR. TWAIT: I've addressed this previously, but the intent was for the rule to -- to give the district some time to engineer the studies now while their epi study is going on and when they get the reports of the study to implement it. If our time line is not sufficient, we would be willing to change the dates.

MR. ANDES: Okay. Thank you.

MR. TWAIT: And our time line is not two years. I misspoke. If we have a March 1st, 2011, so that would be almost three years from now.

MR. SULSKI: We base the time line on what the forecast for the completion of the epi study was.

MR. ANDES: But in terms of the number of years from the time when this rulemaking

is done, probably not going to be done soon, so just a comment.

HEARING OFFICER TIPSORD: Mr. Dimond?

MR. DIMOND: All right. While there are many questions under some of my categories that I have not asked, I think that they've been covered in various and sundry ways. So I am skipping over many of them and I'm skipping to the heading of thermal standards.

HEARING OFFICER TIPSORD: Which is Page 13 of the prefiled questions.

MR. DIMOND: And there is only one question left there that I'm going to ask. And this in itself may just be confirmatory of what has previously been testified to, but I'm having a hard time remembering.

It relates to Question No. 1. Does the Agency currently have any data on whether or not the Upper Dresden Island Pool is meeting the proposed temperature limits?

MR. TWAIT: The only data we have on the Upper Dresden Island Pool IS at the I-55 bridge.

MR. DIMOND: And if you analyze that data, is the Upper Dresden Island Pool currently meeting the proposed temperature limits?

MR. TWAIT: I have not analyzed that particular data, so I can't give you an answer to that.

MR. DIMOND: I think the other questions under that category have been asked, and I just have a couple of additional questions, Madam Hearing Officer.

If the Illinois EPA fails to analyze a use attainability analysis factor for lack of data or information, doesn't that create the potential that the Agency will propose water use designations, and, thus, water quality criteria that are more stringent than required by federal law?

MS. WILLIAMS: Which question are you on? Can you repeat it, because I was busy looking for it.

MR. DIMOND: Sure. If the Illinois EPA fails to analyze a UAA factor for lack of data or information, doesn't that create the

potential that the agency will propose water use designations, and, thus, water quality criteria that are more stringent than required by federal law?

MR. SULSKI: Well, by default we would have to adopt Clean Water Act goals.

MR. DIMOND: I don't think that answered my question.

MR. SMOGOR: With the use attainability analysis, the ultimate objective is to answer the question can the Clean Water Act goals be met or not, and if they can't then why. And the reasons why are provided by any one of those six factors. So if you invoke at least one factor, you're creating enough justification to propose a use that's less than a Clean Water Act goal, and then your charge becomes to propose water quality standards to protect that sub Clean Water Act goal, for lack of a better term.

So I don't think that if you didn't consider every -- if you don't consider every single UAA factor, I don't see how that necessarily results in

overprotective criteria.

MS. WILLIAMS: I mean I think this, the way I look at it from the legal side, is by following out your thought, I guess you could say that in every general use water where we haven't gone forward and studied whether there's a UAA factor to justify downgrading that general use, then we're maybe somehow more stringent than federal law. And I don't think that's -- That's not my interpretation of more stringent than federal. I don't believe federal law prescribes these type of requirements but leads the stage where they can justify something less; but then the Clean Water Act goal, okay, but if not, they need to meet the full goal. So I may have made it more confusing --

MR. DIMOND: I think I understand what you're saying. Let me ask this question. As to the Upper Dresden Island Pool, the Agency did not -- it is the Agency's belief that there are no use attainability analysis factors that justify a downgrade from the

Clean Water Act goals; is that correct?

MR. SULSKI: Correct.

MR. SMOGOR: For aquatic life use. That's correct.

MR. DIMOND: But you have justified downgrades on recreational?

MR. TWAIT: Yes.

MR. DIMOND: Let's stick with the aquatic life uses. You haven't downgraded, based on a UAA factor, but there are some UAA factors that you, frankly, just didn't analyze, correct?

MR. SULSKI: Well, we didn't -- We relied on the data that was submitted to us through the stakeholder process and through outreach to answer the questions. We worked with what we had and we can't work with what we don't have.

MR. DIMOND: There were some UAA factors where Illinois EPA didn't do a full analysis for the Upper Dresden Island Pool; is that correct?

MS. WILLIAMS: Can you specify what factors you're taking about?

MR. DIMOND: Well, the economic one for one. The Agency didn't attempt to do a full analysis. Isn't that exactly what the final UAA report for the lower Dresden -- I'm sorry -- for the Lower Des Plaines River says?

MR. SMOGOR: I don't think that those six factors that we're talking about are absolutely required of a use attainability analysis. I think the six factors that we're referring to, which I think are at 40 CFR 131 10 G, I believe, those six factors are the justification or potential justification for proposing something less than a Clean Water Act goal. For the Upper Dresden Island Pool in terms of aquatic life, we did not propose something less than the Clean Water Act goal; and, therefore, those six factors aren't necessarily directly required or relevant.

MR. DIMOND: Well, but if you fail to analyze one of those factors, isn't it possible that you're designating a use for that stretch of waterway that is more

stringent than is required by a federal law?

MR. SMOGOR: Well, we believe that we went through a use attainability analysis, which is more or could be different than just going through those six factors. And the results of our use attainability analysis were that the Clean Water Act aquatic life goal is obtainable in Upper Dresden Island Pool.

MR. DIMOND: But there was some factors that the agency did not fully analyze.

MR. SMOGOR: It is possible that a use attainability analysis, if it does not -- if it doesn't -- If it's not comprehensive enough can miss something. But what I'm trying to say is a use attainability analysis is not defined by going through each of those factors. Those are not the same exact things. Doing a use attainability analysis and going through six of those factors at 40 CFC 131 10 G are not necessarily equivalent exercises.

MR. SULSKI: And to just say that

there's a universe out there, why don't you look at the whole universe. We received, and in this case we have a lot of data, we have a lot of data than your typical UAA which is oftentimes just a drive-by, look up the stream and fill out a check list. We have a lot of chemistry, we have a lot of habitat data, we have a lot of data. But, you know, if you're suggesting that because I didn't take boron samples in the soil in the tollstoin (ph.) deposits, and there's, you know, I don't know whether boron is a problem or cadmium somewhere else. I mean we dealt with what we had. We looked at what we had. We can't look at what we don't have. We asked for everything available.

MR. DIMOND: Madam Hearing Officer, thank you, agency witnesses, thank you. I am done.

HEARING OFFICER TIPSORD: Thank you, Mr. Dimond. That moves us on to Corn Products, Mr. Safley.

MR. SAFLEY: Yes, ma'am. Am I okay to stay here for the agency witnesses?

HEARING OFFICER TIPSORD: I think so.

MR. SAFLEY: And for the court reporter. I should have asked the court reporter first. I apologize.

Tom Safley on behalf of Corn Products International. We also have tried to go through our questions. Obviously we've had an opportunity to ask some of them already. Some of them have been answered in the context of other parties' questions, so I will go through them and indicate which question we're on.

The first question that remains to be asked is on Page 2, Question No. 2. While developing the proposed water quality standards, what steps did the agency take to evaluate the characteristics of the Chicago Sanitary and Ship Canal such as flow, temperature, discharges into the water body, et cetera?

MR. SULSKI: We started a stakeholder group, we solicited those stakeholders for any and all data that they could provide to us, we even reached beyond the stakeholder

group to the public at large through public hearings to obtain, you know, any data that we could get our hands on, and then we even utilized additional data that was provided for us by MWRD in terms of chemistry in betweeen the last stakeholders' meeting and our proposal.

MR. SAFLEY: Going on, and I'm going to alter this next question just a little bit to avoid a compound question. At times the Chicago Sanitary and Ship Canal has low flow. Does the Agency know how that condition will impact Corn Products' ability to comply with the proposed standards?

MR. TWAIT: The 7Q10 low flow value would be what the Agency uses to set permit limits based on any allowable mixing.

MR. SAFLEY: It's my understanding from the materials that the Agency has submitted in support of the rulemaking that there is human manipulation of the flow and the levels of water in the Chicago Sanitary and Ship Canal in anticipation of storm events; is that correct?

MR. SULSKI: Correct.

MR. SAFLEY: How would that human manipulation be taken into account in setting permit limits or by Corn Products in making sure it's in compliance with the proposed rules?

MR. TWAIT: The U.S. geological -- no. The Illinois State Water Survey has developed a 7Q10 map for low flows, and they have determined the low flows on -- yeah, the 7-day 10-year low flows on the system.

HEARING OFFICER TIPSORD: Is that map part of the record?

MR. TWAIT: I do not believe so.

MR. SULSKI: So that's what we look at when we're looking at mixing zones standards, et cetera. When we're talking about manipulations, we're talking about dealing with storm events where flows are considerably higher, so.

MR. SAFLEY: Once the storm event begins; is that correct? It was my understanding that the flow or the levels may be reduced in the canal in anticipation of a

storm event that is not yet occurring but is on the way.

MR. SULSKI: In anticipation of a storm event they tried to evacuate the -- and will increase the flows.

MR. SAFLEY: Okay.

MR. SULSKI: And then as the storm comes, they will allow the storm to refill the system. If the storm isn't as intense as anticipated, they may have to use some discretionary or some navigation make-up water from the lake.

MR. SAFLEY: And, Miss Tipsord, I had the same question which is that the map you were looking at in the record? And I think the answer to that was no?

MR. TWAIT: Correct.

HEARING OFFICER TIPSORD: We need a copy.

MR. SAFLEY: We request that it be placed in the record -- Excuse me.

MR. TWAIT: Can I provide a link to a website the Illinois State Water Survey's website? Because they have the map

digitally. I don't know that the Agency has --

HEARING OFFICER TIPSORD: If that's all you can give us, that's all you can give us.

MR. TWAIT: I'll see if I can get a map and I'll provide a link.

MR. SAFLEY: I just want to ask Mr. Twait, and you started to do this, if you, for the record, could clarify the term 7Q10 so the record is clear.

MR. TWAIT: Seven day low flow in a ten-year period.

MR. SAFLEY: Just so I understand, the Agency in setting permit limits for discharge into this water body that was faced with these human manipulation events, the Agency would look at that map that you referenced and take the 7Q10 flow into account in setting those permit limits; is that correct?

MR. TWAIT: Yes.

MR. SULSKI: Again, there aren't human manipulations -- I shouldn't say never, but human manipulations are generally associated

with high -- with rain events, episodes.

MR. SAFLEY: Okay. Moving on then to Page 3, Question No. 5. In the Agency's description of the regulatory history of prior rule makings establishing water quality standards for the Chicago Area Waterway System and Lower Des Plaines River, the Agency discusses arguments that, quote, while an increased temperature standard had perceived benefits such as maintaining the river for year-round navigation and speeding up the degradation of ammonia, there would be no advantage in adopting a general use designation because the waterway would be incapable of supporting aquatic life anyway and use of the river for recreation up to the Interstate 55 bridge was nonexistent due to industrialization, closed quote. And that's statement of reasons at Page 10.

On to the question: If an increased temperature standard increases the degradation of ammonia, a lower temperature standard, as the Agency proposes, will decrease the speed of the degradation of

ammonia, thus increasing the amount of ammonia in the CAWS and the Lower Des Plaines River. Has the Agency considered the impact that increased ammonia concentrations will have on the environment?

MR. TWAIT: To answer your question, when the Agency made those statements, it was 1972, and 30 years ago ammonia was a toxic issue, the level of ammonia in the receiving stream was toxic to certain fish. Now the District removes ammonia at the wastewater treatment plant. So the ammonia is no longer toxic, and so that argument is no longer valid. The ammonia is removed at the treatment plant rather than in the receiving stream.

MR. SAFLEY: So then it would be correct then to summarize that the Agency does not consider, at the present time, the lowering of the temperature to raise any concerns with regards to the levels of ammonia in the receiving water body?

MR. TWAIT: Correct.

HEARING OFFICER TIPSORD: If I may,

Mr. Twait. When you say those statements, you're talking about statements especially for 30 years ago, you're talking about prior rulemakings, and this quote was a summary or an indication of what occurred or what was discussed in a prior rulemaking; is that correct?

MR. TWAIT: Correct.

MS. WILLIAMS: They were probably statements by the boards not the agency.

HEARING OFFICER TIPSORD: Thank you.

MR. SAFLEY: I'll move on to our Question 7 at the bottom of Page 4. The agency states that when the CAWS and Lower Des Plaines River were designated as secondary contact, the waters had certain characteristics including flow reversible projects, low velocity and stagnant flow condition. Statement of reasons at Pages 19 to 20. Does the Agency believe that such conditions have changed, particularly the conditions of the Chicago Sanitary and Ship Canal?

MR. SULSKI: I have a question on the

flow reversible projects. I don't see an exact quote here. Can you just clarify what you mean by flow reversal projects?

MR. SAFLEY: Let me grab my copy of the statement of reasons.

HEARING OFFICER TIPSORD: It's at the bottom of Page 19, I think, is when he first refers to it.

MR. SULSKI: In the statement of reasons.

MR. SAFLEY: Yes, yes.

MR. SULSKI: What's referred to here is when they actually dug the canal. So they reversed the flow of the Chicago Calumet River systems. So those conditions continue.

MR. SAFLEY: Okay. What about the reference to low velocity and stagnant flow conditions? Does the Agency consider those conditions in the Chicago Sanitary and Ship Canal to remain?

MR. SULSKI: At times there are low velocities throughout the system. The stagnant flow conditions have been associated with a couple of water bodies that we've

talked about: The south fork of the south branch where there is no input unless sewers are overflowing, and the north shore channel upstream of the north side water reclamation plant where there is limited flow due to less discretionary diversion, less diversion from the lake through that reach.

MR. SAFLEY: Okay. So then just to clarify that, this -- the Agency does not believe stagnant water conditions to be an issue in any other portions of the Chicago Area Waterway System than the two you just named; is that correct?

MR. SULSKI: No. I wouldn't call it stagnant.

MR. SAFLEY: Well then sticking with the low velocity, moving on to the next question. In light of the low velocity issues, how can dischargers comply with the proposed standards if such condition is characteristic of the Chicago Sanitary and Ship Canal and hinder the Chicago Sanitary and Ship Canal's ability to attain water quality standards?

MR. SULSKI: Well, of the parameters we looked at, we recognize these stagnant flow conditions as hindering the achievement of the proposed EO standards, and we recommended or we arrived at options for overcoming that deficiency. That was done years ago as well in the Cal-Sag System where we had dissolved oxygen deficiencies where the side stream elevated aeration stations (ph.) were.

So I guess the extent that information was brought forward, we examined flow conditions and how they might affect water quality, and we're at a difficulty with some parameters.

MR. SAFLEY: That's what I wanted to investigate, Mr. Sulski. You mentioned DO. Are there any other parameters that the Agency is aware of that it feels are going to be a particular problem with regard to the flow in the Chicago Sanitary and Ship Canal?

MR. SULSKI: I think temperature is going to be a problem.

MR. SAFLEY: Okay. And how does the

low flow affect temperature in the Chicago Sanitary and Ship Canal?

MR. SULSKI: The amount of water that I guess can be withdrawn for cooling without dominating, removal of all the water from the system during low flow periods.

MR. SAFLEY: Let me phrase my question a little differently.

Does the low flow -- when there are low flow conditions in the Chicago Sanitary and Ship Canal, do those low flow conditions result either in increased temperatures in the Chicago Sanitary and Ship Canal or a slower decrease of temperatures in the Chicago Sanitary and Ship Canal?

MR. TWAIT: Well, part of that depends upon how dischargers are reacting to those low flows. And I know Midwest Generation, I'm not sure how they operate the facilities and the Chicago Sanitary and Ship Canal, but it's my understanding that during low flows for their Joliet facility they at least, they derate when low flows are occurring. And I'm not sure if they have to do that for the

Fisk, Crawford and Will County facilities.

MR. SAFLEY: Is it likely that facilities that are discharged into the Chicago Sanitary and Ship Canal are going to have higher thermal values at their intake when there are low flow conditions in the water? Are they going to be receiving water because of those low flow conditions?

MR. SULSKI: I haven't done that analysis, because low flows aren't necessarily associated with your highest temperature. You can have winter low flows when it's very cold out. There's no other inputs into the system except for the wastewater treatment plants. So --

MR. SAFLEY: There's not necessarily a correlation.

MR. SULSKI: Correct.

MR. SAFLEY: Well, you mentioned -- We mentioned the DO and temperature. Are there any other parameters that are impacted by low flow conditions in the Chicago Sanitary and Ship Canal?

MR. SULSKI: Bacteria would certainly

be.

MR. SAFLEY: Any others?

MR. SULSKI: Not that I'm aware of.

HEARING OFFICER TIPSORD: Mr. Safley, slow down when you're reading.

MR. SAFLEY: Yes, ma'am. Moving on to our Question 9 on Page 5.

The Agency provides a short section in its statement of reasons on the technical feasibility of the proposed rulemaking. The Agency concludes its brief technical justification by explaining that Midwest Generation is conducting a study regarding how to provide cooling for its facilities where there is limited land to install cooling capacity, statement of reasons at Page 99. The Agency states that the Midwest Generation concludes that, quote, or that it, quote, is technically infeasible, paren, or economically unreasonable, closed paren, to install additional cooling capacity as these facilities. Section 316 of the Clean Water Act allows Midwest Generation to petition for relief from these requirements,

closed quotes.

Skipping the first question that's there, going on to the second. How would Midwest Generation receiving regulatory relief from the proposed new thermal requirements affect dischargers downstream from Midwest Generation?

MS. WILLIAMS: Well, you can skip the first question if you want, but I don't think that we can answer the second question without explaining that last time I explained that that statement that you just quoted was an incorrect and misleading explanation of Section 316 of the act.

MR. SAFLEY: Okay. I apologize for not changing the question in light of that.

MS. WILLIAMS: That's okay.

MR. SAFLEY: Well then, removing that reference to 316 more broadly, how would Midwest Generation receiving regulatory relief of any sort or by any mechanism from the proposed new thermal requirements affect the dischargers downstream from Midwest Generation.

MR. TWAIT: That would be dependent upon the types of relief that the Board grant. It could change the water quality standard then they would have to take all the other dischargers into account.

MR. SAFLEY: Okay. And I thought it was understood in this, it certainly was intended. Regulatory relief that change the water quality standard so it will increase the water quality standard in light of Midwest Generations' situation. In that case then, Mr. Twait, it's your understanding the Board would have to take into account dischargers downstream from Midwest Generation as well.

MR. TWAIT: I would certainly think that that would need to be done.

MS. WILLIAMS: I can say I've never been part of an adjustment standard where the Board did not ask that question and expect the parties to provide that information.

MR. SAFLEY: Moving on then, thank you, to our Page 7. And I just am realizing that my pagination may be a little different,

and I apologize. This is under Roman Numeral II, Question 14 -- I'm sorry -- Question 15. I apologize.

HEARING OFFICER TIPSORD: Page 7.

MR. SAFLEY: Again, Question 15, now we're on to the issue of chlorides. How will the Chicago Sanitary and Ship Canal's attainment with the agency's proposed chloride standard be determined?

MR. ESSIG: That will be determined by looking at water quality data from various organizations including ourselves, comparing it to the water quality standard.

MR. SAFLEY: Mr. Essig, can you identify the other organizations besides what will be the source of the data?

MR. ESSIG: MWRDGC provides water quality data to be used by the agency in the integrated report. We also get data from other outside sources, not necessarily from this system, but that could happen as well.

MR. SAFLEY: When you say other sources not on this system, you mean data not regarding this system or -- I'm not sure I

understand.

MR. ESSIG: Currently we do receive data from other organizations, but not necessarily on this system right now. But that doesn't mean that wouldn't happen in the future. For instance, USGS might be doing a study and we might utilize some of their data.

MR. SAFLEY: It would be data about the Chicago Sanitary and Ship Canal?

MR. ESSIG: Yes, yes.

MR. SAFLEY: When you said not on this system --

MR. ESSIG: Currently right now primarily what we're using is data either from MWRDGC or --

MR. SAFLEY: With regard to the Illinois EPA data is that from industry monitoring stations or --

MR. ESSIG: Yes. From the ambient part quality station.

MR. SAFLEY: And some of these -- I have some follow-up questions to that that are not here in the prefiled questions.

But just to clarify a few issues that were discussed to some extent previously. To what degree does the Chicago Sanitary and Ship Canal currently exceed the Agency's proposed chloride standards?

MR. ESSIG: At this point I don't know. I have not done the analysis.

MR. TWAIT: Could you repeat that question?

MR. SAFLEY: Sure. To what degree does the water in the Chicago Sanitary and Ship Canal currently exceed the Agency's proposed chloride standards?

MR. TWAIT: I did take a look at data provided by the district for 2001 through July of 2003. And there are periodic violations in the wintertime. The District's data is taken once per month. And so it's difficult to say whether these exceedances happen for a one-day event or for a three- or four-week period.

MR. SAFLEY: Okay. There was a little bit of discussion at the table, but I couldn't hear it.

MR. SULSKI: I'm sorry. Attachment W is the data he's looking at.

MR. SAFLEY: That's what I was going to ask. So you're referencing the data in the records?

MR. SULSKI: So it actually goes beyond 2003 up to 2006.

MR. SAFLEY: And that Attachment W data, am I correct that that is data on a monthly basis; that's not, as we had with some of the temperature data, an average of a period of years? I don't have that. I'm sorry. I don't have that exhibit in front of me, so. Is it the actual monthly data or is it an average over several years of different monthly values?

MR. TWAIT: I'm not sure what was provided. It's, as Rob said, it's individual data.

MR. SAFLEY: So if I wanted to find out what the monthly data was for October 2002, I could go to that exhibit?

MR. SULSKI: Correct. But I did -- I misquoted on the dates here. Because this

Attachment W is a combination of two sets of data: One is the 2001-2006 effluent samples from the district for temperature, and then the other part is the 2005 and 2006 water quality sample results. So 2005 and 2006 water quality data.

MR. SAFLEY: At what point is the water quality data collected?

MR. SULSKI: Pardon me?

MR. SAFLEY: At what point is that water quality data collected? You differentiated from effluent data. Is there a station --

MR. TWAIT: They have numerous stations throughout the system.

MR. SAFLEY: I guess I was asking do you know -- were you provided information on at what station they collected that data?

MR. SULSKI: It is -- The station is indicated within the table, and you can go to their website and find out, look at their map and look at where all the stations are.

MR. SAFLEY: Okay. Mr. Twait, you referenced, in looking at that data, that

there were some exceedances of the Agency's proposed water quality standard during the winter months; is that correct?

MR. TWAIT: I'm sorry. Let me back up.

MR. SAFLEY: Sure.

MR. TWAIT: Looking at the dates and Attachment W doesn't correspond exactly to what I looked at, and we can provide that additional data if it's not already provided.

MR. SAFLEY: Well, Mr. Twait, is the additional data that you looked at from PWRD or --

MR. TWAIT: It is from PWRD.

MR. SAFLEY: I ask it to be provided or clarification given to -- certainly if it's already in the record.

But it's your recollection that the data, the other data that you reviewed, Mr. Twait, showed exceedances during at least on some occasions during the winter period of the proposed chloride standard; is that correct?

MR. TWAIT: Yes.

MR. SAFLEY: Okay. And we talked at one of the previous hearings about the relationship between road salting in the winter months and chloride levels. I guess, just to make sure I understand, to what degree would you attribute those winter exceedances to the salt -- to road salting and to what degree would you attribute those winter exceedances to something else?

MR. TWAIT: I don't know that I would attribute them to anything other than road salting, because they only happen during the winter.

MR. SAFLEY: Okay. We also touched a little bit in one of the last hearing dates on efforts by local governments that are engaged in road salting to institute best management practices. Are those efforts that are currently ongoing or are those efforts that the Agency is working to assist those municipalities in implementing in the future?

MS. WILHITE: Marsha Wilhite. That is ongoing as part of a TMEL.

MR. SAFLEY: Okay. Does the Agency

have any information on how those ongoing efforts have reduced the levels of chlorides in the Chicago Sanitary and Ship Canal, if at all?

MS. WILHITE: I would need to check. I'm not certain that we have that information because I'm not certain what the implementation dates were. The practices have been identified and be implemented this coming season, I'm not certain, but I can check and provide that information.

MR. SAFLEY: And, Ms. Wilhite, you mentioned that this was in connection with the TMDL process. There's a TMDL process currently ongoing for Chicago Sanitary and Ship Canal?

MS. WILHITE: No, no. I'm sorry. I thought you were speaking generally about practices for road salting.

MR. SAFLEY: No. I'm sorry. If I did, I misspoke. I meant to be speaking more particularly with regard to the Chicago Sanitary and Ship Canal.

MS. WILHITE: I'm not aware of

practices that are being promoted by the Agency that affect that water body at this time.

MR. SAFLEY: Thank you.

MR. SULSKI: I'd like to add to that, though, these municipal separate storm sewer permits are out and they have a general BUP requirement to look at minimizing contamination of storm water; that includes where you store your salt, how you use your salt, things like that. So those permits are out there, and road salts are identified in those permits.

MR. SAFLEY: Just to clarify that --

MS. WILLIAMS: Can I clarify first? When you say those permits, are you talking about individual MS4 permits or a general?

MR. SULSKI: A general MS4 permit would be the permit.

MR. SAFLEY: When was that put out with those references?

MR. SULSKI: A long time ago. It was staged depending on the population size. I would have to -- I don't know the dates

offhand, but it's been for a while. First the very large municipalities -- the two cuts in the MS4 permits. First it was very large and then how long ago did we --

MS. WILHITE: 2003.

MR. SULSKI: 2003.

HEARING OFFICER TIPSORD: Mr. Forte has a follow-up.

MR. FORTE: These MS4 permits have been outstanding for a few years anyway in general terms. And the terms of the MS4 permits you believe would restrict or require the municipalities to do something to reduce road -- snow melt or road salt runoff during snow melt conditions. Is that your view of what those permits should require?

MR. SULSKI: They would require the permit team to look at all instances where storm water can be contaminated.

MR. FORTE: And this would be in the form of typically -- municipalities would then be in a position of adopting a best practice plan of some sort in order to address that?

MR. SULSKI: Correct.

MR. FORTE: And does the agency have any data on the measures that have been taken on the relative success of those measures in terms of --

MR. SULSKI: We're right at the point of that permits where the BMPs are beginning to be due, so we're just beginning.

MR. FORTE: So there's really not a track record to say this has worked and this has not worked?

MR. SULSKI: Not along the Sanitary and Ship Canal.

MR. SAFLEY: And, Mr. Forte got to some of my same thoughts on follow-up questions --

HEARING OFFICER TIPSORD: Before that, Mr. Safley, let's just be clear, BMP is best management practice.

MR. SULSKI: Yes.

MR. SAFLEY: And, Mr. Sulski, Miss Wilhite, I appreciate the clarification on that. Just to close out this line of questioning then, would it be accurate to

state that the Agency does not have data with regard to the Chicago Sanitary and Ship Canal to be able to analyze whether these BMPs that are due under these MS4 permits are going to result in levels during the winter being lower than the Agency's proposed standards?

MR. SULSKI: We don't have data. That is correct.

MR. SAFLEY: Does the Agency anticipate that in the next few years as these BMPs become due it will generate some of that data?

MR. SULSKI: As BMPs become due and become implemented, it would hopefully be reflected in the ambient water quality.

MR. SAFLEY: But it's correct that the Agency doesn't have any way to say right now prior to that implementation that those current BMPs are going to result in this water body being in containment at all times for the proposed chloride standard?

MR. SULSKI: I could not make that.

MR. SAFLEY: Thank you.

HEARING OFFICER TIPSORD:

Mr. Ettinger, did you have a follow-up?

MR. ETTINGER: I missed. He said proposed chloride standard. You mean the proposed chloride standard for this secondary treatment water, that change? You're not now proposing any changes in the chloride standard for general use.

MS. WILLIAMS: Applicability of the general use standard to these waters.

MR. ETTINGER: Thank you.

HEARING OFFICER TIPSORD: Mr. Safley?

MR. SAFLEY: Thank you. All of our questions on Page 8 have been asked and answered or we're happy to go past them. And, again, I apologize if my pagination is different. The next question I have is our No. 23 in this section which is on my page 9.

HEARING OFFICER TIPSORD: My Page 9 as well.

MR. SAFLEY: Thank you. How is the critical use of chlorine compounds which are used for cooling system disinfection and zebra mussel control regulated under the proposed chloride limits?

MR. TWAIT: We regulate the chlorine compounds through the TRC water quality standard, total residual chlorine water quality standard. The use of chlorine compounds for disinfection or mussel control is going to introduce a very small amount of chloride. And it's not something that the Agency has determined is sufficient or is significant.

MR. SAFLEY: Okay. And to follow-up on that, Mr. Twait. We talked -- or you mentioned a little bit earlier the -- I think it's 304.103 which provides that if a facility is not increasing mass to background level, adding to background levels or is doing that in -- I don't remember the exact terminology -- in an insignificant manner, then it does not have an obligation to reduce its discharge below background levels. Has the Agency considered that addition of -- small addition of chlorides through the use of chlorine for disinfection or zebra mussel control in the context of that exception in 304.103?

MR. TWAIT: 304.103 talks about the trace amounts of incidental addition of traces of materials not utilized or produced in the activity of the source of the waste. And I believe that the chlorides created with the use of chlorine would fall into that.

MR. SAFLEY: Thank you. Moving on to our Roman Numeral III which is questions relating to dissolved oxygen.

HEARING OFFICER TIPSORD: I told everyone we'd take a break around 3:00. I have about three minutes until 3:00. So let's go ahead and take about a 30-minute break and we'll come back on the record.

(Short break taken.)

HEARING OFFICER TIPSORD: Let's get started. We're ready to get on the record. Mr. Safley, would you like to continue.

MR. SAFLEY: Yes, ma'am, I would like to continue. Thank you.

And I do need to back up just a second to one other question before we can get to the dissolved oxygen questions.

Our Question 24, which is on

my Page 10, references dehalogenation. And I'm not going to ask the exact questions here, but I wanted to follow up on the subject in light of the discussion that we had had prior to the break.

Mr. Twait, before the break we were discussing how the use of chlorine, for example, zebra mussel control could result in small quantities of chloride in the discharge. Do you recall that discussion?

MR. TWAIT: Yes.

MR. SAFLEY: And I wanted to follow up on that discussion and our discussion of how that would intersect or be viewed under Section 304.103 by discussing dehalogenation. It's our understanding and experience that dehalogenation is often achieved by the use of bisulfate compounds, the use of which would result in small quantities of sulfates in a wastewater discharge. Would you view and the Agency view that kind of small addition of sulfates to wastewater stream dehalogenation in the same way that we discussed the use of chlorine for zebra

mussel control and that resulting in a small amount of chlorides in the wastewater discharge?

MR. TWAIT: Yes, we would.

MR. SAFLEY: Thank you.

Moving on to Roman Numeral III, questions related to dissolve oxygen. And our Question No. 29, and I want to try to see if I can ask this, and actually this series of questions, in a way that doesn't get us repeating a lot of things that we've already talked about. We discussed earlier how attainment of the Chicago Sanitary and Ship Canal, for example, with chloride standard might be ascertained, and the panel responded that it might look at its own data from industry monitoring stations, it might look at data from the MWRD, it might look at data from other third parties such as the Illinois State Water Survey. Would that be -- Would that answer be the same with regard to our Question 29 relating to how Chicago Sanitary and Ship Canal's attainment with the proposed dissolved oxygen standard

would be determinable?

MR. ESSIG: Yes. That would be correct.

MR. SAFLEY: Then we've already discussed chloride. Would the answer be the same, again, just to kind of try to work through this, with regard to the Agency's proposed sulfate standard, the use of -- well, and you just answered with regard to DO; is that correct? Would the Agency look at the same kind and source of information with regard to sulfates?

MR. ESSIG: Yes.

MR. SAFLEY: And what about for thermal issues on the Chicago Sanitary and Ship Canal?

MR. ESSIG: Yes. That would be the same.

MR. SAFLEY: Moving on to our Question 30. With regard to all of those parameters or if we need to break up, we certainly can, how many tests must be conducted to determine noncompliance with the Chicago Sanitary and Ship Canal with a

particular standard?

MR. ESSIG: Well, it would depend on the type of parameter that we're looking at. For dissolved oxygen, basically we utilize -- We look at data over a three-year period, and if less than 10 percent of the values are below -- or I should say if more than 10 percent of the values are above the minimum dissolved oxygen standard, then it would be listed as impaired for dissolved oxygen. If there's, I forget -- is there a mean for the Sanitary and Ship Canal?

MR. SMOGOR: Well, let's see, Cause D, we've proposed a daily minimum, and we've also proposed a seven-day average of daily minimum.

MR. ESSIG: So in that case if there was one seven-day period that was below that standard then it would possibly be listed. In terms of something like chloride or sulfate, basically we're looking at the same situation looking at three years' worth of data, but in that case it would take about two samples that were above the standard to

be listed as DO.

MR. SAFLEY: Two samples in a three-year period?

MR. ESSIG: Yes.

MR. SAFLEY: Sampling on how often a basis?

MR. ESSIG: A minimum of ten samples. It's a basic guideline, but generally our ambient program and MWRD's ambient program with sampling at a minimum at least nine times a year, and MWRD does either monthly or, in some cases at some locations, I think weekly.

MR. SAFLEY: Okay. So when you say a minimum of ten samples, you mean over a year period? You don't mean ten samples over three years.

MR. ESSIG: It's ten samples over a three-year period is the minimum. But we very rarely utilize that or --

MR. SAFLEY: You would normally have much more data than that is what you're saying?

MR. ESSIG: Yes.

MR. SAFLEY: What about with regard to temperature?

MR. ESSIG: Temperature, I'm not sure offhand. It might be different depending on the -- are you -- I'm assuming you're talking about the proposed --

MR. SAFLEY: And if I wasn't, I apologize. With regard to all of the proposed standards.

MR. ESSIG: I would have to take a look at that. I'm not sure offhand right now.

MR. SAFLEY: Okay. If the Agency had at its disposal or was presented with data other than what you've mentioned from an intake data from a facility or something else, would that go into the equation as well or would that be excluded for some reason?

MR. ESSIG: Generally we would accept any outside data, maybe not necessarily an intake, but if it's instream data, as long as that data is accompanied with a quality assurance program plan that spells out how the data is collected and how the data, the

water quality samples are analyzed. That data would be considered also.

MR. SAFLEY: Okay. I think then I can skip our Question No. 31, moving on to 32. I think that we've discussed the first part of that with regard to if testing determines Chicago Sanitary and Ship Canal is not in compliance with the standard, will segments of the Chicago Sanitary and Ship Canal be designated as noncompliant? I think, Mr. Essig, that's what you were talking about, if you got above those thresholds then that's when a designation would occur.

MR. ESSIG: Right.

MR. SAFLEY: Moving on to the next Question No. 32. How would the Agency determine the boundary of the segment determined -- designated as not in attainment?

MR. ESSIG: Segments have already been determined in the integrated report. So we would be utilizing those same segments unless -- with this new use designation, and I'm not sure if any of the segments might

have to be adjusted to accomplish those standards, might be, but generally we have a segment that's in the integrated report.

MR. SAFLEY: So assuming that a segment that's already been designated in the integrated report is within one proposed use, the Agency is not going to carve up that segment into smaller pieces for purposes of attainment or nonattainment. It's going to stick with those same segments that exist?

MR. ESSIG: Segments can change depending on -- We do a review of whether segments make sense in terms of variety of things like number of dischargers into the system, tributaries coming in, dams, other physical features. So it could happen. It doesn't happen a lot, but potentially it could happen.

MR. SAFLEY: Does that kind of assessment happen on any kind of scheduled basis or is it just as an issue comes up?

MR. ESSIG: Generally more of as an issue comes up, but it generally will happen within that every two years when we go

through the integrated report, we might make some adjustments to different segments depending on the situation.

MS. WILLIAMS: At this time maybe I think it might be logical. We provided a list in Exhibit 34 last time of all the segments as we break them out and apply this waterway. And it was identified, I think by Ms. Franzetti, that there was a page of that missing that identified one of the north shore channel segments. So maybe at this time we can enter that missing page.

MR. SAFLEY: I certainly have no objection. Thank you.

HEARING OFFICER TIPSORD: I've been handed what's Page 67 of a chart that starts North Fraction Run and ends Onion Creek. We'll mark that as Exhibit 45 if there's no objection. Seeing none, it's Exhibit 45.

MR. SAFLEY: Thank you. I think that the last portion of our Question 32 has been dealt with in other testimony. So moving on to our Question 33.

Did the Agency consider the

influence of natural weather events on the Chicago Sanitary and Ship Canal in developing the proposed dissolved oxygen standard for the Chicago Sanitary and Ship Canal?

MR. SMOGOR: Not directly, no. I'm not quite sure what you mean by natural weather events. I mean just rainfall and seasonal changes of temperature and that kind of thing?

MR. SAFLEY: Yes. I think that that's accurate, and the effect that rainfall or temperature would have on DO in this particular water body.

MR. SMOGOR: Not directly. In proposing the DO standards that we did propose, though, we did account for some of the irreversible impacts that are occurring in that system by proposing aquatic life use that we believe fits those irreversible impacts, and then using that use as the basis. We said what are the DO standards that would represent attainment of that use or allow attainment of that use.

MR. SAFLEY: Thank you. I apologize.

I was just crossing out Question 34 because we talked about that earlier.

Moving on to Question 35. If a combined sewer overflow or other weather event causes or contributes to a condition of noncompliance, and I should have stated in the Chicago Sanitary and Ship Canal with the DO standard, what steps does the Agency plan to take to remedy this situation?

MR. ESSIG: Probably if it was listed as impaired for DO and if CSOs, let's say, were listed as potential cause of that impairment, I would imagine that would then go toward a TMDL to try to rectify the situation. I don't know, Rob. Is there any other --

MR. SULSKI: Well, we anticipated or we identified DO as a stressor, and that's how the supplemental aeration flow augmentation scenario or options came about, so.

MR. SAFLEY: If I can ask a couple of follow-up questions: First of all, with regard to TMDLs and them being listed as

nonattainment, would it be correct to say that CSOs which are outside the control of any of the industrial dischargers to the Chicago Sanitary and Ship Canal, could result in the Chicago Sanitary and Ship Canal being designated as nonattainment for DO and those dischargers not being able to take advantage a mixing zone of that water body.

MS. WILLIAMS: Can we start the first part and then --

MR. SAFLEY: Sure. Could CSOs result in a designation of nonattainment in the Chicago Sanitary and Ship Canal, just CSOs for DO?

MR. ESSIG: That could happen.

MR. SAFLEY: Now, before we got to the point of nonattainment, if the Agency had not gotten three years of data, for example, yet, and had not been able to analyze that, how would a CSO that reduced DO levels in the water body affect the ability of a discharger to the water body to comply with the DO standard?

MR. TWAIT: For dissolved oxygen,

typically for municipal sources that have deoxygenating waste, if there's more than five to one dilution, we don't typically put in DO limit into their permit. If a DO limit was put in the effluent, it would be half the water quality standard.

MR. SAFLEY: Thank you. Moving on to our Questions 36 and 37 which have been taken care of.

Question 38, if the Chicago Sanitary and Ship Canal does not attain DO standard, and if the DO, and this should have stated in noncontact cooling water, is reduced due to the operation of the system, how is the decreased DO and the discharge regulated?

MR. TWAIT: According to what I can determine talking to the people in the permit section, a DO limit is usually only put into a permit for facilities that have deoxygenating waste such as BOD or ammonia. Does that answer your question?

MR. SAFLEY: I think it does in part. I would follow up with would it be correct to

state you didn't receive any indication from the permit section that they would intend to change that practice with regard in light of the new rules?

MR. TWAIT: No. These are -- when I was talking to them, I was talking about a common practice throughout the state. They don't normally put in DO limits.

MR. SAFLEY: Thank you. Well, then we move on to our Roman Numeral IV questions relating to temperature. And our Question No. 46 which is on my Page 16.

HEARING OFFICER TIPSORD: Page 15 on the prefiled.

MR. SAFLEY: I knew I was going to get off eventually.

I think we've -- Because of the way I expanded some of the earlier questioning, we've dealt with Question No. 46 and 47. With our Question No. 48, we discussed a little bit earlier whether the Agency considered the influence of weather events in developing the DO standard. If I can ask a parallel question here with regard

to temperature, did the Agency consider the influence of weather events in developing the proposed thermal standard with regard to the Chicago Sanitary and Ship Canal?

MR. TWAIT: Not directly, but by setting the nonsummer months as -- by setting the nonsummer month criteria as the background, it takes seasonal changes into account.

MR. SAFLEY: Mr. Twait, I want to follow up on an issue that you've just reminded me of with regard to background temperature. It's my understanding that the Agency set -- its proposed period average temperatures for the Chicago Sanitary and Ship Canal based on its -- based on data regarding temperature at the effluent of the Stickney Metropolitan Water Reclamation District plant as well as temperature measurements at Route 83 crossing over the Chicago Sanitary and Ship Canal; is that correct?

MR. TWAIT: Yes.

MR. SAFLEY: And at the last hearings,

we discussed the fact that the information or the data on those measurements that's provided in the record were averages over a period of six, five or six or seven years in both cases. Do you recall that discussion?

MR. TWAIT: Yes.

MR. SAFLEY: I just wanted to clarify and ask whether since that discussion or before the Agency has looked at any of that data either from the Stickney plant or at Route 83 on a year-by-year basis or a period-by-period basis during one calendar year as opposed to averages over a six-year period to see whether or not the temperatures recorded in an actual period would be in compliance on a period average basis with the agency's proposed standards?

MR. TWAIT: We did not look at the District's effluent data. When they submitted that data to us they compiled the data. We didn't get the individual data points, and I have looked year by year and period by period, and there are some instances where the period average would be

violated.

MR. SAFLEY: I'm sorry. Just to make sure I understand, you have looked year by year, period by period for Stickney or Route 83?

MR. TWAIT: Route 83.

MR. SAFLEY: At Route 83.

MS. WILLIAMS: I think this was data that we were asked for at the last hearing, so could we enter that now, if that's okay.

HEARING OFFICER TIPSORD: Yes.

MS. WILLIAMS: Maybe we should have Scott explain what it is to sort of get the foundation.

HEARING OFFICER TIPSORD: That's fine.

MS. WILLIAMS: But I'll hand you some CDs marked MWRDGC continuous DO and temperature data for select CAW stations.

Scott, please explain what these are.

MR. TWAIT: Yes. The CD has continuous temperature and DO data. And by continuous, the samples were taken once an hour, the Excel files located on the CD with

station names before -- with station names have data from August 1998 through December 2002. The Excel file, continuous DO temp data dot XLS has data for these stations from January 2003 through June 2007. This -- That file that I mentioned also has data from some other stations from August 1998 through June 2007.

HEARING OFFICER TIPSORD: If there's no objection, we'll mark that CD as Exhibit 46. Seeing none, it's marked as Exhibit 46.

MS. FRANZETTI: Could I just ask a quick question? I may have misheard at the very beginning. Is this the District's data?

MR. TWAIT: Yes.

MR. SAFLEY: So, Mr. Twait, we would be able to look at that data that's on there as you have done and on a period-by-period basis and make an assessment as to what -- how the temperatures compared to the Agency's proposed standards at Route 83; is that correct?

MR. TWAIT: Yes. All of the data is

there.

MR. SAFLEY: Okay. But the Agency, you stated earlier, does not have similar data for the Stickney effluent; is that correct?

MR. TWAIT: No, I do not.

MR. SAFLEY: Well, just to follow-up on that, and this leads into our Question No. 51 which I suspect is on Page 16. In light of the data, Mr. Twait, that you've seen at Route 83 and the fact that at least in some circumstances it shows noncompliance with the Agency's proposed period averages, does that mean that under the Agency's proposal no mixing zone would be possible or allowed for temperature of the Chicago Sanitary and Ship Canal?

MR. TWAIT: Well, past data -- this data that we have doesn't have any controls on any of the discharges. So to say that when certain facilities are controlled, there may not be violations. In some of the stations downstream of that I did not find any violations.

MR. SAFLEY: Okay. Well, then to elaborate on that a little more, would it be correct to state that the Agency does not view this data as a source that it would utilize to determine attainment or nonattainment for thermal in the Chicago Sanitary and Ship Canal?

MS. WILLIAMS: Are you asking him after the proposal is final?

MR. SAFLEY: Yes, I think so.

MR. ESSIG: Could you repeat the question?

MR. SAFLEY: Sure, sure. We've identified the set of data that the Agency has, and I think what I'm trying to ask is does the Agency intend to use that data to make a decision on whether or not the Chicago -- or at least the segment in which -- the segment of the Chicago Sanitary Ship Canal in which that data was collected is or is not an attainment, again, with the proposed standards, assuming they're passed as proposed, or would the Agency be looking at something else?

MR. ESSIG: No. The Agency would probably look at that as long as it is submitted with the quality assurance program.

MR. SAFLEY: Okay. Well, I was just trying to understand how that related to Mr. Twait's response with regard to controls, and I -- what I heard you say, Mr. Twait, was that that data was generated during a time period in which the controls or dischargers were not controlling for thermal in the same way they might after the proposed rules are finalized, because they're operating under different standards and that that change in control might affect the agency's evaluation of the data and decision as to whether there's attainment; is that correct?

MR. TWAIT: Yes. And I think there's a difference between measuring attainment in the past three years versus -- which -- there's a difference between measuring attainment in the last three years and determining whether mixing zones are going to be available in the future. And that would, based on expected controls that are put into

place, and I don't know how -- I don't know exactly how this rulemaking will come out, of course, and what timelines will be, but that's something that the Agency will have to consider at that time.

MR. SAFLEY: Mr. Essig, did you want to elaborate?

MR. ESSIG: If the thermal standards or DO standards are passed, we would only be looking at data over a three-year period of when those standards went into effect. We wouldn't be going back multiple years prior to that.

MR. SAFLEY: Sure. Susan, please.

MS. FRANZETTI: Thanks, Tom. I'm trying to explain -- I'm trying to understand how the Agency is making some of these projections or estimates regarding whether or not people will get mixing zones or not based on the status. So bear with me, and hopefully by telling you what my issue is, you'll understand the questions a little better, the purposes of the questions.

With respect to the testimony

you've given today on this topic, are you -- What are you assuming with respect to what the Midwest Gen plants will be doing with respect to their thermal contributions to, and let's start with the Chicago Sanitary and Ship Canal. Are you assuming, for example, are you assuming we will need and get a 26 acre mixing zone?

MR. TWAIT: Yes. I would think that as the rules are proposed that you would -- that those facilities would have to meet water quality standards outside of --

MS. FRANZETTI: But you are assuming, for purposes of your analysis, that each Midwest Gen plant, Fiske, Crawford, Will County, would get the full 26 acres allowed under the mixing zone regulation?

MR. TWAIT: As long as that 26 acres did not conflict with one of the downstream sources which I --

MS. FRANZETTI: That's actually what I'm wondering about is -- All right. So part of the Agency's determination as to what size mixing zone will be available to a Midwest

Generation plant may depend on what a discharger downstream means? How do you -- I guess let me ask the general question: How do you deal with mixing zones when you've got multiple dischargers and they're all having to comply basically the same time with a new standard like the proposed thermal standards?

MR. TWAIT: I've never dealt with this issue specifically yet, so I'm not sure that I know the answer. But I think that as long as the mixing zones do not --

MS. FRANZETTI: Overlap.

MR. TWAIT: -- overlap, then they will be afforded to each particular district.

MS. FRANZETTI: Okay. But sitting here today, am I right that the Agency really hasn't had either the opportunity or even if the opportunity, not sufficient data to determine yet whether any of the dischargers to the Chicago Sanitary and Ship Canal may be asking for mixing zones that to some extent or another overlap?

MR. TWAIT: That would be correct.

MS. FRANZETTI: Okay. That's an

unknown as we sit here today.

If that occurs, will you then -- Has there been any discussion within the Agency as to how you might go about trying to decide equitably or within, of course, the bounds of the law, how you will address a situation of multiple dischargers all needing a mixing zone, but there not being enough area in the stream for each of them to get what they need.

MR. TWAIT: The only instance I can think of that happening was to a discharger that had a facility on -- They had -- it was one facility that had their east plant and their south plant right next to each other and they conflicted. And we were able to work out the amount of mixing that they needed for copper and gave most of the allocation to one of the plants. I don't know how to do it when those aren't --

MS. FRANZETTI: Owned by the same?

MR. TWAIT: Right.

MS. FRANZETTI: And you'll also run into having to make sure that in resolving

the allocation of mixing zone areas, as you, I think you were starting to refer to earlier, you also need to make sure that in the process there's still a zone of passage; and, again, all of the other mixing zone regulatory requirements that have to be satisfied to get the requested mixing zone, correct?

MR. TWAIT: Yes.

MS. FRANZETTI: So this is a fairly -- This could be a fairly complicated undertaking for the Agency, right?

MR. TWAIT: Most definitely.

MS. FRANZETTI: And as you sit here today, you can't really tell any of us, I guess, for sure we are going to get the full, maximum I'll call it, 26 acre mixing zone under these proposed thermal standards?

MR. TWAIT: That would be accurate.

MS. FRANZETTI: Okay. Thanks.

HEARING OFFICER TIPSORD: Mr. Safley?

MR. SAFLEY: Thank you. Moving back to our Question 51, and I think we've just, we've talked about the issue of mixing zones.

And going to the second bullet point here under 51. If the Chicago Sanitary and Ship Canal were designated as not an attainment for temperature, does the Agency know how many users of cooling water would being affected in this circumstance?

MR. TWAIT: No.

MR. SAFLEY: Does the Agency know any or have any information on what number of any other dischargers, whether it be cooling water or some other wastewater source would be affected by such a designation?

MS. WILLIAMS: You still mean thermal, though?

MR. SAFLEY: Yes. I mean thermal, but more broadly than cooling water, does the Agency know whether there are facilities that discharge to the Chicago Sanitary and Ship Canal, a wastewater source other than cooling water that would be affected by designation of nonattainment for thermal?

MR. TWAIT: I do not know of any. I misspoke. I think, I don't know if it was Citgo or one of those facilities, they

mentioned that they have to heat up their water to go to get ammonia reduction, so that would be something other than cooling water.

MR. SAFLEY: And I'll skip the next two bullet points. The fifth bullet point, when we spoke in previous hearings, my understanding that the Agency had not considered cost of construction installation, operation, and maintenance of technology to address thermal issues at any of the facilities that discharge to Chicago Sanitary and Ship Canal other than, I think earlier, Mr. Twait, you mentioned that there was some information given by MWRD and Midwest Generation. Is that accurate that the Agency has not considered those kind of costs with regard to any other facilities on the Chicago Sanitary and Ship Canal?

MR. TWAIT: We have not considered that specifically for the Chicago Sanitary and Ship Canal. However, based upon facilities putting in cooling towers throughout the state, we think it's economically reasonable and technically

feasible.

MR. SAFLEY: Moving on to our next bullet point. Has the Agency considered how much energy these technologies; that is, such as cooling towers, consume?

MR. TWAIT: No.

MR. SAFLEY: So would it be -- moving on to the next question, would it be accurate to state that the Agency does not know how much energy would be used to operate those technologies?

MR. TWAIT: No.

MR. SAFLEY: And then our last bullet point, how much CO2 would be emitted due to increased energy consumption due to the operation of cooling towers?

MR. TWAIT: No, I do not know that.

MR. SAFLEY: The follow-up question to that, has the agency considered whether water loss might occur due to evaporation through cooling towers, and how that might affect water quantity needs for the region in general or downstream users waterway?

MR. TWAIT: The Agency knows that

there's going to be water loss through evaporation; but, no, we have not considered how that will affect downstream users.

MR. SAFLEY: Okay. Thank you. Our Questions 52, 53, and 54 were answered previously. So moving on to our Roman Numeral V, questions relating to cooling towers.

And our Question 55: The CAWS UAA notes that the water in the Chicago Sanitary and Ship Canal is composed mainly of effluent from the Metropolitan Water Reclamation District's Stickney plant and upstream flow from the Chicago River System. This portion of the Chicago Sanitary and Ship Canal is also subject to human manipulation that impacts flow, CSO events, and other artificial effects that can impart odorous properties to the water. It is reasonable to be concerned that use of water from the Chicago Sanitary and Ship Canal and cooling tower may reduce odors. If the use of Chicago Sanitary and Ship Canal water in a cooling tower releases odors, how will the

Agency address any odor complaints that might result?

MR. SULSKI: Well, I hadn't considered this because we didn't receive any data on it, on odors associated with cooling towers or even cascading or aerating waterway water. We have SEPA stations all along the Cal-Sag Channel where there are CSOs, there's Calumet wastewater treatment plants. And I cannot recall an odor complaint associated with those facilities. The only odors that I'm aware of are from, directly from sewers, not cascading waters. The other odors I'm aware of occur periodically during the hot season in stagnant flow reaches including the south fork and the upper north shore channel where you end up with an anaerobic condition and bulking sediments and sulfite odors. But in the main stem of the waterways including the Sanitary and Ship Canal, I can't recall in 25 years ever getting an odor complaint.

MR. SAFLEY: And, Mr. Sulski, just to follow-up on that, when you refer to the Cal-Sag Channel, is it correct that that does

not have the same quantity of effluent from an MWRD discharge that the Chicago Sanitary and Ship Canal would have?

MR. SULSKI: Amount? Quantity?

MR. SAFLEY: Yes. Well, or percentage. You can address it either way. Is that -- Would you consider the Cal-Sag Channel to be -- as effluent-dominated as the Chicago Sanitary and Ship Canal --

MR. SULSKI: Yes.

MR. SAFLEY: But am I correct that when you were discussing odor complaints from the water body itself, and what I meant to address in this question was odor complaints as a result of the use of cooling towers which is drawing water from those water bodies. So I just want to make sure you understood the difference with my question.

MR. SULSKI: Right. Well, a SEPA station is a side stream elevated pool aeration station. They draw a portion of the water out of the river, they cascade it, just like cooling would, you know, do it. And then they put it back into the waterway. So

it is like a cooling system.

MR. SAFLEY: And I have to admit, I'm not familiar with the SIPA station, so --

MR. SULSKI: It draws water out of the waterway, cascades it, puts it back in the waterway.

MR. SAFLEY: But is it heating or is it -- Do you have the same heat issues that you would and evaporation issues because of heat that you would with the cooling tower? I mean is the SIPA station designed like a cooling tower specifically to release heat from the water, and would that affect the potential for odor complaints from a SIPA station as opposed to cooling tower?

MR. TWAIT: The SIPA stations would not have the same temperature.

MS. WILHITE: Maybe I can augment that answer just a little bit.

MR. SAFLEY: Sure.

MS. WILHITE: I think that the answer to the question is that we would address odors from this type of facility the way the Agency addresses odors from other types of

facilities. You look at what -- you do an investigation, you find out what's potentially causing the problem, you work with the operator to see if they're doing whatever is possible to minimize the odors; and our understanding is there are many things you can do to minimize odors from a cooling tower.

MR. SAFLEY: Thank you, Miss Wilhite. That leads into my next questions.

HEARING OFFICER TIPSORD: Excuse me before you go. Mr. Ettinger?

MR. ETTINGER: I just wanted to ask whether there is a cooling tower on some of the Joliet units in the Upper Dresden Pool and I was just going to ask whether you have any odor complaints regard -- relating to those cooling towers at the Midwest Generating in Joliet.

MS. FRANZETTI: Marsha, I'd like to take that. No.

MS. WILHITE: And, Albert, I'm not certain because kind of the --

MR. ETTINGER: I like Franzetti's

answer.

MS. FRANZETTI: I thought you would. I thought it was something I can agree on.

MR. SULSKI: I'm also aware that Corn Products has some cooling towers.

MS. FRANZETTI: All kidding aside, Albert, the one thing you have to consider is those, and I think this is different from what Mr. Safley is asking, we're pretty far down from an effluent discharge at Upper Dresden Pool. So I'm not sure it's the same thing right next to Stickney or something.

MR. ETTINGER: I'm sure you're minding your towers much better, so.

MR. SAFLEY: You know --

MR. SULSKI: I'm aware that Corn Products has cooling towers as well because I visited the facility.

MR. SAFLEY: But they don't use water from the Chicago Sanitary and Ship Canal for that in those cooling towers. And I want to make sure you understand. These are serious questions, and I'm not real familiar with Joliet, the Joliet facility for Midwest Gen.

I don't know if it's in the same kind of community and residential area that Corn Products is in. And Corn Products is particularly concerned with, you know, relations with its neighbors and residential areas. So that's the reason for these questions. This isn't just trying to make something up here.

MR. SULSKI: I understand. I have to go back to my initial answer. I've never heard of -- I've never received a complaint. We'd have to check with our air people. They're the ones that usually get those complaints. The only thing I can tell you is the only odors I know that are associated with the Sanitary and Ship Canal are the waterways in general, not even the Sanitary and Ship Canal, are those stagnant portions of the waterway that end up going anaerobe, and that is the south fork and the upper north shore channel, none outside of that.

MR. SAFLEY: Okay. Thank you. Moving to our first bullet point. And, Miss Wilhite, again, I think you were leading

into these bullet points here. The question as written is if such complaints were to occur, would the discharger be able to continue to use its cooling tower?

MS. WILHITE: Yes.

MR. SAFLEY: But, Miss Wilhite, you mentioned that the complaints of odor might result in an Agency investigation and consultation with the discharger about the use of the cooling towers; is that correct?

MS. WILHITE: Yes.

MR. SAFLEY: And you mentioned also steps that a discharger operating such a cooling tower might be able to take to address odor issues. And I guess, you know, that moves on to our next bullet point. I'd like to ask you to elaborate a little bit on what steps the Agency is aware of that could be undertaken.

MS. WILHITE: And I'm prefacing my comments by saying that we consulted with the Bureau of Air for these answers, since this is starting to get out of our area of routine understanding. And so you'll forgive me if

you are provided with a disappointing level of follow-up information.

MR. SAFLEY: That's fine.

MS. WILHITE: But our understanding is that there are pretty standard treatment methodologies for reducing the cause of odors which tend to be biological.

MR. SAFLEY: And there was some discussion earlier about biofouling of cooling towers and the potential need for treatment of chemicals that would be used to address that biofouling. Does the Agency have any information on whether or not those, the kind of chemical treatments that you're talking about, would result in the need for additional treatment of the wastewater discharge to account for those kind of chemicals that were used to address odor issues and maybe biofouling and odor issues would have the same kind of treatment. I don't know.

MR. TWAIT: Our group will look at what biosites that you're using. We have a person that will look at the quantity and

what is in the make-up of the product that you're using. If your use would violate the water quality standard, then we'll let you know that and point you in a direction of looking for something different. And, you know, if you use chlorine, you might be asked to dechlorinate before discharge.

MS. DIERS: Scott, when you say our group, who are you referring to since we've been talking about air and water?

MR. TWAIT: When I said my group, I meant the water quality section of the Bureau of Water.

MS. FRANZETTI: Tom, if I may.

MR. SAFLEY: Sure. Oh, please. Thank you.

MS. FRANZETTI: Mr. Twait, it sounded like from your answer that to the extent that there may be concerns about using effluent-dominated water that's not been subject to disinfection like there is in the Chicago Sanitary and Ship Canal, it may be necessary for the proper operation and cooling towers to first chlorinate and then

dechlorinate that water before you run it up through a cooling tower just to address concerns, may not be odorous, but I take it there could be some emission of bacteria and pathogens that are in that water because of the lack of disinfection that may need to be addressed with the cooling tower's operation and design.

MR. TWAIT: I don't know that -- I mean you're right. That could be an issue, but I don't know of that as being an issue.

MS. FRANZETTI: Okay.

MR. SAFLEY: Moving on to our Question 56. Since odors may result from VOCs, that's volatile organic compounds or HAPS, hazardous air pollutants, how will emissions from a cooling tower be handled? And I know, Miss Wilhite, you said that you consulted with the Bureau of Air to some extent.

MS. WILHITE: And I'm going to closely consult my notes here. Basically they would, those types of emissions, the volatile organic chemicals or HAPs, whichever, would

have to be permitted because they're going to be potentially stripped from the water during the cooling process. They'll have to be quantified in a manner that provides reasonable data on the magnitude of those emissions just like any other type of situation that's an air source. So what else can I tell you?

MR. SAFLEY: No. I think that answers our Question 56. Question 57, and, again, I -- I don't want to waste time if the Agency has not had the kind of consultation that would be necessary with the Bureau of Air to respond to this question. But if you have, I'll go ahead and ask it, because we discussed this a little bit last time, and the Agency's answer was that the Agency did not know about particular emissions from cooling towers but would see what it could find out. And have you had that consultation?

MS. WILHITE: Yes.

MR. SAFLEY: Then I'll go ahead. I don't want to waste time.

Then going on with this question: Since the region, the Chicago area region is nonattainment for PM2.5, particulate matter 2.5, will the Agency permit the construction of cooling towers which increase emissions of PM 2.5?

MS. WILHITE: You're on sub A?

MR. SAFLEY: Yeah, under Question 57.

MS. WILHITE: Yeah. I think potentially. The answer is potentially given what the analysis shows.

MR. SAFLEY: So the Bureau of Air didn't -- was not able to provide you any kind of blanket yes or no?

MS. WILHITE: They didn't address that directly, but they've got very detailed answers for the rest of the stuff.

MR. SAFLEY: That's fine. Then moving on to the first bullet point. How long will this permitting take the Agency if it requires a state construction permit?

MS. WILHITE: Bureau of Air will issue state construction permits within the statutory deadlines if the applications show

compliance with applicable air pollution control requirements. Permitting will be expedited as possible as the cooling towers are needed to comply with water quality standards. And the estimate I have here is 90 days or 180 days if you have post comments.

MR. SAFLEY: Thank you. The next bullet point: If a cooling tower is subject to PSD, or prevention of significant deterioration, how long will permitting take?

MS. WILHITE: Generally they say given the complexity of PSD, it takes about nine months. However, the respondents think it's unlikely that PSD permitting will need to be triggered because plants with large thermal discharges have emissions of particulate at present such that decreases in emissions could be used to net out a PSD review; notably, Corn Products, for example, installed a new coal-fire boiler with a decrease in particulate matter emissions of several hundred tons due to the shut-down of existing boilers. This decrease should be

more than adequate to net out any cooling tower required by Corn Products to meet temperature standards.

Midwest Generation, for another example, is committed to shutting down two units at its Will County station which should also provide emission decreases that are sufficient for netting out and cooling towers from the remaining two units. Bet you can't guess who wrote the answers?

MR. SAFLEY: I can guess. I'll skip -- Well, unless you tell me that Bureau of Air gave you information on how long the construction of cooling towers is likely to take, I'll skip that next question.

MS. WILHITE: I do have an answer for you.

MR. SAFLEY: Sure. Go ahead.

MS. WILHITE: Construction of a cooling tower at a power plant major industrial facility is a significant undertaking. At a minimum would expect the planning, design, procurement and construction to take a minimum of 12 to 18

months.

MR. SAFLEY: Next bullet point: If the permit is appealed, how will the Agency address the permitee's inability to comply with the Agency's proposed thermal standard here during the pendency of the appeal process?

MS. WILHITE: I don't believe that Bureau of Water has had that experience previously, but my -- We would work any discretion available to us to work through that process.

MR. ANDES: Can I --

MR. SAFLEY: Of course.

MR. ANDES: Are you talking about enforcement discretion?

MS. WILHITE: For example, that might be a possibility.

MR. ANDES: What would be the other possibility?

MS. WILHITE: I'm not certain, Fred. Because I've not experienced this before, I'm not certain what discretion, but whatever discretion we have available to us.

Enforcement would be an important example.

MR. ETTINGER: Appealed by who? By the permit applicant or by someone else? I don't quite understand.

MS. WILHITE: Are you directing that to me?

MR. ETTINGER: I guess I'm directing it to Safley. Who's he asking it about? Appeal by who?

MR. SAFLEY: Appeal --

AUDIENCE MEMBER: By folks who customarily appeal permits.

MR. ETTINGER: I don't know that there's a big custom going on there. If the permit is granted, generally we have to move for stay, and you can go ahead and discharge under your permit.

MS. WILLIAMS: You're talking about a water appeal --

MR. ETTINGER: If it's a water permit.

MS. WILLIAMS: They're asking about the air.

MR. SAFLEY: I was asking about the air permit.

Moving on to our next bullet point: What is the total PM 2.5 that would be emitted from cooling towers used to comply with the proposed rule?

MS. WILHITE: An exact estimate is difficult given the absence of relevant data for design and operation of the cooling towers, but the types of factors would be how much cooling is needed, for example, how many million gallons per day, what the change in temperature, et cetera, what is the TDS content of the incoming cooling water, what is the TDS content that would be allowed in discharge? What is the required efficiency of the different -- the drift eliminators in the new cooling tower. So without those data you would imagine that the PM emissions in the cooling tower at the four power plants of Corn Products will be as little as five tons per year or as much as 50 to 100 tons per year or more.

MR. SAFLEY: We are comfortable that we've addressed the last two bullet points there.

Moving on to our Question 58, the operation of cooling towers consumes large amounts of energy. Has the Agency considered the total energy that will be used by dischargers to operate cooling towers?

MS. WILLIAMS: Can you -- I mean I guess I'm not aware of that presumption in 58, operation of cooling -- What is the large amount of energy?

MR. SAFLEY: Well --

MS. WILLIAMS: We've already testified we don't know.

MR. SAFLEY: Okay. Well, and, again, I didn't know to what extent the consultation with the Bureau of Air might have updated that. If the Agency's answer is it doesn't know how much energy would be used by the cooling towers, that's fine. But I just wanted to make sure there hadn't been a change.

MR. TWAIT: That would be the answer.

MR. SAFLEY: Okay. We'll skip 59 in light of that.

Our Question 60: Cooling

towers must be cleaned from time to time. What is the nature of the sediment that will be present in cooling towers?

MS. WILHITE: I'll take that one, because it turns out I have friends in the Bureau of Land as well. Waste management is handled through the Bureau of Land at our agency.

HEARING OFFICER TIPSORD: You need to speak up.

MS. WILHITE: I'm sorry. I fade away. I said waste management is handled by the Bureau of Land in our agency. But generally what's in the sediment is going to be dependent upon what's in the intake water, and any kind of treatment that's provided as we've discussed for antifouling of the cooling tower.

MR. SAFLEY: Does the Agency have any information, given its knowledge of the water that's present in the Chicago Sanitary and Ship Canal and its knowledge of generally what kind of treatment might take place, what you might expect to see in the sediment even

if you can't exactly quantify it?

MS. WILHITE: We haven't done that analysis.

MR. SAFLEY: That may answer the next couple of questions, but I'll go ahead and ask. Will the sediment be considered a hazardous waste?

MS. WILHITE: Well, the first step, according to my source, is that you do a solid waste determination, and these are site specific as part of the process to evaluate a waste at a particular site. The generator would be required to determine if the material was a solid waste, and then if a solid waste, determine if the solid waste was hazardous by definition, and does the hazardous -- does the waste exhibit characteristic of a hazardous waste.

The comment we got from the Bureau of Land was that they would not expect the sediment to be hazardous, but it is the generator's responsibility to determine what they have. And each site must be evaluated based on the specifics and their selection.

MR. SAFLEY: Thank you. The next question, would the sediment be concerned a special waste?

MS. WILHITE: Sediment from a cooling tower would generally be considered a special waste. If the waste could qualify as a nonspecial waste under the self-certification process, then it could be considered garbage and disposed of in the dumpster with other garbage.

MR. SAFLEY: Thank you. The next question, what is the cost to a discharger in terms of complying with the hazardous waste or a special waste regulation in order to manage cooling tower sediment.

MS. WILHITE: If the material was a nonhazardous special waste, it could be disposed of as a municipal solid waste landfill that was permitted to take special waste. It could also potentially be self-certified a nonspecial waste and then disposed of just as any other garbage. The cost would be similar to many other garbage in that case except there would be a

requirement to manifest the waste in the landfill unless there was a self-certification indicating the waste was nonspecial. If, for some reason, the material turned out to be hazardous, the facility would be subject to all the RCRA regulations. I can't provide any cost for management or disposal, but the cost would be much higher than if it were nonspecial waste. The treatment, storage, transportation, manifesting, and disposal in a hazardous waste landfill would all be regulated. And depending upon how the waste was handled at the site, the facility may also be required to obtain a RCRA permit.

MR. SAFLEY: In light of that response, Miss Wilhite, would it be correct to state that the Agency has not undergone any kind of calculation of the quantity of -- cooling tower sediment specs would be generated as a result of compliance with the proposed rules and then the cost, the corresponding costs to deal with --

MS. WILHITE: We have not done that

analysis.

MR. SAFLEY: Thank you. The last question here, did the Agency consider the impact of the proposed rules in terms of the creation of additional hazardous waste or special waste due to the construction and operation of the cooling towers?

MS. WILHITE: No.

MR. SAFLEY: Thank you. We're just trying to look through these and see if things have already been answered.

Question No. 61 begins with some question about chemicals that might be necessary for the operation of the cooling tower, and we've talked about that to some extent already. To try to shorten this, would the addition of chemicals to a facility wastewater that was necessary as a result of the operation of the cooling tower be an issue that had to be addressed in the facilities' NPDES permit assuming it was a TDS discharger?

MR. TWAIT: We would do an anti-degradation for the additional

chemicals.

MR. SAFLEY: Okay. Can the Agency provide any information on -- any information on how long it would take to conduct that analysis, and, if necessary, obtain a revised NPDES permit from the Agency?

MR. TWAIT: I'm reluctant to give you an idea of how long it would take, but the anti-degradation portion of that, usually those are pretty simple. And so then it just basically will depend upon how busy permits is and how high up on its priority list it is. I won't even hazard a guess.

MR. SAFLEY: Moving on to our Question No. 62, how will the increased concentration of existing pollutants in a discharge as a result of the cooling tower process be governed under an NPDES permit?

MR. TWAIT: I believe this would go back to background concentrations under 304.103, where if the parameter you're taking out of the stream is concentrated due to evaporation and then discharge, there would not be additional regulation. The discharger

may have to measure and report the loading coming in and going out, but treatment wouldn't be necessary if it was just truly a background concentration.

MR. SAFLEY: We'll move on to our Question 64. New sewer connections, and this should have said to MWRD, require engineering and District and Agency approval prior to and upon completion. Has the timing of such a process been considered by the Agency in conjunction with this rulemaking?

MR. SULSKI: These are state permit matters, and I don't know how long it will take to design and construct. But for getting the permit, for state permits we have a statutory deadline, you know, three months. So assuming that the project is permittable, it's a fairly relatively quick turn-around.

MR. SAFLEY: Does the Agency have any information on the cost to construct, operate, or maintain such sewer connections?

MS. WILLIAMS: When you say such sewer connections, do you mean any sewer connections between the district or --

MR. SAFLEY: To MWRD that might be necessary as a result of -- I guess I should -- the installation of equipment to comply with the Agency's proposed rules.

MR. SULSKI: I'm sorry? The door slammed.

MR. SAFLEY: With the Agency's proposed rules. For example, if the facility, and I'm not sure what piece of equipment to mention, but facility needs a new sewer connection to MWRD because of an increase in wastewater flow or a change in wastewater flow resulting from steps it has taken to comply with the agency's proposed standards. Has the Agency thought at all about the cost to construct, operate, or maintain those kind of sewer connections?

MR. SULSKI: I didn't know that it was a very significant factor to really consider.

MR. SAFLEY: So there wouldn't be -- The last question here, what is the impact on the District of receiving additional flow return from the Chicago Sanitary and Ship Canal. Has the Agency considered that issue?

MR. TWAIT: Could I ask what quantity of flow and -- what flow are we talking about? Is this related to Question No. 63?

MR. SAFLEY: Well, and I think that it is, and maybe I should not have skipped over that. If you've got a situation where you've got the cooling tower blow down and you can't discharge it back into Chicago Sanitary and Ship Canal, is MWRD able to accept that? And that leads into these questions here. Has the Agency considered the impact of that kind of discharge to MWRD in the rulemaking?

MR. SULSKI: Well, the district accepts indirect discharges of industrial waste, but I don't know what flow, how much, how often you would have to blow it down. And I understand that Corn Products has a very large flow already to the District.

MR. SAFLEY: It does. Okay. That's fine. Thank you. I think that adequately addresses.

Moving on to our Question No. 65. Has the Agency evaluated unintended consequences of this proposal? For example,

has the Agency considered the potential increased use of Lake Michigan water to cool a discharge as a measure of compliance?

MS. WILLIAMS: I think I have to say that we couldn't possibly have evaluated any unintended consequences --

MR. SAFLEY: That's fair. Maybe I should have written the question a little better. That's true. Well, what someone might consider an unintended consequence. Skip my first question. That's a fair point.

Moving on to the second question, has the Agency considered the potential increased use of Lake Michigan water to cool a discharger as a measure of compliance?

MR. SULSKI: I have to read it again. I don't quite understand your question.

MR. SAFLEY: I think what the question is going for, is has the Agency considered that a discharger might utilize other sources of water, be it Lake Michigan or the next question here use of groundwater, as a result of this rule, and does that result in impacts -- has the Agency taken into account

any impacts that might result from that use of another source of water for cooling purposes?

MS. WILLIAMS: Cooling the stream or cooling your discharge?

MR. SAFLEY: I think either --

MR. SULSKI: Impacts on what? Just any impacts or?

MR. SAFLEY: Well, water quantity issues would be an example. Obviously water quantity is a big issue in the region, the Chicago region right now. If a discharger had a well and decided to start drawing water from that well as opposed to taking water from the Chicago Sanitary and Ship Canal or another water body, has the Agency considered those kind of things occurring or has that just been --

MR. SULSKI: You mean the cost to you to do that or --

MR. SAFLEY: No. I mean the environmental cost, the impacts of potentially shifting someone to another source of water.

MR. TWAIT: I think the answer to both of those questions is no, the Agency didn't consider it; however, I'll also mention that increased use of Lake Michigan water probably will not happen because of current restrictions on the amount of Lake Michigan water that Chicago can use and divert.

MR. SAFLEY: Our Question No. 66 -- Thank you, Mr. Twait. Question No. 66 was answered in response to a previous question.

The last Question 67, the Agency recognizes that the existing history of sediment pollution in the CAWS and Lower Des Plaines River will make this; that is, Section 302.403, unnatural sludge standard nearly impossible to attain and that's in the statement of reasons at Page 55. Has the Agency considered whether the construction of cooling towers, which may be necessary to comply with the proposed standards, will aggravate the unnatural sludge problem in the CAWS and the Lower Des Plaines River?

MS. WILLIAMS: So does this question refer to the actual process of building them?

MR. SAFLEY: No. The use -- the use of cooling towers.

MS. WILLIAMS: The use of cooling towers.

MR. SULSKI: Are you saying that you're going to put out more sludge through cooling towers?

MR. SAFLEY: I'm not saying Corn Products is. I'm asking has the Agency considered whether or not the use of cooling towers may result in the discharge of more sludge and aggravate the sludge problems in the waterways.

MR. SULSKI: I don't --

MS. WILLIAMS: Can you explain how?

MR. SAFLEY: I'm not engineer enough to be able to do that. If the answer is --

MR. SULSKI: I don't know of any aggravation that would be caused. You know, if there is some, I'd like to hear about it.

MR. SAFLEY: That's fine. That concludes our prefiled questions.

HEARING OFFICER TIPSORD: Let's go off the record for just a second.

(Off the record.)

(Short break taken.)

HEARING OFFICER TIPSORD: ExxonMobil. I think we'll start with you, if that's okay.

MR. ANDES: Thank you. Fred Andes, Metropolitan Water Reclamation District. I'm going to focus on questions that we skipped over previously because they were specific questions and some follow-ups on those. Before I do, let me ask two questions that follow-up directly on issues that were raised earlier today. One was on DO. Sounds like the cost to meet the DO standards were looked at, correct me if I'm wrong, on the north branch and on the south fork of the south branch, not on the Chicago Sanitary and Ship Canal or the Cal-Sag Channel. Am I right?

MR. SULSKI: Correct.

MR. ANDES: And is there a reason for that in terms of now looking at what would need to be done to attain on those other water bodies is the DO?

MR. SULSKI: In my recollection of the data, the Sanitary and Ship Canal, except for

perhaps around where the south fork empties into it and maybe a little bit downstream would not be an issue if we took care of the DO problems in the south fork and then through the south branch and the north branch and the north shore channel areas. The modeling answer to that was still outstanding because of an integrated approach between supplemental aeration, flow augmentation that needed to be completed through modeling.

MR. ANDES: Okay. Based on the data that you have, let's stay with the Sanitary and Ship Canal for a minute. Has that been attaining the DO standard on -- would that -- Does the data that you have show that it would attain the proposed DO standards on a consistent basis?

MR. SMOGOR: There was no direct comparison to the standard that was proposed, because I think the analysis wasprior to that.

MR. SULSKI: The analysis was against general use standards, and there was an indication that there would be some

violations of general use standards. That's what the CAWS contractor did.

MR. ANDES: So they didn't compare to the new proposed standards?

MR. SULSKI: Correct.

MR. ANDES: And that would be the same for the Cal-Sag Channel?

MR. SULSKI: Correct. They did two comparisons: They did a comparison against secondary contact standards and general use standards.

MS. WILLIAMS: And I'd like to clarify also when they do -- when they say general use, I am quite sure, and correct me, Roy, if I'm wrong, that they compared not to the general use standard that has just been adopted by the board, but the one that was in effect at that time, right?

MR. SMOGOR: Correct.

MR. ANDES: Which is different than what's being proposed to apply to those water bodies now.

MS. WILLIAMS: Right. Which one is different? General use -- the old general

use. They both are different, but.

MR. ANDES: And these are more restrictive standards.

MR. SMOGOR: Which are more restrictive?

MR. ANDES: Stop for a minute. The key point is the Agency has not assessed what the cost would be to comply on Cal-Sag Channel and the Sanitary Ship Canal with the new proposed standards of DO.

MR. SULSKI: Correct.

MR. ANDES: In terms of temperature --

HEARING OFFICER TIPSORD: Mr. Harley has a follow-up.

MR. HARLEY: Keith Harley, Chicago Legal Clinic. Mr. Andes asked you about DO conditions in the Cal-Sag Channel. Could you comment on DO conditions, if you know, in the Calumet River, the Little Calumet River, and the Grand Calumet River.

MR. SULSKI: I have to look in the CAWS report. What the contractor did is -- that would be CDM. What CDM did was actually a tiered evaluation. They compared or they

looked at how many -- what the percent compliance would be with meeting a six milligram per liter level, a five milligram per liter level, and a three milligram per liter level. And on Page 4-87 of Attachment B, they summarized that data and indicate in that summary that the Calumet River and Lake Calumet reaches would most of the time meet the six milligram per liter level. They indicate that as you get into the little Calumet system, approximately half the times you would need a six milligram per liter, about a quarter to a third of the time you couldn't meet a five milligram per liter level, about a fifth of the time you couldn't meet a four milligram per liter level. I'm sorry. That's the Grand Calumet River. The Little Calumet River starting at six going down to five going down to four. It is around 10 percent you couldn't meet the 6, around 5 percent of the time you couldn't meet the 5 milligram per liter, and around 1 percent of the time you couldn't meet a four milligram per liter level. And then,

you know, it's shown in the table. If you want me to go on, I can --

MR. HARLEY: No, no. That's fine. Thank you.

MR. ANDES: I guess what I'm -- so I guess what I'm trying to understand is the logic in terms of is there a sense of, okay, it wouldn't meet -- a certain water body wouldn't meet standards a certain percent of the time unless we do "X," we're going to do "X," it's going to cost "X" amount of money, and it's going to lead to attainment 100 percent of the time, right?

MS. WILLIAMS: Is that a question? I didn't hear the question in that.

MR. ANDES: Where is that analysis or to what extent is that analysis there?

MR. SULSKI: There were two analyses done by the District and presented to the SAC Group. One of the analysis was what can we get with flow augmentation, and that wasn't sufficient in itself. The other analysis is what can we get with stream aeration, that wasn't sufficient in itself. We all

understood early on that you needed a combination, you needed to keep stagnant areas moving in addition to air. So at that point the SAC meetings were over and the district was prepared to do more modeling to look at an integrated approach. Although they did provide cost figures for each of the individual two approaches that I talked to you, I haven't seen any cost figures on the integrated approach.

MR. ANDES: Right. I'm not really asking what the District is doing. The question is what is in the Agency records document that certain measures are going to lead to attainment of the standards throughout the system 100 percent of the time, and it sounds like that's not there. That's there as to certain areas between north branch and south, over to the south branch, but not as to other parts of the system.

MR. SULSKI: And we have not evaluated compliance against the proposed standards. So that would have to be a whole evaluation

which Howard would get involved in.

MR. ANDES: Okay. Let me shift my other question. We may come back to that later.

On temperature, and this really takes off from questions Mr. Safley was raising about the District's data. And I think in using the District's effluent data to develop, to use his background, to develop the temperature standards, you used averages. The question is whether when looking at the individual data points, and I know those are available on the District's website, whether those show that actually even Stickney, would even Stickney comply on a consistent basis with the temperature standards? So it sounds like the Agency has not had the opportunity to assess that aspect.

MR. TWAIT: We have not.

MR. ANDES: Let me go back to specific questions that we had not asked before, and I have you sort of grouped by issue, but I'll tell you where they are in our original questions. And I thought we would focus

first on really habitat and biological-related questions, then we have specific questions on DO and on bacteria as well.

In terms of habitat, the first set of questions we had that we skipped over were on Page A of our original prefiled questions, and they dealt with Attachment R.

MS. WILLIAMS: So can I ask just a clarifying question procedurally here? Are you saying that there are other questions on Pages 1-7 that we may go back to based on the subject matter?

MR. ANDES: I believe not.

MS. WILLIAMS: Or you believe they've been asked and answered.

MR. ANDES: I believe the ones on 8 and 9 are the first ones that you skipped over and are now coming back to. So I think we're done with Pages 1-7.

MS. WILLIAMS: Great.

MR. ANDES: So the first question regarding Attachment R concerns Page 2 of the report which indicated that current cover

type scores are listed in table 3 and were collected as part of a plan revision to QHEI.

First question is was the revised QHEI metric used to evaluate the CAWS or the tradition at QHEI method?

MR. ESSIG: Traditional.

HEARING OFFICER TIPSORD: Excuse me. Off the record for just one second.

(Off the record.)

HEARING OFFICER TIPSORD: Back on the record.

MR. ANDES: Is it your understanding that the revised method has replaced the original QHEI in this time, at this time?

MR. ESSIG: When you're referring to the revised QHEI, you're talking about the cover type scores? Is that what you're referring to?

MR. ANDES: That was part of the planned revision to the QHEI process.

MR. ESSIG: No. The cover type scores were not -- the revised cover type scores were not used in the QHEI.

MR. ANDES: Okay. What's your

understanding of the status of the revisions to the QHEI? Has that been peer reviewed? Has that been used in the region? Or are people still using the traditional method?

MR. ESSIG: I'm sorry. But when you're referring to the revised method, which -- what are you referring to?

MR. ANDES: Well, in the report, it had mentioned a planned revision to the QHEI which included consideration of cover type scores.

MR. ESSIG: Okay. Right. The cover type scores, they've got them on the sheet but they're not being used in the actual calculation of QHEI. That revision has not taken place yet as far as cover scores.

MS. WILLIAMS: And when you say the report, just for the record, is that Attachment R then that we're talking about? That's the report?

MR. ANDES: Yes. Yes.

Next question, on Page 35 of Appendix R there's a large difference in the QHEI scores reported in the second column

of Table 2 and the second column of Table 3 for the Cal-Sag Channel and Route 83; similarly there are different scores listed for what I think is Sheridan Road and Dempster Street on the North Shore Channel. So the first question was is there an error here? What is the reason for the discrepancy between the scores? They're fairly significant differences.

MR. ESSIG: Yes. These were errors and they've been corrected. The correct store is 83 on the Cal-Sag Channel. It was 54. The correct score for Cal-Sag at Cicero was 47.5, and then at Sheridan it's 42 and at Dempster it's 37.5.

MR. ANDES: And what was the error? Do you know?

MR. ESSIG: Mr. Rankin did not tell me what it was, although it looked to me like they switched those scores between the Cal-Sag and the North Shore Channel for that one table.

MR. ANDES: Oh, so the Dempster Street 37.5 was put in as Cicero and Sheridan was

put in as Route 83? Is that --

MR. ESSIG: I think that might have been what happened on that one table.

MR. ANDES: Okay. And in the numbers that he used in evaluating were the correct numbers? Is that your understanding?

MR. ESSIG: Yes, it is.

MR. ANDES: The ones in --

MR. ESSIG: The correct values.

MR. ANDES: -- Table 3. Okay. And were then those -- were those scores then used in the UAA report?

MR. ESSIG: I'd have to check. For the CAWS UAA report on Page 4-104, Table 4-63, incorrect scores are indicated for the QHEI at Cal-Sag Channel at Cicero and also at Route 83, and then we'll have to look up the North Shore Channel. For the North Shore Channel, it's Page 4-43, and the wrong scores are indicated there also.

MR. ANDES: Has the Agency gone back to the raw data to verify which scores are right?

MR. ESSIG: No, I have not.

MR. ANDES: Let's move on to the next question. On Page 6, Paragraph 2 of Appendix R there's a discussion of habitat conditions that are not feasible to restore such as ongoing activities to maintain the water in an altered state, EG channel maintenance for ag drainage, flood control. This condition would apply to all of the CAWS, the exception of the Calumet River upstream of the O'Brien Loch and Dam to Lake Michigan since its flow is controlled by the Metropolitan Water Reclamation District. Does IEPA agree with Mr. Rankin's statement that habitat cannot be feasibly restored if the waterway is in a quote, altered state, unquote for flood control?

MR. ESSIG: Actually, I think what his statement that you read was really more of a general statement in relation to assessing habitat conditions in a nonspecific waterway. Even on the page prior to that quote he's talking about in generalities, I think, not specifically to the CAWS.

MR. ANDES: But do you agree or

disagree with his general statement?

MR. ESSIG: Let me just read the portion of Mr. Rankin's statement. The information collected may indicate that habitat is relative to reference conditions. In the habitat conditions are not feasible restorable in the short-term due to factors such as examples of these things. But he later indicates, I think, that he's not specifically mentioning these waterways, I don't think.

MR. ANDES: He sounds --

MR. ESSIG: These are examples of problems that could occur, but they're not necessarily for specific waterway. They may not be an issue.

MR. ANDES: So you don't disagree with this as a general proposition, but you're not stating how it might apply specifically here?

MR. ESSIG: Yes.

MR. ANDES: Okay. Next question: On Page 6 of Appendix R, last paragraph states, quote, in the following section we will examine each water body, summarize the

physical limitations and the suggested tier of which it to fit in the Ohio model, unquote. Can you first describe the recommended categories Mr. Rankin used from the Ohio tier model?

MR. SMOGOR: Ohio EPA has four tiers of aquatic life use, each representing a different level of biological potential, the highest level they call exceptional warm water habitat use. And the next lower level they call warm water habitat use, and then an even lower level for another tier that represents an even lower biological potential they called modified warm water habitat use and this modified level has three different forms. One form is modified due to the impacts of impoundment, another form is modified due to the impacts of channelization, and I think in Ohio typically that's reserved for fairly small water sheds. And the third form of modified warm water habitat is modified due to the impacts of mining. Their fourth and lowest tier is called limited resource water, and, as I

understand, they're trying to move away from that. That was kind of a default category in the past. And that use, limited resource water, to my understanding typically applies only to very small water sheds less than about three square miles drainage area.

MR. ANDES: Where does the Cuyahoga River fit in there in that system?

MR. SMOGOR: I don't know offhand.

MR. ANDES: Okay. As to Mr. Rankin's recommendations in his report, do you understand those to have been based on actual QHEI scores or on his professional judgment?

MR. ESSIG: I think they included the QHEI scores, the individual habitat metrics, and also his professional opinion.

MR. ANDES: Okay. We'll get to the individual metrics in a moment. We'll go to some follow-up questions on this same area of inquiry. As to the field measurements Mr. Rankin took in calculating the QHEI in Attachment R, when were those field measurements taken?

MR. SULSKI: They were taken towards

the end of March.

MR. ANDES: Of?

MR. SULSKI: Of 2004.

MR. ANDES: 2004. Okay. And as I recall, Mr. Yoder, in his testimony, talked about a change to the QHEI scoring protocol regarding impoundments. The field measurements that Mr. Rankin took were done, am I right, before that change in the scoring protocol?

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

MR. ANDES: Okay. Mr. Yoder stated in his testimony on Page 142 of the transcript from February 1st that that sampling was prior to the QHEI modification. So then my question is whether the changes made to the scoring procedure might have affected the QHEI scores given to the CAWS?

MR. ESSIG: Possibly.

MR. ANDES: And also on February 1st, and this goes for the individual metric issue, Mr. Sulski made a statement, and I'll quote, "You have to look at the system as a whole and look at other features including,

in some cases, the individual metric that made up the score and why a QHEI score would be what it is. Do you know what dragged it down or raised it up," unquote.

MS. WILLIAMS: Are you quoting from the transcript?

MR. ANDES: Yes. I'm sorry. Page 98 of the February 1st transcript.

MS. WILLIAMS: Thank you.

MR. ANDES: So, correct me if I'm wrong, but this seems to say that in spite of a low QHEI score, individual metrics might result in placing a water body in a higher category; is that correct?

MR. SMOGOR: Yes. To the extent we're not relying solely on the final score to make a judgment. You can look at how individual metrics score and you can tally relative numbers of what they call positive metrics versus negative metrics.

MR. ANDES: All right. So let me take off from there. Which metrics would be looked at and how would they be looked at? Is there a methodology in terms of how one

would take those individual metrics and assess whether they should take a water body up or down from where it's QHEI score indicates it ought to be?

MR. ESSIG: Yes. If you take a look at the Mr. Rankin's report, I believe it's Table 2, there's a color-coded table, and it has the various different habitat attributes that he looks at. And there's positive habitat attributes then what we call high-influenced modified attributes, and also moderately influenced habitat attributes. You basically look at these different types of attributes at each location and how many fall into each category.

HEARING OFFICER TIPSORD: And just for the record, when you say Rankin's report --

MR. ESSIG: Attachment R. I'm sorry.

MR. ANDES: And did the Agency also use those metrics or does the Agency in this proceeding, has the Agency used the metrics in the same way that Dr. Rankin identifies in Attachment R?

MR. ESSIG: Not exactly I don't

believe.

MR. ANDES: Explain to me how you use them.

MR. ESSIG: We did look at the same way when you get the number you have to --

HEARING OFFICER TIPSORD: Mr. Essig, slow down and speak up, please.

MR. ESSIG: We did look at the number of different habitat attributes for each location. The one thing that they do, I didn't get around to doing, was they do a ratio of, for instance like the modified habitat attributes, positive attributes. It's not depicted on this table. I know they've done that.

MR. ANDES: But IEPA did not do that kind of calculation.

MR. ESSIG: I did not.

MR. ANDES: And nobody else in the Agency did either, right?

MR. SMOGOR: No. And I don't think Rankin's report, actually even goes that far. I know that from the QHEI literature that describes how to apply QHEI, and I'm not sure

if that's on the record, but Mr. Rankin did put out papers that described the development of QHEI and how Ohio uses the QHEI to address designated uses. There is a portion of the analysis of interpreting QHEI that points to taking a look at the number of positive attributes relative to the number of modified attributes, but there was no formal analysis of those types of ratios either in the Attachment R or in the analyses or the interpretations that we performed.

MR. ANDES: Okay. So is there any place in writing where the Agency's thought process on that is laid out?

MR. SMOGOR: Not explicitly, no.

MR. ANDES: Okay. Let me move on to another issue in the February 1st transcript, and this is with regard to Dr. Yoder's testimony on Page 184. When asked about whether the QHEI accounted for visible oil sheens or sulfate odors in the sediment, he stated, and I'm quoting, "The intent of the QHEI is to evaluate physical habitat, not chemical habitat. And it's intended that if

we were to do a complete evaluation of the system like the CAWS, we would absolutely have to have chemical data to go along with that, periods unquote. So the suggestion seems to be that it's very important to look at the sediment and chemistry data with the QHEI to get the whole picture of the waterway system. So my first question is does the Agency agree with what Dr. Yoder had to say?

MR. SULSKI: I would agree that to have that type of data would be good data to have to make a more fine-tuned evaluation.

MR. ANDES: But he said if we were to do a complete evaluation of the system, we would have to have that data. So I'm -- It's not that it could be fine-tuned. He said to have a complete evaluation, you need that data, those data.

MR. SULSKI: We don't believe that you need every available set of data in order to make an evaluation.

MR. ANDES: How about any chemistry data, sediment chemistry and toxicity which are not really folded into the QHEI?

MR. SULSKI: Sediment, chemistry and sediment toxicity data would be important data to have, but not just sediment chemistry in itself. Because it quite often doesn't paint enough of a picture for you as we found out in reviewing the data that we had for this UAA, the toxicity data is important and critical to make a determination on availability of chemicals that are detected in the sediments.

MR. ANDES: And part of that is because sediment chemistry and toxicity affect the aquatic life use potential of the segment, correct?

MR. SULSKI: That's correct.

MR. ANDES: As to the sediment characteristics, does the -- and I'm talking in terms of for the current situation, whether -- the question is does the current sediment, chemistry, and toxicity contribute to impairing aquatic life potential of the CAWS as it currently stands now? What's your opinion?

MR. SULSKI: This was asked and

answered earlier and the answer was that to the extent that the physical structure of the sediments applies as a metric within the QHEI, we utilized it and Rankin did as well. With respect to the chemistry and toxicity data available for the system, the conclusion was that we do not have enough data to make a conclusion one way or another. We had a lot of bulk chemistry data, very little toxicity data, and most of the toxicity data was the limited amount that we had was inconclusive.

MR. ANDES: Okay. Another question about the QHEI scores in relation to IBIs. And I don't have page numbers, but I believe several times we've talked about the fact that current IBIs are not as high as would be expected given the QHEI scores. And so the first question is, has the Agency evaluated whether sediment impairment may be part of the reason that the IBI scores are lower than would be expected?

MR. SULSKI: The answer would be the same as I just said.

MR. ANDES: Don't know?

MR. SULSKI: To the extent that they contributed to a QHEI score.

MR. ANDES: Well, I'm thinking about chemical impairment, toxicity, which really isn't part of the QHEI scores. The question is could that be part of the reason why the IBI scores are lower than the QHEI scores would tell you they should be. Is that sort of the missing link?

MR. SULSKI: I would call it a missing link.

MR. ANDES: Okay. Now, in terms of the sediment chemistry data, I know that the UAA report, Attachment B, did have some chemistry data collected by the district, and I think that was from 2002. And you've just testified as to how sediment -- there's limited information and how that was used in the process. As the Agency may be aware, the district has continued to collect sediment data, chemistry and toxicity every year since 2002. That's all on the District's website, some of it. Has the Agency examined any of the additional district sediment data?

MR. SULSKI: We examined sediment data as well as the contractor. I can't tell you whether we examined data that wasn't available to the contractor, but I can tell you that all the data that we examined we have put together and are willing to -- and want to share with you all the data that we looked at, and that would include the data that the contractor looked at except for one item on earlier 1990, late '90s sediment chemistry data set that the district has cited as having provided or generated. I could not find that data source. But I --

MS. WILLIAMS: Can you clarify, Robert? Are you talking about data that was cited in the UAA?

MR. SULSKI: Data cited in the UAA.

MR. ANDES: So the contractor you're talking about, CDM, quoted a UAA report for the CAWS.

Well, I guess the question is if additional data are available and we can say that they are from the District having collected both chemistry and toxicity data

since 2002, that can be made available, would the Agency be willing to consider that information in assessing this issue further?

MR. SULSKI: Absolutely.

MR. ANDES: Thank you.

MS. DIERS: I want to note on the record, too, that we were asked to provide the sediment data and as Rob referred to, it was quite thick, and we weren't able to copy that before we came here today. But we are in the process of putting that information together and will get that sent out to everybody as soon as we can.

HEARING OFFICER TIPSORD: Thank you.

MR. ANDES: Moving on to additional questions from our earlier specific questions. On Page 23, and these are -- if the question is going to be have I skipped all the way to Page 23.

MS. WILLIAMS: Absolutely.

MR. ANDES: I'm checking right now. I believe that's right. I think the rest of the ones we have -- I can't swear to it right now, but the questions we'll look at right

now are on Page 23, going into IBI. So we're still in the habitat issue, but on the IBI part of it. And these were questions for Mr. Smogor.

The first one was Question 6 on Page 23, and this deals with Page 5-8 of the UAA report, Attachment B, which states that the 75th percentile IBI scores were used to designate the aquatic life use tiers for the CAWS. The IEPA used the Ohio Boatable IBI to assist with conclusions concerning aquatic life use designations.

First question: Are you aware that on November 8, 2006, Ohio EPA published an update to its user's manual for biological field assessment in Ohio surface waters?

MR. SMOGOR: Yes.

MR. ANDES: And are you aware that on Page 1 of the document they made two modifications to how they calculated the boatable IBIs?

MR. SMOGOR: Yes. These are two corrections to typographical errors in the table and the original document.

MR. ANDES: Okay. And were those modifications taken into account in calculating the boatable IBIs for the UAA report?

MR. SMOGOR: No.

MR. ANDES: Okay. And my understanding is that the calculation of IBI users could be four IBI units which -- or more which could be significant, correct?

MR. SMOGOR: I'd have to say it depends. Based on published studies, the estimated precision of an IBI, of a fish IBI score, is plus or minus four points. But if you're taking one score and comparing it to a fixed threshold, then yes, a difference of four more points would matter. But if you're taking two scores, each with precision of plus or minus four, you'd actually need a difference of eight to call it a meaningful difference in biological condition. Does that help?

MR. ANDES: But these numbers were used in classifying waters using particular use categories, and there it could make a

difference in terms of which category a water body goes into, right?

MR. SMOGOR: Well, we -- I'd like to point out that we're not -- We didn't really define the proposed aquatic life uses based on current biological conditions. Again, the proposed uses are based on our interpretation of what the biological potential or an attainable condition. So it is possible that the scores that we did look at and helped kind of inform the whole process do have errors in scoring in the CDM report. But I'd like to point out that we're not basing a lot of our judgment on what the proposed aquatic life uses are on the current conditions, current biological conditions.

MR. ANDES: But the IBI scores are part of the process. They are one of the factors --

MR. SMOGOR: They were consulted. They helped inform the process. They told us, like you had mentioned earlier, it doesn't look like currently the biological condition is attaining what we believe is

attainable for these waters. So that does help inform the process looking at current conditions. But it doesn't necessarily help you define the aquatic life use or help us define the aquatic life use that we propose for these waters.

MR. ANDES: So it's a factor, but the Agency has not really assessed whether this error might affect the classification of any particular water bodies here?

MR. SMOGOR: We haven't fully examined all of the corrected scores.

MR. ANDES: You haven't examined. Rather than fully examined, have you partially examined them?

MR. SMOGOR: We haven't received or we haven't looked at the corrected scores.

HEARING OFFICER TIPSORD: Miss Franzetti, you have a follow-up?

MS. FRANZETTI: Mr. Smogor, it really becomes difficult to get a handle on what the Agency was relying on to reach conclusions, and it's going to be hard for me to fit this into a short question. Bear with me. But

just a few questions ago, Mr. Andes was emphasizing the point that the Agency place some emphasis on the difference between the gap, so to speak, between the IBI scores and the QHEI scores as an indication that these water bodies are not reaching their potential, okay? And now Mr. Andes has also pointed out that there may be some corrections that should be made to the IBI scores. You're saying, well, but the IBI scores are not really what we relied on for making use designation determinations, and yet that prior exchange would seem to indicate that you were at least, to some extent, and maybe we can -- the argument is over what extent, but it seems like you were using that gap between the IBI scores and the QHEI -- I guess I should be going like this (indicating), the QHEI to say there's more potential out there. They can attain a higher score. So now I'm confused what is the Agency's --

MR. SMOGOR: That's correct. But what drove our interpretation of potential was

really where that QHEI score and where the physical habitat information is at. How far the current IBI scores are from that, like I said, informs the process. But really we're basing our potential on the physical habitat capabilities of the system given the level of irreversible impact. So whether or not your current conditions are sort of close to that or far from that, it doesn't change that upper bar, that upper expectation.

MS. FRANZETTI: And that upper expectation being primarily driven by the QHEI scores?

MR. SMOGOR: Primarily driven by the physical habitat information. I'm not going to say solely final QHEI scores, but primarily driven by the physical habitat.

MS. FRANZETTI: Thank you, Mr. Andes.

HEARING OFFICER TIPSORD: Mr. Harley?

MR. HARLEY: So, for example, for the Cal-Sag Channel, in assessing the biological potential of the Cal-Sag, the presence of a littoral zone, was that relevant to the ultimate conclusion of the biological

potential of that part of CAWS, that segment of CAWS?

MR. SMOGOR: You guys can --

MR. SULSKI: Yes.

MR. HARLEY: Were tributary connections relevant to the biological potential?

MR. SULSKI: Yes.

MR. HARLEY: Shore line structure?

MR. SULSKI: Yes.

MR. HARLEY: Bottom substrates?

MR. SULSKI: Yes.

MR. HARLEY: Ripple pool development?

MR. SULSKI: I don't think so.

MR. HARLEY: Okay.

MR. SULSKI: I don't know many rippled pool zones, if there are any.

MR. HARLEY: In terms of littoral zones, tributary connections, shore line structures, bottom substrates, would any of that be altered -- your evaluation of those factors -- would any of that be altered by changes in the QHEI score and the IBI protocol or in the sediment, chemistry, or

toxicity?

MR. SULSKI: Well, the QHEI score and some of these other attributes that you mentioned are the drivers, okay? And then we have IBI data, we look at the IBI data to see if what we expect out of that type of habitat is there. If it's not -- If it is, we're happy with what the habitat is telling us. If it's not, if it's lower quality or lower IBIs, that's when we begin to look for purposes for that, stressors. So we identify stressors, and that's where the chemistry then starts to come in. What does the chemistry say about these waterways? And all that information is taken into consideration.

MR. HARLEY: And you took all that information into consideration in coming to the conclusion that the Cal-Sag Channel, for example, deserved aquatic life use A designation?

MR. SULSKI: Yes.

MR. ANDES: Except for the sediment data which you had a very limited amount that really wasn't considered to a great extent,

correct?

MR. SULSKI: Well, the -- We considered what we had and we determined that we don't have enough information on sediments to say one way or another whether they are a stressor. However, we did get into long discussions on how we believe sediments are improving over time. So it was easier to --

MR. ANDES: That wasn't based on any data. That was just based on --

MR. SULSKI: Just reasoning on less overflows, other programs that have come in to be, better wastewater treatment, those sorts of things.

HEARING OFFICER TIPSORD: Mr. Ettinger?

MR. ETTINGER: Mr. Andes pointed out what he referred to as an error in the calculation of the IBI scores relative to this correction that was made by Ohio EPA in 2006. Could we make that correction from the documents we have available to us?

MR. SULSKI: I have talked to the UAA contractor, CDM, and they agreed to do that

for us.

MR. ETTINGER: Are we expecting an answer from them?

MR. SULSKI: Yes. They said that they would do that, and as soon as they could, and I got an impression it was in a couple of weeks.

MR. ETTINGER: Thank you.

MR. HARLEY: One more. I apologize. You mentioned several factors that might suggest that sediments over time might become less toxic. Could you describe the character -- the physical process of natural attenuation generally as it relates to toxicity in sediments.

MR. SULSKI: As time progresses, I'm assuming you don't have anymore inputs, physically things move further downstream. They get --

MR. ANDES: Let me stop you for a moment. Do you know what inputs you're getting from CSOs and MS4s?

MR. SULSKI: Exactly I don't -- I haven't quantified the amount -- the

quantity. But what was also factored in is the fact that CSOs would be reduced over a period of time with the completion of TARP. So we made that point that it would --

MR. ANDES: When would that happen?

MR. SULSKI: That will be in --

MR. ANDES: Over the next about 15 to 20 years, right?

MR. SULSKI: Yes. That pretreatment program, for example, was brought up. Since the '70s pretreatment programs have reduced the amount of toxics that actually go into the sewers that then overflow out CSOs. Sediments get resuspended in these waterways that have a better quality in terms of dissolved oxygen. So there is in situ treatment going on. We can go back to the record. We listed about seven or eight processes or circumstances that continue to occur that suggest that sediments will and are improving. We did acknowledge, though, that we don't have --

MR. ANDES: And let me ask a follow-up -- I'm sorry. There are two

separate issues there. One is is the sediment quality improving, and the Agency doesn't really have data on that, but it has some reasons, it believes, suggests that the sediment quality may be improving. But the other question, actually the data that the District can provide will be relevant to this, is even if improving, are the levels of various toxics in the sediment still at levels that could pose significant issues in terms of aquatic life impairment? And the issue of trends or improvement doesn't really answer the question of are they still at levels that could pose an issue as a stressor, correct? It could be less than they are before and still be above the levels they that would become a major stressor?

MR. SULSKI: We didn't have the data to evaluate. If there is data available, as I said, we'd love to look at it and have it.

MR. ANDES: Let me move on to another question also concerning an inaccurate IBI scoring measure in Table 4-11 on Page 417 of Attachment B. This concerns a special

procedure should be used when relative numbers are less than 200 per 1.0 kilometers, not 200 per 0.3 kilometers. That seems to be another error in the IBI scoring process here.

MS. WILLIAMS: Which number is this?

HEARING OFFICER TIPSORD: This is I.

MS. WILLIAMS: Thank you.

MR. SULSKI: What was the question? Please repeat the question.

MR. ANDES: Would you agree that there's an inaccurate IBI scoring measure on Table 4-11 for fish number and special scoring procedures?

MR. SMOGOR: Yes.

MR. ANDES: And has the Agency assessed what difference that makes in the IBI scores?

MR. SMOGOR: No.

MR. ETTINGER: Is that another thing they've been asked to correct?

MR. SULSKI: Yes.

MR. ANDES: Now, do we have anywhere in the record IBI scores reported for CAWS in

a tabular form so we can compare calculations maybe in there? I haven't seen it. But if not, that would be very helpful.

MS. WILLIAMS: I don't know how long that would take, but.

MR. SULSKI: I don't know that -- I don't know whether we can or not.

MR. ANDES: That would be helpful if we could hear back on how extensive an operation that would be.

MR. SMOGOR: If the contractor is redoing all these scores, I think part of that process is having this information in some kind of tabular format. So I don't think it would be that unreasonable to expect that they'll be able to get us that, but I don't know for sure. We didn't ask him specifically.

MR. SULSKI: We didn't ask them specifically for that but I can touch base.

MR. SMOGOR: It would be a normal part of the process.

MR. SULSKI: I'll touch base with Mr. French.

MR. ANDES: Thanks. This is question N, I'll skip to: How do the fish communities in the CAWS compare to the fish communities who were initially used to calibrate the Ohio Boatable IBI?

MR. SMOGOR: The reference condition fish communities use to calibrate the Ohio boatable IBI most likely represent locations less impacted by human influences than most of the CAWS.

MR. ANDES: What does that tell you in terms of whether that procedure is relevant to the CAWS?

MR. SMOGOR: The way an IBI is developed is you set expectations based on least disturbed conditions. So that's a benchmark. So when you go out to a site and you really don't know what the conditions are, then you perform an IBI analysis, your IBI score is, in effect, just a simple measure of how far you are from the benchmarks of what the site, we're expecting the site to be, what the site should be lacking human impact. So the farther you are

with your conditions from the benchmark, then the lower the IBI score. So that applies anywhere. If the IBI is developed well enough, it will be an indication of the level of human impact if the metrics are appropriate from place to place to place. Maybe that's what you're getting at, are the metrics appropriate.

MR. ANDES: Right. And ordinarily it would be better to -- the closer the reference is to that water body, the better.

MR. SMOGOR: The ideal situation is to set your benchmarks based on the stream you're interested in, if you could magically remove the human impact. So all other non -- all other issues not related to human impact would be part of that benchmark condition. But that's the ideal and rarely is that met. And if I believe -- I believe, at least from the Lower Des Plaines, and I'm assuming this extends to the CAWS, the work groups decided, at least for the lower Des Plaines River, the biological work group decided that there were no legitimate reference least disturbed

conditions for the Lower Des Plaines, and I'm guessing the same thing was probably decided in that region of the CAWS. There's really no legitimate reference condition, so --

MR. ANDES: Let me stop you there. Doesn't that influence the amount of confidence that one can have in the conclusions you reach about what that water body can be upgraded to if we don't really have a legitimate reference to compare it to?

MR. SMOGOR: Well, it's an ideal situation to have reference, but when you don't have reference, you still have to come up with what's the potential of this water. And I agree, that's a much more difficult thing to do without reference conditions from that particular region. But that doesn't mean that you can't be informed by reference conditions from another area to some degree and use the information that you have at hand to set reasonable uses to the best of your ability.

MR. ANDES: What gives you the level of confidence for regulatory purposes that

this particular method is the best applicable one to this situation? And we can base finding sets of regulations on that.

MR. SMOGOR: Well, again, if you're asking whether or not the Ohio boatable IBI is appropriate for indicating current biological conditions in the Chicago Area Waterways, I think that was kind of a consensus agreement realizing that it was an index that wasn't based on reference conditions directly from that region. But I'd also like to point out that the uses we proposed for the CAWS are not necessarily driven by the Ohio boatable IBI scores. They were largely driven by the physical habitat, what is the capability or the potential of the CAWS, of the waters in the CAWS.

MR. ANDES: Well, two thoughts on that: One is I'll go back to Miss Franzetti's question, which is it's not that the IBI scores were entirely irrelevant. They were --

MR. SMOGOR: I'm not saying that. I'm not saying that they're entirely irrelevant.

MR. ANDES: So I guess part of the other question is might the fact that when we talked about IBI scores being unexpectedly low, for example, might that we want to go back the other way and, in fact, question is the QHEI process the right way to really look at the potential of this water body if the IBI scores aren't coming out near where we would expect them to be based on the QHEIs?

MR. SMOGOR: About all I can say to that is we took -- I think there was an agreement among the stakeholders, and I can't speak for the CAWS as much as I can speak for some of the meetings I attended for Lower Des Plaines River. But I think there was a general agreement among the stakeholders that even though these tools are imperfect, they're probably the best tools we have to look at these types of questions, and we'll go ahead and use these tools and help these tools inform the overall process. And none of these tools are perfect. So we use what we believed was reasonably applicable.

MR. SULSKI: And if it was a case

where we found a disparity between the IBIs and the QHEIs and we went and looked and found no stressors, we didn't find that the oxygen drops to zero periodically, we didn't find temperatures that were elevated that, according to the criteria documents and the other information we looked at suggested that they were stressors, then, yeah, that might be a useful exercise. But when we -- right off the bat we identified significant stressors. So that's my answer.

MR. ANDES: Okay. Let me ask about another stressor, and this was Question Z in our prefiled. This was concerning impervious surfaces that haven't been demonstrated to have significant impact on aquatic life indices when greater than 15 percent of a water shed is impervious. And it wouldn't surprise anyone that Cook County has been estimated to have over 40 percent impervious surfaces. How does that kind of extreme water shed modification fit into this approach?

MS. WILLIAMS: I know I objected to

that, I think, or somebody objected to similar questions last time where there's a statement of fact about an impact that is not in the record that I'm -- that is not.

MR. ANDES: I can withdraw the factual statement. The question is how does the extreme water shed modification of large percentage of impervious surface get considered in this process?

MR. ESSIG: The QHEI to some extent takes that into consideration, some of the metrics, for instance, like the riparian zone. With the riparian zone and also the land use category, it does have industrial urban areas that you would check off on the QHEI. So it does take that into account to some extent.

MR. ANDES: To a fairly limited extent, though, right? It wouldn't make a major differentiation between a water -- a water shed where it's 25 or 40 or 50 percent impervious versus in an area that might be classified as urban?

MR. ESSIG: I would tend to disagree.

I think it could make a big difference in the score. The maximum score for that metric, I believe, is ten. And if you have industrial land use, your basic score is zero for that one part. And if you don't really have any repairin zone, you're not going to get any points for that either or maybe one or two points. So the score for that metric will go down quite dramatically, or at least it potentially does.

MR. ANDES: So there is no direct way that the impervious surface -- and obviously that's an issue we've talked a lot about in the context of storm water run-off lately, and I'll get to storm water run-off in a minute. But there's no direct metric that counts for this percentage and how it might influence the process. There's a rough -- There are some rough measures based on an urban -- based on industrial land use or a lack of repairin zone; is that correct.

MR. ESSIG: That's correct.

MR. ANDES: Okay. Now, in terms of -- I had a couple of follow-ups on that issue.

Has the Agency looked at the extent of the drainage area here for CAWS, and I'm thinking in terms of storm water run-off as well as the extent of the combined sewer area, and thought about how those factors might fold into this process in terms of extent of either CSOs or storm water run-off contributing to the impairment?

MR. SULSKI: Whether we considered that storm water run-off and CSOs contributed to impairment or that our stressors? I mean we talked about CSOs quite frequently in the meetings and identified that they do occur and that there are oxygen sags down to zero when they occur. And so, yes, we did consider that.

MR. ANDES: But the question -- well, first, the question is not really what was discussed in meetings. The question is in the Agency's decision-making process, in putting this rulemaking forward and in thinking about the aquatic life use potential of these water bodies, okay, given that there's nothing here that directly addresses,

for example, the CSOs or the MS4s. And I'm trying to figure out in developing this rule, has the Agency looked at, in considering aquatic life use potential, the ongoing stressors of storm water run-off from a large urban area and thousands of CSO discharges per unit?

MS. WILLIAMS: I think this question has been asked and answered not just today, but probably all three sets of hearings. If you disagree, I'll accept that, but he's asking if we've looked at CSOs --

MR. ANDES: Well --

HEARING OFFICER TIPSORD: As a stressor.

MR. ANDES: I'm sorry. Part of the reason we asked this is because in the March 10 testimony, Mr. Sulski talked about water run-off as being a drop in the bucket on Page 152 of that transcript.

MS. WILLIAMS: Okay.

MR. ANDES: So if the Agency on the one hand admits that these are significant factors and wants to talk about how they

considered them, that would be fine. I would expect that. But talking about urban run-off as a drop in the bucket makes it sound as if it wasn't considered as a significant factor. So I'm trying to get that clarified.

MS. WILLIAMS: Okay. Not whether it was considered, but whether it was considered significant? Is that what you're asking?

MR. ANDES: Yes.

MS. WILLIAMS: Okay. I'll accept that -- I'll withdraw my objection.

MR. SULSKI: I think it would be fair to say that it was, relative to the other stressors identified, it was an insignificant factor and we moved forward with dealing with what were identified as significant factors.

MR. ANDES: And the reasoning behind considering it an insignificant factor?

MR. SULSKI: Because for the majority of the year, the waterways are dominated by dry weather conditions with some eruptions of CSOs and some impacts, and that much of the urban run-off, the most significant or highest load of urban run-off occurs at the

beginning of a storm event which often gets captured by TARP. So it's the first flush that gets captured by TARP.

MR. ANDES: Currently captured by TARP?

MR. SULSKI: Now and into the future at a greater frequency or to a greater extent.

MR. ANDES: Potentially over the next 20 years?

MR. SULSKI: Over the construction, yeah.

MR. ANDES: But isn't there storm water that don't go to TARP at all and won't go to TARP?

MR. SULSKI: There is storm water that won't go to TARP and doesn't go to TARP. And the areas where that occurs in terms of contributions to the system were considered less important than the effluents and the CSOs and those identifiable stressors. We had to have chemistry to back that up in terms of DO.

MR. ANDES: Describe the chemistry.

MR. SULSKI: The chemistry is available in reports. For example, what happens with DO when you have a storm event and shortly after a storm event. Did you want me to refer you to pages?

MR. ANDES: Yes.

MR. SULSKI: It's in appendix -- Actually, you have a question like that, and I wrote down the sources. We also --

MR. ANDES: Does the information in the report in your belief differentiate between storm impacts and non storm impacts?

MR. SULSKI: With respect to DO, yes, and temperature is included in those.

MR. POLLS: When you use the word water run-off, does that mean separate storm sewer overflows and combined sewer? Do you use that in that definition?

MR. SULSKI: Of urban run-off? No. We looked at urban run-off in referring to separate sewer areas.

MR. POLLS: So combined storm --

MR. SULSKI: Separate storm.

MR. POLLS: Combined sewer overflow is

not considered urban run-off; is that correct?

MR. SULSKI: Correct.

MR. POLLS: Okay. So if Fred is saying a -- What you just said is you're looking at DO data. Are you looking at continuous DO data?

MR. SULSKI: Correct.

MR. POLLS: How did you differentiate separate storms sewer overflow versus combined sewer overflow?

MR. SULSKI: In some cases where we have fish gills, for example, the District provided data that, you know, where a couple of days before a rain event, true rain event, and a couple of days after a rain event?

MR. POLLS: Give me a specific example. Because I don't understand. I don't think you're answering the question.

MR. SULSKI: Maybe you should rephrase the question.

MR. ETTINGER: Can I object here? We're messing up a lot of terminology, and I think it's confusing the witness, and it's

certainly confusing the transcript. A CSO is not run-off in the Clean Water Act, and I don't believe the witness is understanding it that way. And when we flip back and forth between run-off and CSOs and storm sewers, which are not run-off either, we're not making a very clean record here. So I just hope that we can separate -- I don't know whether the witness is able to break down the relative contributions of these different sources, but I don't want to mix and unmix between questions.

MR. ANDES: That's fine. Let me take it -- Jeff, did you want to?

MR. FORTE: Go ahead. But I have a question here that, once you finish your question, I will follow on.

MR. ANDES: What we're trying to understand are what the stressors are that were considered; and, in particular, we're focussing on wet weather sources which there are several. And I'm not trying to differentiate between them right now in terms of nature of impacts. I'm looking more at

how wet weather sources are considered. And, in fact, this actually goes also to Mr. Safley's question about the icing salt in terms of that being part of the contaminants in wet weather sources. So we're trying to get a sense of how we're -- particularly because at one point you have been referred to in testimony as really insignificant factors on the aquatic side, and yet we're seeing a number of areas where it could be potentially very significant in terms of influencing the aquatic life potential of the stream. So we're trying to account for that and understand that conflict.

MR. SULSKI: Well, when we --

MS. WILLIAMS: Was that a -- Could you ask it as a question?

MR. ANDES: I hope that clarifies what I'm asking. If Mr. Sulski wants to respond to that and then Mr. Forte can --

MS. WILLIAMS: Well, his attorney would like to make sure you've asked the question now that you've clarified what you're getting at because --

MR. ANDES: Will you help us understand --

MR. FORTE: I have a question, actually, that follows on what you said.

MR. ANDES: Go ahead.

MR. FORTE: Mr. Sulski, going back to your prior comment. I believe you testified a couple minutes ago, a couple of pages ago probably now in the transcript, something to the effect that you concluded that urban runoff was an insignificant factor in terms of looking at the stressors. Do I recall that testimony closely?

MR. SULSKI: Relative to what we looked at it was insignificant.

MR. FORTE: Okay. And --

MS. WILLIAMS: And I think Albert asked that we be clear when we say urban runoff. What do you mean?

MR. FORTE: Thank you. That's my question.

MS. WILLIAMS: What do you mean?

MR. SULSKI: Okay. Urban runoff I consider as runoff from the land, either

directly or via storm sewers from areas that are separately sewered; in other words, they have a storm sewer system separate and aside from the sanitary system that conveys domestic waste. It does not include combined sewer areas.

MR. ANDES: Let me --

MR. FORTE: I have one more. And does that then, this runoff, include then not just thunderstorms and rain events, but also snow melt?

MR. SULSKI: The runoff would include snow melt, yes.

MR. FORTE: Thank you. Thank you.

MR. ANDES: Now, the extent we're talking about, whether it's CSOs or whether it's MS4s, which I have -- it's a clearer term in my mind come to separate storm sewer systems, the question is the Agency is making a judgment that these are not significant factors in the DO issue and part of the question is how can you really tell that from continue DO data? How can you differentiate the sources and what contribution they're

making to the problem through that?

MR. ETTINGER: I object to that because he didn't say that CSOs were an insignificant source. He said that the runoff was an insignificant source.

MR. ANDES: Okay. Fine. Let's talk about that then. That's fine.

MR. SULSKI: When we went through the UAA process, we identified potential stressors, then we focussed in on what the group believed were the most significant stressors that were either -- that were not being dealt with at the time or that had a long range -- that weren't being dealt with -- that needed to be dealt with more than they were being dealt with in the programs that we have in place today, okay? So when it comes to storm water relative to DO and temperature and what aquatic life uses we expect out of these waterways, the storm water runoff dropped by the wayside, not just because in terms of flow we thought it was insignificant, but also that we have programs in place to deal with those. And that would

be the separate storm, separate sewer, separate MS4 permits, you know, and BMPs and that and nonpoint related --

MR. ANDES: Okay. Then let me -- That's helpful. Let me stop you there.

So there was some judgment made in terms of the size of the loadings from those sources, but there's no real data on that, right, in terms of how -- what the loadings are coming from MS4s?

MR. SULSKI: Well, the data is in the water quality data itself. In some cases we were able to parse out wet weather related changes in certain parameters, but not in all cases.

MR. ANDES: Could you really distinguish those as being CSO related or MS4 related?

MR. SULSKI: Well --

MR. ANDES: If it was just wet weather, it could be either one.

MR. POLLS: We're asking how did you differentiate. That's my question.

MR. SULSKI: Yeah. In the case of

CSOs, we had continuous monitoring data from the district for DO that showed DO at really good levels, and then, boom, there was a CSO episode and the DO dropped to zero. And as you went further down the stream it stayed bottomed out for a while and then the rain stopped and the CSO stopped and then the DO recovered.

MR. ANDES: But also the MS4s start during wet weather events and stop when the rain stops, right? You didn't have a way to tease that out of there, did you? I mean they're wet weather sources just like CSOs. They'd be expected to have a similar frequency than CSOs in general. It rains, you have MS4s just like when it rains you have CSOs.

MR. SULSKI: So your -- The question is did we tease out what contributions nonpoint source had to that DO sag?

MR. ANDES: Yeah.

MR. SULSKI: Let me --

HEARING OFFICER TIPSORD: If I may, I believe the question basically is when you

have wet weather event, you have discharges from CSOs and you have the MS4s which are the general storm water permit discharges. You're saying that at that point dissolved oxygen went to zero. How do you know which of those two sources resulted in dissolved oxygen going to zero?

MR. SULSKI: I don't.

HEARING OFFICER TIPSORD: Mr. Harley then Mr. Ettinger.

MR. HARLEY: Do you know on average how many wet weather events there are annually in the CAWS area?

MR. SULSKI: Wet weather events of what magnitude?

MR. HARLEY: Wet weather events that would lead to the kind of overflow conditions that were just the subject of the questions that you were asked.

HEARING OFFICER TIPSORD: The CSO overflow.

MR. SULSKI: Approximately 12 to 15.

MR. HARLEY: So that would leave more than 345 days that would not be directly

influenced by wet weather events.

MR. ANDES: Wait a minute.

MR. SULSKI: They would be influenced by wet weather events, but not a CSO necessarily. So you have storm events that occur, you don't have a CSO, but the waterways are influenced by wet weather events.

MR. ANDES: Also, let me just factually clarify something. When we're talking about 15 on the average CSO events per year, that's per outfall. And we have some 300 outfall. So we're not talking about only 15 days of the year where there might be a CSO event at one outfall, it's considerably more than that.

MS. WILLIAMS: You're asking it as a question or --

MR. ANDES: Are there more than 15 days in a typical year when you would have a CSO event at any one outfall?

MR. SULSKI: Yes and no. Some CSOs rarely, if ever, have an overflow. Others have more than 15, okay? So that's an

average number, if you averaged all the whole number of CSOs.

MR. ANDES: So on the average, a CSO outfall point discharges 15 times a year?

MR. SULSKI: On average.

MR. HARLEY: A follow-up.

HEARING OFFICER TIPSORD: And then --

MR. HARLEY: A quick follow-up. It is, did that enter into your judgment about the significance or insignificance of CSOs, MS4s, and urban runoff as a contributor to conditions in the Chicago area waterways?

MR. SULSKI: Well, the judgment is this: You have storm water runoff that occurs at a much higher frequency than 15 times a year. You have rain events. Those rain events result in runoff. I can't tell you whether it's 30 times a year, 40 times a year. It varies with the year. But then you have these certain events that result in CSOs, and you look at all the water chemistry provided to us, and it's during those CSO events that you have the dissolved oxygen sags. But when you look at all over the --

at that data all over, the data was not parsed out for specifically storm events, but you would assume that some of that data did include some storm events. So the rest of the data, aside from those CSO events, indicates that the water quality is really good for most parameters except for the temperature -- I don't want to use the word really good. I want to use the word didn't meet the screening data that was utilized in the UAAs. Does that answer your question?

MR. HARLEY: Yes.

HEARING OFFICER TIPSORD: Mr. Ettinger?

MR. ETTINGER: This is such a fun topic, I just wanted to try and tease out something else. Do we have an estimate or a guesstimate of what percentage of the watershed that's going through this water system or this system is with separate sewers versus combined sewers?

MR. SULSKI: I don't think so. It's area by area.

MR. ETTINGER: Are there a lot of

separate systems up here or are they mainly combined systems?

MR. SULSKI: I would have to go back to the books.

MR. ETTINGER: Okay.

HEARING OFFICER TIPSORD: Mr. Andes, I think we're back to you.

MR. ANDES: Okay.

HEARING OFFICER TIPSORD: I'd like to finish this topic, but if we are finished with this topic, this might be a good stopping point. I just want to say that. If you still have a couple more questions on this topic, let's finish those.

MR. ANDES: Actually, I would say I do have a few more questions on IBI, but I'm not sure that we can finish them in a few minutes.

HEARING OFFICER TIPSORD: All right. Well, in that case. It's almost quarter to 7:00, so let's go ahead and call it a night. 9:00 o'clock tomorrow morning, everyone, and we'll start with Mr. Andes.

(At which time the hearing was continued to April 24, 2008.)

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STATE OF ILLINOIS)
) SS.
COUNTY OF COOK)

I, LAURA MUKAHIRN, being a Certified Shorthand Reporter doing business in the City of Chicago, Illinois, County of Cook, certify that I reported in shorthand the proceedings had at the foregoing hearing of the above-entitled cause. And I certify that the foregoing is a true and correct transcript of all my shorthand notes so taken as aforesaid and contains all the proceedings had at the said meeting of the above-entitled cause.

_____

LAURA BERNAR, CSR
CSR NO. 084-003592