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THE STENOGRAPHIC RECORD

BEFORE THE UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY

In the Matter

-of-

a Public Hearing to Consider Phase I Report of the Hudson River PCB Reassessment.

PROCEEDINGS:
September 12, 1991

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, NEW YORK 10278

PUBLIC MEETING

Hudson River PCB Reassessment

Phase 1 Report

Thursday, September 12, 1991
7:00 P.M.

Durkee Hose Company, Ft. Edward, New York

AGENDA

Welcome & Introduction	*Ann Rychlenski, Community Relations Coordinator, U.S. EPA, Region 2*
Review of Site History & Project Update	*George Pavlou, Deputy Division Director, Superfund Division U.S. EPA, Region 2*
Findings of the Phase 1 Report	*Al DiBernardo, TAMS Consultants*
Activities Subsequent to Phase 1	*Doug Tomchuk, Project Manager U.S. EPA, Region 2*

Questions and Answers

BEFORE THE UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY

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a Public Hearing to Consider Phase 1 Report of the Hudson River PCB Reassessment.

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Durkee Hose Company
116 Broadway
Fort Edward, New York

September 12, 1991
7:20 p.m.

PRESIDING:

ANN RYCHLENSKI
Community Relations Coordinator
U.S. EPA, Region 2

PRESENT:

GEORGE PAVLOU, Deputy Division Director
Superfund Division, USEPA, Region 2

AL DIBERNARDO, TAMS Consultants

DOUG TOMCHUK, Project Manager

P R O C E E D I N G S

MS. RYCHLENSKI: Good evening and welcome. Thank you all for coming out here tonight. This is an informational meeting sponsored by the USEPA, Region II, on the findings of the Phase 1 Report for the Hudson River PCB reassessment.

My name is Ann Rychlenski. I think a lot of you here know me. I am the community relations coordinator for USEPA on this site.

I would like to introduce my colleagues from EPA and from TAMS, our consultant. Down there to my far right, Mr. George Pavlou, and George is the deputy director of Superfund in Region 2. And then next to him is Doug Tomchuk. I think a lot of you here also know Doug. Doug is the project manager from EPA for the reassessment. And next to him is Mr. Al DiBernardo. And I think a lot of you know Al, as well. Al is with our contractor TAMS, Incorporated. They are doing the actual physical work of the reassessment.

I just want to say a couple of things before we get into the meeting itself. First thing I want to let you know is that even though this is very early on in the Superfund process, we are going to be taking public comments tonight, and that is why we have a stenographer here. There is a stenographer present to provide an accurate record and transcript of this meeting.

Whatever comments you have to give this evening will go on the record, and we will also be accepting written comment. The public comment period runs through close of business October 25. So if you have any written comments that you would like to submit, you can submit it by that date to Doug Tomchuk at EPA. And, as I said, whatever questions or comments are given verbally this evening will also be a part of the record and all of those comments will be addressed in the responsiveness summary that we will be putting together.

As I mentioned, this is very early in the Superfund process to do something

like this. Usually, you don't get to a public comment period until you are at the end of the process and you are ready to come forth to the public with a proposed plan for cleanup. But considering the controversy of this site and considering the very high level of public interest, we have decided to start public comment periods throughout the phases of this project. So even this early on we are taking comments, and we appreciate whatever comment you do give us.

There will be a few ground rules here tonight. We will be enforcing a three minute maximum, okay, on your comments. That's just so all of your neighbors can get a chance to have their say. If you have written commentary that will be going into the record and you feel that to come up and read it would exceed the three minute mark, please try to synopsize it as best as you can verbally because the entire written comment will be going into the record, anyway. So just be aware of the fact that your neighbors want to speak as well

and let's try to keep down to the three minute mark.

A few other things. We recently had an interesting availability session in Saratoga Springs. Last week, we had a phone number that was made available. We have an 800 number for phone-in questions about the Phase 1 Report, and that was something new and different. I don't think EPA has ever done anything like that before. But if there is need for it, it's something that we can do again. We realize that there is a large geographic area and a very wide constituency that needs to be reached on this particular issue, and we will try everything we can to get to everybody and to make sure that everyone is heard; and if that involves another toll free number at availability session like that, well, sobeit we'll get your feedback on that.

Let me see if there's anything that I've forgotten. No, I guess that's about it. Out there on the table, we have some executive summaries on the Phase 1 Report. I

hope you'll all take one. We also have a copy of "River Voices," and that is the newsletter that's been put together jointly by EPA and the members of the liaison groups that we established under our community interaction program. And "River Voices" is exactly as it is entitled, voices of the people who are involved in this project and of the opinions and thoughts of the different individuals that are involved in the health and quality of the Hudson River in trying to restore it to health and quality.

And with no further ado, I think we can go on. I'm going to turn it over to Mr. George Pavlou, and he is going to give you a brief site background and update on the project.

Again, please hold all your questions until the end. Come up to the mike. Speak clearly. Give your name out so that the reporter can get an accurate record, and try to keep to the three minute mark.

Thank you.

MR. PAVLOU: Thank you, Ann. For

those of you who heard my presentation last night, I ask for your patience.

We had the same presentation last night in Poughkeepsie. I realize that you all know the history of the site so I made it as brief as possible; but, for the record, I restate the site history and, essentially, synopsize the Phase 1 Report and why we're doing it.

We're very pleased to be here today to present to you the status of the EPA activities regarding the PCB contamination in the Hudson River. This is an informational meeting regarding our reassessment study. We're not here to make any decisions. We're here to listen to your concerns and also inform you of our planned activities regarding the future.

As you all know, the PCB contamination of the Hudson River was caused primarily by the discharge of PCBs directly into the river by the two G.E. electric facilities, one here and one in Hudson Falls.

When the dam at Fort Edward was

removed in 1973, much of these PCBs accumulated along the river sediments and much of them were washed downstream, and some of them were deposited in the so-called 40 hot spots, along a 40 mile stretch of the river between here and Troy. In addition, five contaminated areas referred to as the remnant deposit sites were exposed as a result of the lowering of the water level behind the dam after the dam was removed.

By the way of note, our study is concentrating at this point in time on the Upper Hudson from Fort Edward to Troy, but it will include discussions of the effects of the PCBs on the Lower Hudson, "lower" being between Troy and New York City.

In September of '84, the Hudson River was included as a final site on EPA's national priorities list. During the same month, EPA issued a "record of decision" under the Superfund program. This remedial decision selected an interim no-action remedy for the sediments in the river and required the in-place containment of the remnant deposit sites. In

addition, the record of decision called for the containment of -- for the evaluation of the drinking water quality in Waterford, New York. The ROD also provided for a reassessment of the no-action alternative for the in-river sediments in the future if visible treatment methods were improved, dredging techniques were developed.

As part of the reclamation demonstration project, in January of '89, New York State Department of Environmental Conservation Commissioner Thomas Jorling determined that river dredging and PCB removal were necessary, but that the proposed project was inadequate due to it's limited scope and the unsuitability of the containment site then under consideration.

As a result of that decision, on July 26, 1989, the New York State Department of Environmental Conservation requested that EPA revisit its 1984 record of decision. The Department also submitted at that time a draft action plan to EPA which called for a comprehensive PCB project. The plan with an

estimated cost of $280 million was the basis for discussions on the site between EPA and the Department.

Also, in December of 1989, EPA determined that it would now be an appropriate time to engage in a comprehensive reassessment for the interim no-action alternative as to the river sediments under Superfund.

We believe that the advances that were made in techniques for treating PCB-contaminated material and information available concerning cleanup of PCB contamination at several other sites in the country encouraged us to believe that alternative remedial actions should again be evaluated. In addition, reassessment of the interim no-action was appropriate as per EPA's guidance, which indicated as a matter of policy that EPA will conduct five-year reviews of all sites where contaminations remained in place.

Concurrently, in 1989, EPA and G.E. began negotiations for the implementation of the in-place containment of the remnant

deposit sites. As a result of these negotiations, a consent decree between EPA and G.E. for the construction of the in-place containment remedy for the remnant deposits was referred to the Department of Justice for filing in a U.S. District Court on April 6, 1990. That referral was later entered by the Court on July 21, 1990. G.E. is presently complying with the terms and conditions of this consent decree. Construction of the containment for the remnant deposit sites is now virtually complete.

The evaluation of the quality of the drinking water provided by the Waterford Water Works was completed by New York State in June 1990, and the results were made available for public comment. The study concluded that the water met the applicable standard for PCBs; and, therefore, there was no need for improvements to the water treatment plant to remove PCBs at this time. However, the report did include recommendations for the facility if it is refurbished in the future to include granular activated carbon filters, modify their

all-weather intakes and continue PCB monitoring on a quarterly basis.

On June 4, 1990, EPA notified G.E. that the agency would conduct a reassessment Remedial Investigation/Feasibility Study itself. Since that date, EPA has procured the services of TAMS to conduct the study. TAMS is represented, as Ann mentioned, by Mr. Al DiBernardo, who is going to present to you the preliminary findings of our Phase 1 Report.

Furthermore, EPA has taken steps to organize several committees which provide the public with a broad opportunity to review the work products of the reassessment RI/FS, Remedial Investigation/Feasibility Study. This expanded public participation goes beyond the requirements of the Superfund legislation. Its purpose is to assure that the many and varied public parties vitally concerned with the Hudson River and its existence and its health impacts will have their views and information carefully considered throughout all stages of our study. We believe this will assist EPA at the

conclusion of our reassessment in reaching a balanced, scientifically-sound decision consistent with our regulations.

To this point, I have been serving as the chairman of the Hudson River Oversight Committee; however, I have accepted a new position in EPA, and Bill McKay, who is sitting in the background -- if you can acknowledge yourself -- who is currently the deputy director of the New York Carribbean Superfund office will assume the position as chairman of that committee.

Given the complex nature of the site and the large amount of interest that it generates, EPA decided to use a phased approach for its reassessment study. The reasons for phasing are:

1. To give reviewers an understanding of the portion of the work completed;

2. Allow the review agencies, the scientific community and the liaison groups to better contribute to the next stages of the work; and

3. Keep the process dynamic so that we end up with a better product which is scientifically sound and technically correct.

The three study phases are:

1. Interim site characterization and evaluation, the subject of which is going to be presented by Al today.

Let me clarify one thing that -- I don't think it came through last night. The Phase 1 Report, we as an agency did not do much original work. We evaluated a lot of data collected by previous studies and drew our own conclusions on the basis of those studies. The purpose of the report was to establish data gaps, you know, from the previous studies, if there were any, and recommend additional sampling and additional work during phase 2.

Phase 2 is further site characterization and analysis, part of which Doug Tomchuk, the project manager for EPA, will be presenting to you tonight; and, finally,

Phase 3 is it the feasibility study which will screen remedial alternatives in

consideration by the agency in making its decision. By law, we also have to include a no-action alternative.

In conclusion, let me assure you that EPA is conducting the study with an open mind in an unbiased fashion, fully assessing and considering all valid and scientifically acceptable data and information. Comments in our findings, including those provided tonight, will be addressed in the next stage of the work or will be incorporated in the final reassessment report, which will include a responsiveness summary.

At this point in time, I would like to turn the floor over to Mr. Al DiBernardo.

MR. DI BERNARDO: Can I be heard? Can you hear me in the back?

(Response of "Yes.")

I am going to try this route rather than use a microphone.

I am glad to be at Fort Edward. I think it's the first time for me to speak

here, and it's nice to be here.

My role here tonight is, as George said, is to tell you about what we did during Phase 1 and what we reported in our Phase 1 Report. Again, I want to stress that, as George did, that Phase 1 is one phase of a three-phase process. And we performed this phase in a relatively short time so that we would not hold up the overall process.

The report contains information, as George said -- look, before writing the report, the things that we had to do were: We had to obtain information from a variety of data sources. We had to compile that information. We had to assess the information. We had to evaluate it and then in turn establish trends with that information.

That is what is presented in Phase 1. I reiterate. We did not generate any of our own data, and I think many people in this room know that.

Some of you have the Phase 1 Report; some of you don't. For those that do,

or don't, know that it's called an "Interim Characterization and Evaluation Report." It's a two-document report. One (indicating). Two (indicating). And I see a number of them being held in the audience. One is a volume that contains the text; the other is a volume that contains figures, plates and tables.

Because we set up an extensive community interaction program, what we did was we generated a report that would assist you in reading this technical document. If you were to classify this document, and many of you probably already know this, you would probably classify it as a technical document, the reason being that three parts of the document, Part A, Part B and Part C, talk about all the technical information that was collected in Phase 1 and brought out.

The Part A is the Lower Hudson characterization. It's an interim characterization, just like Part B which is the Upper Hudson characterization, an interim characterization. The word "interim" means that

it will change with time. It will change during Phase 2 when we get more information. It brought us to the stage where we say that now we know what information we have to go and get. Part C which is the Phase 1 feasibility study is also interim. All three parts are building blocks for further work.

To help you read these three parts, what we did was we tried to envelope it with information that would assist you. For instance, we provided you with an introduction -- and for those that haven't read it -- that tells you where you can find different aspects -- or what you can find in different parts of the report. We have provided an executive summary for those who don't have time to read 350 pages of the text that gives you an overview of what is in the report. We've compiled 40 pages of references, most of which are situated in the report, such that, if you do have time to read the 350 pages and you do have time to go back to the information from which they were based on, you will know where to go.

We've also provided you with a glossary. We're in a process. It's a three-phase process. We have a lot of these types of meetings. I think for all of us to understand one another -- and EPA recognizes this more than anyone. For all of us to understand one another, we have to use the same terminology, and that's why we provide a glossary. And that's why we request in the introduction if there are terms that you need to have identified or defined, please let us know and we will do that. We have to speak the same language, and that was our intent.

This is what the Phase 1 Report looks like. It's in the repositories. It's available. Many people here tonight have requested additional copies. I don't know what EPA's policy is on that; but, nonetheless, if you can read it, please read it.

Like I said, Part A was the interim characterization of the Lower Hudson. This was of much interest to the crowd last night, and I hope of similar interest to you.

Again, we have a site that extends -- well, you know where it extends from. Bakers Falls to the Battery. There's two segments: The Upper Hudson, Bakers Falls to the Federal Dam in Troy. And the Lower Hudson, Federal Dam at Troy to the Battery. That is our site.

For the interim characterization of the Lower Hudson, we looked at a number of things, similar in scope to what we looked at for the Upper Hudson but of less quantity. If you notice in your report on the Lower Hudson, there's less for it than the Upper Hudson, and there was a reason for it. We had more data for the Upper Hudson. We wanted in a relatively short time to compile all that data, as well as the Lower Hudson data, and bring it to you. Doesn't mean that the Lower Hudson is any less important than the Upper Hudson. There was just a time frame problem.

We looked at -- for the interim characterization which we will build on, we looked at site characteristics of the Lower Hudson; we looked at water quality; we looked at

basin hydrology; we looked at temperature, salinity, and many other factors. It's the kind of chapter that reads, "Well, did you know this about the Hudson? Did you know that the deepest part of the Hudson was in the highlands? Did you know that there is great quality water up and around Poughkeepsie? It's that kind of chapter. We discussed sources of PCBs into the Lower Hudson, an issue. We didn't determine the sources of PCBs into the Lower Hudson. We reviewed other people's data who quantitate the PCB sources into the Lower Hudson.

Again, Phase 1 was using everybody else's information and presenting it to you. That's Phase 1. We did nothing. EPA did nothing in terms of getting additional samples. We reviewed available data for three media of concern, again, for the Lower Hudson: sediment, water, and fish, and we will talk about the results of that data.

We did a qualitative preliminary health risk assessment. We did it qualitatively based on the risk assessment we did for the

Upper Hudson. We didn't do a full-blown risk assessment for the Lower Hudson. Again, it's timing.

And we established foundation for an ecological risk assessment. We looked at the fishery. We looked at the aquatic system, and we developed a conceptual framework for that system. Again to build on.

Before I talk about the sources of PCBs into the Lower Hudson, I want to first talk about one aspect of the site characteristics which we think is important. It's an important finding to us; and that is, most of you know that the Lower Hudson is a tidal regime. What that means is that from Federal Dam at Troy to about Cornwall, which is about river mile 55 -- this is the New York State map. This is the Hudson. Here you can see Albany. We're talking from right around here to right around here, the net flow is down, in general. This demarcation line varies depending on season and flow, but in general it's there.

Since this is an estuary, the denser saline water that comes up out of the bite comes up the river. It's denser. It lies on the bottom up until about 55. We know that this exists because we have salinity measurements. This is a very mixed zone, which creates a two river system -- one river that flows up this way, and one river that flows down this way over that river. It's important when we talk about sources of PCBs to the Lower Hudson to appreciate that.

Let's talk about PCB sources to the Lower Hudson. By far, the vast amount of data that exists for discharge of PCBs into the Lower Hudson is from the upper river. We know that the upper river based on our estimates, our computations of other people's measurements, that that number varies between 1 to 2 pounds per day. What does that mean? You see a lot of numbers. One to two pounds per day, that's about a thousand kilograms per year for those who talk in that language or 2200 pounds per year.

That, by far -- that data that exists for that is by far the most data that we have to determine the PCB sources to the Lower Hudson. We know there are tributaries in the Lower Hudson. People have estimated that there are a certain amount of mass transport of PCBs from that water flow into the Lower Hudson.

We know that there's sewer discharge and combined sewer/stormwater discharge into the Lower Hudson, typically below that river mile 55, at Cornwall, the Beacon Bridge line. We know there's landfill leachate, atmospheric deposition, and direct releases of PCBs into the Lower Hudson.

Other people have quantified these numbers. In our report, we have represented the quantification of those numbers by others. Others include Professor Toman, who did it for 1980, and Hydroqual, who did it for 1987, and there was a study in there by Mueller, for those that are interested. The study was in 1982. I don't know the year he determined the poundage into the river.

Nonetheless, there's sedimentological evidence that indicates that the PCBs in the sewage discharge and the combined sewer/stormwater flow into the river from the New York City metropolitan area -- I'm not saying New York City. It's a big metropolitan area. That input from that sedimentological data is equal to the upper river as of 1984.

Prior to 1984, it was clear that the PCBs were dominated by the upper river flow into the lower river. So since 1984, there has been sedimentological evidence that suggests that that amount of PCBs from the metropolitan area is about equivalent to the upper river.

This slide presents a summary of our findings. Again, we didn't really find too much. We presented a lot of information. We organized a lot of information and brought it to you. But from that organization and that assessment, what we did come up with were a certain amount of charts and figures that show trends. Trends that people know; trends that

people don't know. Anyway, we present it.

In the three media of concern, the sediments, the water and the fish, for the sediments, maximum deposition of PCBs into the lower river was in 1973. 1973 was when the dam outside was demolished sending a down rush of PCBs into the lower river. How do we know that it was in 1973? We know that it was in 1973 by looking at cores, sediment cores in the lower river. If you date the cores and do all the science on these cores, you will determine that there is a spike in PCB concentration at that year. That's how we know that. Since that time, there has been a decrease in PCB concentrations in the sediments in the lower river.

So you have a maximum in 1973. Since 1973, you have reworking of the river, resuspension of the sediments and redeposition, and that has all contributed to a decrease in the load into the lower river as collected and determined in the sediment. Dr. Bopp, who is now with DEC, but at the time he did this was

with Lamont-Doherty, who has done a lot of the sedimentological work on the lower river, has estimated that -- and I think the estimate is as late as 1989 -- that 187,000 pounds of PCB exist in the sediments in the lower river. In addition, there were 87,000 pounds which had been dredged from New York Harbor and deposited into the bite. The margin of error on this is a factor of 2, as he states. We didn't compute this.

For water. Aside from the potable -- the POTWs, public operated treatment works, along the Lower Hudson, aside from that data, the data that exists in the database on water sampling is limited. We have USGS data from 1978 to 1981. Again, we're in the Lower Hudson. Much more exists for the Upper Hudson. That data has suggested that there's been a decrease in concentrations of PCBs in the water over that period. I listed the concentration here. I won't go into the numbers. There's a decrease. It's gone from 10 to 1 in comparison. That's the order of magnitude

difference. Those are not the numbers, for the record.

We do have some spot data in 1986 which indicates that the new levels or the levels of that year were .01 to .04. So it continued to decrease through time.

For the fish, we determined that we believe that the Lower Hudson is capable of withstanding a very diverse fishery. Last night I said that we came up with 140 species of fish. I checked the data. That was based on a 1983 study or '84 study, and a gentleman said that there were 201 species of fish. He was going to send us his report that outlines those species. So it's somewhere between 140 and 201 unless somebody else has another list.

(There was no response.)

No. Okay.

We also -- in plotting a lot of the data collected by the New York State Department of Environmental Conservation, we were able to establish trends in the striped bass. That's what "SB" stands for "striped

bass" in the Lower Hudson. Although after removal of the dam, after about 1976, there was a sharp decline in the PCBs in the striped bass, recently that decline has tapered off and is steadily decreasing. Now, we're awaiting some of the new data in 1990 and 1991 that the Department will make available, hopefully, by 1991 this year, and we'll incorporate that new data into our database.

For the resident fish, the fish that live there and don't migrate, we found no clear trends, and there were only two types of fish that we looked at. We looked at large mouth bass and we looked at pumpkin seed. And for these, we could not report little ups and downs and variability in the data. So we saw no clear trend.

The health risks I will talk about when we get to the Upper Hudson because I told you that it was dependent on the Upper Hudson calculation. That is what we did for the Lower Hudson. That is Part A of the report. There is more in Part A. I can't go over

everything that was presented in your report; but in a nutshell, that's kind of what's in there.

So let's go to Part B, which is the Upper Hudson. Like I said, we did an interim characterization, and we did a few more evaluations. All are interim. Again, we're building a house, a mansion for those that were in Poughkeepsie last night. That was a bad choice of words. But we're building a house. Again, we looked at similar types of things: Site characteristics, sources of PCBs in the Upper Hudson, the nature and extent of the PCBs. Again, we compiled a whole bunch of data to determine the nature and extent of the PCBs of immediate concern. We collected the data, we organized the data, we assessed the data, we evaluated the data. We took no samples. We just took the data that exists.

We synthesized the data to ask a couple of questions, and I will get to that. We initiated -- and I underline it -- transport modeling. We did not create a model for the

Upper Hudson River. Maybe our intent at the start of the project was to do more in modeling than we did; however, there was so much opposition at the beginning to do anything like that and to use all the data that we collected to come up with the conclusions of Phase 1.

So we initiated it. We took a couple of baby steps. So for those that are really into it, it's a very mathematical chapter of the report. What we're trying to do is to reach out for those that have specific comments to modeling so that you can understand the basis from which we will, if necessary, continue that approach. So that's why it's presented there.

We provided preliminary health risk assessment. Okay. Now, there are clearly some who think that that should not have been presented at this time. However, it is EPA's opinion, based on the database that exists, that there is enough data to do a preliminary health risk assessment for the Upper Hudson. I feel that way, too.

We have to do an ecological

assessment and we have initiated that. That is Part B, chapter 7. And, there again, there's so much controversy as to how you do this. It is much more complicated in my mind than doing a health risk assessment. So we bring out what we did to get feedback, to get intelligent controversy, so that, particularly agencies, can tell us how we move ahead. It's not clearly defined. The data is not there, the science is not there in this particular and for this particular site. And so we bring forth that information in the report.

We also bring in Part C, as I said, the feasibility study and we have identified potential cleanup technologies. We have looked at dredging and we have looked at not dredging. We have not made any conclusions. We are making everyone aware of the options that exist for cleaning up PCBs basically in general, and we have screened those technologies, more site-specific screening of technologies which will be carried through the process.

We're in a Superfund process. We have specific rules that we have to follow. There is no deviation. Some may not wish we got this far, but we did, because we have to complete the project within a reasonable time frame and credible time frame.

Let's go into some specifics.

I think I emphasized it twice, and I will emphasize it again. The main focus of this phase was to collect and assess and evaluate other people's data, and that's what we did, and we created a computerized database, the first one for this project.

Previous projects didn't have the technical software and the technical hardware available to do what we were able to do at our desks. By having that capability, we were able to input 2500 sediment samples and 350 -- 3,500 PCB analyses for sediment. For water, we looked at -- we had numerous flow records between those two dates, dating back to the 1920s. For PCBs in the reach between Fort Edward and Federal Dam in Troy, we had -- since the data was collected

mid '70s to 1989, we had 30,000 pieces of information in this database. Many people would like to have a copy of this database. Send a self-addressed diskette, and we will mail it to you.

(Laughter.)

That's not for the record.

In addition, we have 2,000 fish samples, and we have many more for the lower river which I didn't talk about the database for, but we have a database for the lower river, and we have macroinvertibrate samples that were collected by the Department of Health. Limited data for air, plant, and groundwater.

Again I stress here this reads, "In 1990-1991, New York State DEC fish data should be available in December of 1991." That data, once we collect it, will be input immediately into our database. That's the reason why it's interim. In fact, when you think about the word interim and you think about the site, every minute is an interim minute. Unfortunately, we have to end it at some point,

and that's the situation.

Let's talk about the upper river sediments, the one media of concern. There were six surveys done. There were other surveys done, too, but they were not reported by us. The earliest was in 1976 which everybody knows about, and the latest was in 1990 by the General Electric Corporation which at least some know about.

Each investigation had a different intent. And if you read the data adequacy part of our report, it's in Section B 3. It's the last section within that section. B-3 is Part B, the third chapter in B. We present our reasons for why it's difficult to compare between data sets, and that's a key chapter for those that want to know the reason why we can't compare data, which will come up. It establishes trends for that data set, but we can't compare between data sets.

Nonetheless, what did we find as a result of these, reviewing, tabulating, electronically inputting this information?

Well, we know we have wide variations over short distances. If I were to show you -- if you look at a plot, a mathematical plot of the data collected in 1976, you will see at each location data all over the place, PCB data -- high, low, medium, and all over.

Because there are great variations and no survey ever was able to really quantify total mass because of the variation, we have a statement that it's difficult to quantify mass and distributions of PCBs. We learned that.

In addition, we learned from looking at the most recent data provided to us by General Electric in February of this year that PCB values above the Thompson Island Dam are above those that are below the Thompson Island Dam. So you take the Thompson Island Dam, upstream, you got PCB values that are higher than downstream. Now, I am deliberately not saying what those numbers are, because we have determined that there are errors in the way we reported the General Electric data, but we

will correct those errors, and we will submit those to the repositories and to the recipients once we get the right data.

But, nonetheless, this is the same trend that existed in other investigations. Again, I am deliberately not saying in 1976 you had X ppm and today you have Y ppm because we can't really accurately compare the data sets from year to year. We can compare them within a data set but not year to year.

PCBs in water and fish. We have talked about the sediments in the Upper Hudson and now we will talk about what we found in the PCBs in the water and in the fish. PCBs in water and fish tissues declined since the 1970s. Everybody knows that. They have been looking at these kinds of plots for many years. That rate of decline occurred rapidly after the dam was removed up until about 1980. Since that time, the decline has been less rapid. That's a significant point, especially when you talk about half lives, and I am not going to go into the mathematics of it, but it's a significant

point. We're going to get back to this point in a minute.

We found that we were not able to correlate PCBs in sediment and PCBs in fish. We were not able to do that. We didn't even attempt to do it. The data sets were not paired. So even though we ultimately want to determine, "Well, we got this in the sediment; we got this in the fish. We want to determine a relationship between that medium and the fish medium," we were not able to do it because the data sets just weren't there.

I'm going to skip to the next one and then come back to this one.

We found that since 1983 there was no discernible difference in mass load between Fort Edward and Waterford. What does that mean? A graph: This is a plot of PCB concentrations in water at four locations, the four between Fort Edward and Waterford, represented by different symbols. Ignore the symbols. This is time and this is concentration of PCB. So you have a time history of PCBs over

time.

Okay. Now, I made a statement that since 1983, no discernible difference in mass load between Fort Edward and Waterford were observed.

Okay. What that means is -- down here, you see where all these lines come together? That means the same concentration was recorded at each point. So I picked up X concentration at Fort Edward. I went down to Schuylerville, I had that same concentration. I went downstream to the next location. I had that same number, and I went over the Troy Dam, and I had that same number. Oh, Waterford, sorry, and I had that same number. That's what that means. It could mean that it's not picking up additional PCBs, for instance, as it goes through the Thompson Island pool and the various other pools as it goes down for these flow conditions. For these sets of data, that's what we found. That's what this graph means.

But what does that mean in reality? Forget the numbers. That means that

-- the second bullet here -- if you have the same value at each location, that could mean that a significant portion of the PCBs carried by the upper river, the Upper Hudson, enter the water above the Thompson Island hot spots or above Roger's Island either from the remnant area or upstream of the remnant area. So we're saying because we determined the same concentration at Roger's Island as we did everywhere else, it's coming from north of Roger's Island and staying steady the rest of the reach.

Now, there is some deposition, some uptake. We don't know that phenomenon. That's why we're not certain that it exists, but there's reason to believe that this situation does occur. We have remnant deposits that are being capped or are capped. Sorry. They are capped. It's now necessary to collect information once this capping is completed to kind of figure out this picture if the capping has done something.

Okay. Now, before I put this

slide up, I want to go to my notes because I had it set here.

We looked at the data and I reported trends to you in the data and time trends. How did we synthesize this data? What did we look for, or what would we ultimately want to look for? I think we have enough information to say that the PCB problems in the fish are going to -- or the PCBs in the fish will probably govern the remedial action that we do. We need to come up with some decision criteria to determine, "If we do something what is the effect?" And it seems as though if we use the fish that may be a good indicator. Okay.

So we need to answer basically three questions, and we tried to answer these three questions, again, to determine: If we do an action, what is the effect? We need to determine what is the potential for resuspension and redeposition of sediments. We need to determine that. How are PCBs in the sediments transferred into the water column? And we need

to know the relationship between the two; that is, what is the effect of those two in bio-accumulation of PCBs in the fish? Okay.

These are the questions we need to answer to determine if I do this, if somebody dredges, what is the effect? We need to answer these questions. So we made an attempt to begin answering them. We have not answered them.

And in that attempt, we looked at -- the first thing we looked at is flood frequency and scour potential, and we did it a different way than previous people have modeled the river. And what we came up with in our way, and, again, we're looking for intelligent controversy on this if we feel we didn't do our job right, but we think we did, because we thought the data was biased, but we determined that the previous estimates of the 100 year flood were overestimates.

What does that mean? Why is 100 year flood important? Somebody asked that question last night. It's important because it's a relational flood. Everything seems to be

based around a 100 year flood. You don't build things in a flood plain any more. I mean that's based on a 100 year flood. You get flood insurance, things like that. You don't do things at Superfund sites below 100 year flood. That's why 100 year flood is important.

So we looked at the data. We reanalyzed it differently because we now have this database that we can do that with, and we came up with our own projection of the flood, 45,000 cubic feed per second of water versus 60,000 or 62,000 cubic feet per second of water. In our analysis, the 62,000 cubic feet per second of water is the 500 year flood, and that's a flood that is used by others to go through the Thompson Island pool to determine how much material would come out of that pool during that flood. Our estimate shows it as a 500 year flood.

Scouring flows: These are determined by very simple plotting data, suspended sediment and flow. And we found that between 10,000 and 20,000 cubic feet per second

-- that's what cfs means, cubic feet per second -- that there is scour in the bed of the river based on other people's data. Okay.

Why is that significant? Well, it's significant to me because it tells me that now if my hundred year flood is 42,000 cfs, cubic feet per second, and I got scour between 10,000 and 20,000 cubic feet per second, my margin isn't as great as it was when it was 62,000 cubic feet per second. That's what it tells me. It may tell you something else. Okay.

Mass transport: The first bullet is -- and you may say, "Wow! Big finding." The major portion of annual PCB transport occurs during high flows. You know how we know that? We know that because most of the data that we have has been taken during high flows. We have a paucity of data under the low flow situation.

So previous estimates of mass over the dam -- when we computed our estimate, we computed a lower value than other people have computed. The reason being is we corrected for

what -- the approach that we took is we said if you have a lot of data in high flow periods and you just average that data over the whole year, you are going to get a higher estimate of flow over the dam than if you say, well, I recognize there is a bias; you went out and just sampled during this period of time; so I have to correct for that because I know in other periods of time during that year there's a lower concentration. There's lower flow. So that's what we did.

And when we did that, we came up with a different estimate of load over the dam. Again, another piece of information, another fact that will be used in the whole process of coming up with remedial options.

Again, 33,000 is our estimate. What does that mean, 33,000 pounds? The most recent estimate of what exists in the upper river in PCBs is about 100 and -- it's 90 kilograms -- 90,000 kilograms and whatever that is in pounds. Slightly over 200,000 pounds. So if you lower the number that you think went over the dam, and that's a correct number, you are

saying that more has been retained upstream. So that's the relation. Again, this is using other people's information.

The other finding was that empirical trends show PCB load half life of approximately three years in water. Okay. This is not truly a correct statement because if you look at a decline of PCBs over time in water, you will see something like this. It's like, for those that -- it's hyperbolic I guess is the word. Exponential. Okay. If you cut this out, this portion out, this big decline, you get something that looks like this. This trend over time, this half life, is very much different than this half life. So when I say three years, it's based on this half life. The real half life until the flood comes is this, which is much greater than three years -- or greater than three years. Does that make sense? No? Anyway, let's move on. That's the data.

Now everybody's favorite subject. Yes, we did a preliminary health risk assessment. Sorry, Darryl. Again preliminary.

It's a four-step process. Those four steps are listed here. Those four steps are used at every Superfund site without deviation, I'm told. I haven't worked at every Superfund site.

The hazard is from PCBs. That we know.

The dose response, again, is a carcinogenic and a noncancer risk.

Exposure characterization, we will talk about.

You marry all this, and you come out with your risk, and I will show you those numbers.

But, first, let's go to the exposure characterization. This is a figure in your report that pictorially gives potential exposure pathways to you, the people that live on the upper river.

We looked at air. Everybody breathes air. Everybody inhales air. We couldn't pursue that exposure pathway in our risk assessment because we didn't have enough air data to do that. And if we had enough air data, we probably still would not be able to do that at this point in

time because we probably wouldn't know where the PCBs in the air came from, and we're concerned with the PCBs from the sediments in the river. We're not concerned about the other.

Another pathway that we did not pursue is that from eating crops -- you eating crops, your feedstock eating crops. There is just not enough information. I mean we didn't want to push it. There is just not enough information to determine the risks associated with those pathways.

What we did look at, though, is drinking tap water, eating the fish and swimming, bathing and eating the sediments. Those are the pathways that we felt were reasonable to pursue, and we pursued it, and these are the concentrations that we used in that assessment.

These are the values:

An ingestion of water or drinking waters, we used that number. What is that number? That number is the concentrations of PCBs in the river at Roger's Island. That's what that number is, and that's the value we have used.

We assumed no treatment. It's conservative.

The swimming in the water. We assumed the same value, probably at the same location.

For sediments, ingestion and dermal, what we did was we looked at the data in the Thompson Island pool. It's conservative. As I told you before, the data below the Thompson Island Dam suggests that the values are lower. This number is based on the values in the Thompson Island Pool in the upper three inches in the Thompson Island pool and that somebody would bathe in those or come in contact with those sediments.

A VOICE: How regularly would they come in contact with those sediments?

MR. DI BERNARDO: It depends on the age group. If it were between the ages of 1 and 6, it would be seven times a year. If it were between the ages of 6 -- as a teenager, we assume 21 swimming days a year; and if it was an adult, it was seven swimming days a year. So it varies based on age group. And there is a tabulation in the report that provides that in Chapter B6.

Ingestion of fish, we looked at two scenarios. We looked at the 1986 to 1988 confidence bound limit on the mean. Okay. You have a relation, and then you determine the confidence of that relation. And it's that upper bound, that upper confidence bound. And I'm sure some of you have statistics that would be used in this analysis. That number came out to be 12 ppm.

But in order to project into the future based on conditions that existed previously -- and, again, it's only based on conditions that -- the time trend analysis or the data that we have. If we didn't have a flood in the database, then it wouldn't reflect the flood situation. But we took the time trend that we had and we extended that into the future.

We had a very good correlation between fish and water and were able to do this for fish and other things. Sorry. We had a very good correlation between PCBs and fish and other parameters and we were able to do this

projection. This is the average over a 30-year period from 1992 to 2021 or something like that, and we came up with 1.5, again, to predict the future.

So we have current day old data. Okay. We take the old data, and we project it into the future, and we have this. Again, if we had a flood tomorrow, this number may be higher. It's a low estimate.

What did we come up with? For those that read the April issue of Consumer Reports for their automobile, the black dot means unacceptability. The risk for the ingestion of fish is unacceptable, unacceptable to EPA using EPA guidelines.

The scenario 1, which was the 12 ppm number, the risk factor was 2 times 10 to the minus 2 for carcinogenic effects. For noncarcinogenic effects, the value was 51. What's important here is, acceptability to the agency is anything in between 10 to the minus 4 and 10 to the minus 6, and lower, risk factors. We have 10 to the minus 2. It's a higher number

than the number I just stated.

Two times 10 to the minus 2 is like two people in 100 people. Two times 10 to the minus 7 -- no, that's too much. Two times 10 to the minus 5 is like 2 people in 100,000 people. That's what this number means. So when you have minus 2, it's 2 in 100. Minus 5, it's 2 in 100,000. Just add the number of zeroes in the number.

Anyway, we found a slightly more acceptable risk but still unacceptable for the second scenario, the projection into the future. This is based on the data that is in our database. It is not based on our sampling. It is a preliminary assessment of that risk.

We found also that the risks from those other exposure pathways that I presented in the fish diagram are acceptable in all cases.

I think we are taking questions after -- unless it's a quick one.

A VOICE: How do you define non-cancer risk?

MR. DI BERNARDO: Noncancer risk is defined as a hazardous quotient. We can get into the definition --

MR. PAVLOU: Anything greater than one.

MR. DI BERNARDO: I'm sorry. Anything greater than one, that hazardous quotient. It's just a simple ratio with two numbers.

Anyway, where was I? These are the risk calculations. I think there is no surprise. I think -- you know, it has told EPA two things. It's told them that, yeah, let's keep the ban. And we presented our -- we have been able to present all our assumptions to you in this risk assessment, and there could be a lot of intelligent controversy over it. That's another reason why we bring it to you. So we're bringing you numbers, but nothing has changed in reality.

We did a similar risk assessment -- we did not do a similar risk assessment for the lower river. We did a

qualitative risk assessment for the lower river.

Since the fish data, the concentrations in fish in the lower river are similar, of the same order of magnitude to the upper river, we, in turn, determined that the risk would be unacceptable for the lower river. That's the risk assessment we did for the lower river. We did not look at any other pathway for the lower river.

Part C of your report, what we do in about 40-45 pages is talk about things other than what are just here. And what I have shown here is, basically, we have looked at two types of scenarios. One is a nonremoval scenario, and the other is removal. And unless a meteorite lands in the Hudson River, there really is no other method of doing something.

Under the nonremoval, the no-action, as George stated, gets carried through the whole process. Again, we're in a process that is very well defined. We carry that all the way through.

We brought out some containment

methodology, some in situ treatment methodologies. And for those that are interested, you can read those sections of the report. For those that are not interested at this time -- more interested in other things -- this will certainly be in subsequent reports. In fact, this will be in the final report, the feasibility study report. Some of the other stuff may get lost along the way.

For removal, we looked at excavation or dredging. Actually, we didn't look at excavation because we assumed everybody knew what excavation was, and we probably should have made the same assumption for dredging. Anyway.....

The treatment methodologies: Once the material is removed, we took the four treatment methodologies, which are standard, physical, chemical, thermal, and biological; and we subdivide those into the various types for each one, and we give a description, a paragraph or two paragraphs, on each of the ones that we call forth, bring forth.

And then for disposal: We talk about on-site disposal which means around where it will come out, in the river area. Upland disposal. Although we don't talk about any of the sites that have been brought forth by others, that is what it would be, an upland disposal. And then we talk off-site, which means far away.

That's what you have, and much more, in the Phase 1 Report. So, again, what we did in Phase 1 is, we tried to organize -- collect, organize, bring forth all the information that we could, and it was important for us to do that in a relatively short time. It was important for us to bring this information to you in a relatively short time. We evaluated some of the information. We deviate from previous investigators, and we bring our arguments forth in that, and we need to come to terms with those arguments before we proceed, and we welcome the challenge throughout the community interaction process.

But most importantly what we've

done, by bringing all this information together, is we've been able to evaluate the information. It wasn't somebody's study on sediments, and it wasn't somebody's study on fish, and it wasn't somebody's study on macroinvertebrates or something like that. We were able to computerize it, bring it all together, and then relate it. Sometimes we didn't get good relationships. We got bad relationships, but we didn't know that up until now.

So from being able to do all this, we have been able to assess what we feel are data gaps, and we would recommend to EPA, and we have, additional -- these gaps and where we feel we need to get additional data.

So with that, I'm going to hand it over to Doug, who will tell you about the process and the types of information we need early on.

MR. TOMCHUK: I am going to cover some of the activities following Phase 1. But first of all, I would like to say that Al covered a lot of material. There is a lot of

information in our Phase 1 Report. We have executive summaries available for everybody. If you picked one up on your way in, that's a summary. We urge people to go and look at documents yourself because that's the only way you can really understand all the work we did in this study. These documents are available at the information repositories. There are many of these information repositories in the area. There are multiple copies in many of them. Liaison groups have also been given copies, and I hope they are getting around.

Many people will be commenting. The comment period ends October 25. Comments for liaison group members should go through the chairs of liaison groups. For nonmembers, we still invite your participation in the process and comments can be mailed directly to me. Comments given tonight will also be recorded by our stenographer.

After comments are received, we will prepare a responsiveness summary and that will explain how comments will be incorporated

in the future or why they will not be incorporated, and the revisions based on these comments will be considered in the following phases.

We're not planning to reissue this report as it stands. We're just planning to take our foundation, as Al described before, and build off of that for the following phases.

As Al also described, Phase 1 identified some data gaps where we really believe that we need to collect some more information, and so, therefore, we're planning to do some additional sampling.

The data collection will be broken into two parts. There are several reasons for breaking this data collection into two parts, A and B, under Phase 2. Because, first of all, there is some data that we know we need to collect and we need this information now. We need to start -- to initiate the sampling so we can maintain our project schedule. The reasons could be because that we need to base subsequent data collection on this

information. We need time for the data collection such as water column sampling where we have to get high flow and low flow events. So over the course of the year, we need to have the right times. We don't know when that's going to happen. We just need the time to do that. Or we may want to start the data collection before the winter sets in and it gets difficult to sample. In addition, sometimes some of the analyses that we might be doing might take a lot of time, you know, for some of the more difficult analyses in the laboratory.

Unfortunately, for Phase 2A, there will not be time for a public comment period as we want to get out there this fall. We have discussed this at scientific and technical committee meetings, so we've had some of the input of scientists involved with the Hudson River into this process, and we considered what they have to say in our approach to this sampling event.

The sampling plan is now available in the information repositories. In

the future, we will plan to conduct a second phase of sampling, 2B.

I know this gets a little confusing. Okay. We have three phases for the reassessment -- 1, 2, and 3. And we have broken our sampling into A and B. But we, just like -- you know, to show you, here I think it points out that Phase 2B sampling plan is in the Phase 2 workplan which will be released upon the -- after we get all the input from the Phase 1 Report. And we will have the full community interaction process on that sampling information, on that sampling plan.

Some of the activities in Phase 2A that we're planning to do this fall are laid out here. We are going to do some geophysical surveys in the Upper Hudson. This information will provide us with an aerial map of the river bottom so that we understand where sediments are deposited and what type of sediments are in those areas. This is necessary for us to do some of our subsequent sampling activities in the later phases. We're going to do subsurface

sonar, sidescan sonar, bathymetric surveys, sub-bottoms, profiling, and confirmatory sampling for examination visually of texture of the sediments and some laboratory analysis.

In addition, we will be doing some water column sampling in the Upper Hudson, trying to get some low flow conditions this fall. We will be going to ten different locations along the river at different times, trying to get high flow and low flow conditions. That's why we need to start this sampling now. We also have to do the sampling because we need to analyze for PCBs at low detection limits. The water column samples that have been taken at this time are right on the edge of detection limits, if detectable at all by current technologies. And there have been advances in some of the laboratory analyses, so that we're going to use the most up-to-date sampling procedures and analyses to try to find out what the concentrations are in the water now.

In addition, we're going to be

doing some sediment coring in the Lower Hudson mainly, possibly in the Upper Hudson if we have enough time. This is referred to as high resolution sampling, and it's useful in determining the deposition through the water column over time. So how much sediment has been brought over these areas, depositional areas, in the water column and has filtered out, and it will be in relationship to the time throughout. We use a radionuclide dating technique to determine the time portion of it, and you divide these sediment cores into small sections, do the radionuclide dating and PCB content specific analysis to yield a graph which Al showed last night. If I could...

You can see that basically we have deposition on this gotten by radionuclide dating, PCB concentration, and you can see total peaks along the way here how the sediments were deposited.

Following the Phase 2A sampling, or subsequent to it, we'll be developing a Phase 2 workplan after receiving comments on Phase 1,

and this will include the Phase 2B sampling plan, as I said before.

And we welcome your suggestions for sampling that you feel is necessary during this phase of sampling, during the Phase 1 comment period. It's until October 25. We will include plans also for additional analysis and monitoring in the workplan, and we will have a full comment period on this.

Many people are interested in the overall project schedule, also. We originally estimated that this project would be completed in August of '92. We did put a caveat on that saying it depends on the amount of sampling that's required. And based on the results of Phase 1, we have determined that there is more sampling required than we had originally thought. So right now, we're estimating that the study should be completed in the first half of 1993.

Following that -- that's the Phase 3 report at that time. Following the release of the Phase 3 report, we will release a

proposed plan. This is where EPA maps its preferred alternative for the site. There is a minimum 30-day public comment period required by law, and then we will prepare a responsiveness summary to that public comment and incorporate that in the record of decision, and that's the new decision at that point.

Thank you all for coming. I know most of you are here to give us some comments, too. I hope you learned something from our presentation, and I will turn it over to Ann for the question and answer period.

(Whereupon, a recess was taken.)

MS. RYCHLENSKI: Would you please get to your seats. We will be starting up with questions, answers, and comments in just about two minutes. So this is a call to order.

MR. DI BERNARDO: This is mostly for the stenographer. I made a erroneous statement before that I would like to correct. When I was giving the 1 to 2 pound per day I made the conversion to 1,000 kilograms per day or 2200 pounds per day. Those two numbers

should have been 1,000 kilograms per year or 2200 kilograms per year -- pounds! I am reading George's handwriting.

MR. PAVLOU: When Al was making his presentation in terms of what is the load from the Upper Hudson River into the Lower Hudson River, he said -- which was correct -- that we believe that the load is 1 to 2 pounds per day, which translates into 1,000 kilograms a day -- a year, but that was erroneous. What he meant to say that that translated into 300 pounds to 1,000 pounds a year. That's what he meant to say. That's for the record.

MS. RYCHLENSKI: Now that everything is perfectly clear....

Okay. We're going to go right to the question and answer and comment period. Like I said, I will hold you -- I will attempt to hold you, to a three-minute maximum, please, with your questions.

Just please come up to the microphone so that all the comments and questions are clear for the stenographer. We

want to be able to have an accurate transcript so that we can prepare our responsiveness summary accordingly.

And, with that, please come up to the mike and kind of line up and give your comments. And like I said, I will hold you to three minutes or thereabouts.

Thank you.

MR. DECKER: My name is Darryl Decker, D-a-r-r-y-l. I wear several hats, but tonight I am chairman of the government liaison group.

And I first want to thank the EPA for the process that they are using for these public comment periods, both early on. We have had a number of sessions that I have been able to attend. But I do have one negative comment, and that is that the local media had no idea that this meeting was taking place here tonight, and we are getting very poor coverage, and I do wish that we would have some better way of getting the message out. In fact, contacts with the local media indicated that they -- as far as

they were concerned, they had not been notified.

I want you to look around the room first and notice that there are no Mother and Father Hudsons here. There's no big fish flowing around. I thought it was coincidental that -- I understand that there were passes issued from the state home yesterday. There was about 230 passes issued from the state home in Poughkeepsie.

I represent all the governments from -- I think you said Bakers Falls to the Battery, and I just have three or four comments on the Phase 1 Report. The first is that everything that I have seen in that report -- and, believe me, I stand here as a layman. I don't understand a lot of the technical things that are in there. But everything that I have seen in there just confirms and solidifies the position that I took several years ago regarding treatment of the river.

The Upper Hudson is improving itself in terms of PCB in the water column, in

the sediments, in the fish samples, and the various other aquatic life. All the PCB levels seem to be down, and I hope that the Phase 2 data will continue to show that reduction.

I do have a question regarding the -- I'm not going to say it's a question. It's more a statement. It's a statement that I made to you people at various of our meetings, and this is the first opportunity that I have had to say it publicly; and that is, that there are a number of recent experiments which would tend to indicate that PCBs are not as toxic a material as had been previously thought. And to the best of my knowledge, there is no scientific evidence, evidence that PCBs cause cancer in humans.

I was reminded I think by a letter to the editor earlier this week, if it wasn't today, of dioxins which are now, it appears, being deemed far less toxic. I am reminded of the alar situation with apples and the asbestos situation. And I add to that list PCBs, tuna fish, mother's milk. Anything that

you take in excess is liable to be carcinogenic.

One of your articles indicates here that the Phase 1 report does not convey the health risk assessment as a worst case scenario. I am glad to see, first of all, that you didn't do a comprehensive health risk determination. You didn't issue one digit that said that the no-action scenario would result in an overall risk of X. I'm glad to see you kept it in separate considerations, but I would like you to consider that the Phase 1 study did look at health risk in a worse case scenario. It took I think a person of 70 kilograms over a 70-year life span with a 30-year exposure, if I'm not mistaken.

It assumes, for example, in fish consumption -- and the consumption of fish was the most probable high-level source of contamination to a human being of PCBs. But it assumed that a person had 50 meals a year of fish taken from the Hudson River. I suspect that that doesn't in any practical sense occur anywhere. But more than that, we would normally

assume that that person were someone who lived near the Hudson or along the Hudson; and, yet, your own data says that most of the people who are fishing the Upper Hudson illegally travel a distance of 34 miles to get there.

We've got some of the best trout streams in the United States here in the Battenkill and the Mettawee, and I can't imagine anybody traveling 34 miles to try to fish illegally.

The fishing illustration also indicated the assumption of 100 percent absorption of the PCBs from the fish. You would be hardpressed to convince me that that would occur. And it also ignored the fact that there were some studies that indicate that cooking would destroy the PCBs in the fish or eliminate their toxicity.

In terms of skin absorption, you assumed an steady flux.

I've got one minute left? What kind of watch are you using? Okay.

It also assumed that a person who

went swimming swims for 2.6 hours per day in water. Now, I can't imagine when someone goes swimming in the Hudson River that they're going to stay in that river for 2.6 hours at a steady flux or absorbing the water.

You also had these things called the "uncertainty factor" which took the no observed adverse effect level and because you couldn't really measure the potential for toxicity, you simply said, "Okay. We'll take this figure and, aw, we'll multiply it by 10 and say it's 10 times worse than it really is." In some cases, you said it was 100 times worse than it really is, using that to defend the fact that, I think, you are using the very worse case.

The other thing that I think was done, it appears was done, is that you took the collections of the exposures from a sampling location that demonstrated the very highest level of PCBs, again indicating the various -- very highest or worse case scenario. And it assumes or I'm going to assume from that that

you assumed that the same person got the maximum dosages from each of the exposure means, both through inhalation, fish consumption, water consumption, and so on.

I have to tell you that -- this is the conclusion. The Lower Hudson has their problems. The Lower Hudson certainly has their problems, and you people were under a lot of pressure yesterday to support dredging. I guess I'm here in some ways today to ask you to -- not ignore those people. They certainly have a right to their opinion. But all the data that I can see from Phase 1 leads me to the same conclusion that was reached in 1984, a decision, a determination for no action. I think the data is going to continue to show that the river is cleansing itself.

And I want to publicly urge you today to consider recommending no action.

Thank you.

MS. RYCHLENSKI: Just in response to one thing, Darryl, about the lack of media, I have pulled out our mailing list, and I have

checked off 27 different newspapers and radio and TV stations, all totaled, just between Troy and Glens Falls to whom we sent news releases regarding this meeting and also the public availability session that we held last week.

Unfortunately, we can not control. There's -- you know, editors do what they want and put announcements where they please. But if you would like to take a look at it, there are 27 of them just in this upper stretch alone, in the local area, and I'm really sorry if they didn't cover it more adequately. I really wish they would.

If any of them are present here, please give this program some more publicity. It's very, very important. But just so that you do know, 27.

MR. PAVLOU: Thank you, Ann.

In terms of the risk assessment, yes, indeed, we used procedures that are acceptable to EPA and to the rest of the scientific community in the U.S., and our own regulations require that we do exposure

scenarios that we call maximum reasonable exposure scenario. And that's what we did use. Yes, we did go into areas where we did find, you know, the maximum amount, you know, of contamination. We used those. In certain cases, yes, we would assume a certain conservative --

MR. TOMCHUK: We did not use maximums.

MR. PAVLOU: Maximum reasonable exposure scenarios.

MR. TOMCHUK: Right.

MR. PAVLOU: Okay. I'll leave it at that.

MR. TOMCHUK: To clarify. We did not use maximum concentrations. Al showed you the number we did use.

MR. DI BERNARDO: Yes.

MR. TOMCHUK: It was 66 parts per million for sediment, and there are definitely hits in the river currently, even, that are over 100 parts per million. So we did not use a worst case scenario for those things -- you

know, just leave it at that.

MR. SANDERS: Good evening. My name is John Sanders. I live in Dobbs Ferry, New York. I am a geologist and chairman of the Hudson River PCB Settlement Advisory Committee.

I had a little bit of a chance to read over the report. I haven't given it an exhaustive study yet. But there are two points in connection with it that I would like to bring to your attention tonight.

The first is that in your reevaluation of the 100 year flood and that sort of thing, you give the impression in your language that you are ignoring the significance of the first getting the cat out of the bag, if you want to call it that, that took place in the winter of 1973 and the beginning of 1974, when the first gush of remnant deposits came down the river.

The graph you showed here tonight clearly had a peak that was like 1974, and yet in your analysis you tend to emphasize 1976 or maybe it was in 1983 or something. The way it's

written gives the impression that you're ignoring or downplaying that first outlet because the numbers for cubic feet per second didn't get up there very high, but the amount of PCBs transferred was enormous.

So that may just be the way I read it, I don't know, but I think you should look at that part again. I will mark it up and send it.

The other point is that in your attempt to re-evaluate or even deal with the numbers in the earlier data, you spent a great deal of time puzzling over, rightfully, the question of how to treat levels of no detection coming from the different laboratories. You know, you discuss how you handle this and this, that, and the other thing.

I think that is an extremely important point, and that's the other point I would like to make, that is, this: If we now have a satisfactory correlation between the levels of PCBs in fish and the PCB burden in the water column, why can't we go the other way

about and say if we want the fish to get below 2 parts per million, or whatever number you want to assign to it, what does that mean we've got to get the water down to? And then make sure your level of detection is below that, so you aren't cutting off your level of detection in your analysis at some point that's lower than the critical level that you ultimately have to attain.

You don't need to respond to anything at this point, I don't think. Those are just two comments.

MR. TOMCHUK: I would like to say that I hope we do have lab techniques that have detection limits that are in that range. I'm not sure if they are currently available.

MR. DI BERNARDO: I would like to say it's good to see you again. The last time I saw you was a year ago at your last meeting. But I think we have to determine how we use that 2 ppm number in our ultimate cleanup objective and whether that becomes a criterion that will be used at that time. So it may not be. And we

go through some discourse in the health risk assessment chapter to explain what that 2 ppm number means.

MR. SANDERS: Yeah, well, it's on the books. It's the law.

MR. DI BERNARDO: Right. There are other laws, too. Thank you.

MR. LILAC: My name is Paul Lilac, and I'm Supervisor of the town of Stillwater, Saratoga County. I was born on the banks of the Hudson River and still reside there, I'm proud to say. And I'm also very pleased and honored to have served as the vice chairman of the Governmental Liaison Committee for the United States Environmental Protection Agency.

I am not totally surprised by the Phase 1 Report, but I'm somewhat dismayed with the USEPA's recommendation to continue the ban on fishing in the Upper Hudson River from Fort Edward to the Federal Dam in Troy. And I should use the term "total ban" because I'm here tonight to urge for a catch and release fishing

program, and I'll talk just briefly about that.

It's not my intention, nor my ability for that matter, to use any big technical words; but, rather, to get my point across, I am going to try to use something that I wish some of the technical people would use a little more of, and that's common sense.

There's no question that PCBs biodegrade naturally. There is no question that the Hudson River, and specifically the Upper Hudson, is much cleaner now than it was several years ago. There is sufficient documentation that the PCB levels in Hudson River fish have decreased. That filtered throughout Al's report today.

Furthermore, it's absolutely fact -- it comes from a doctor at the New York State Health Department -- that PCBs cannot be transmitted through the skin. Must be ingested, as you said many times, Al.

It's also a fact that the New York State Department of Environmental Conservation about three years ago, following

the necessary public hearings, opened a catch and release fishing program in Onondaga Lake with it's well-documented mercury content. DEC at the same time kept the total fishing ban in the Hudson River, the Upper Hudson River.

I argued the inconsistency of these decisions at the time, and I point it out again at tonight's meeting, because I strongly believe that the USEPA should take a favorable position on recreational fishing in the Upper Hudson. The health risk is not present if people catch the fish and release it.

I represent here this evening the town of Stillwater, and the town board has reaffirmed its strong opposition to DEC's dredging proposal and remains unanimously in favor of a catch and release fishing program.

I also represent the Saratoga County Board of Supervisors and 180,000 residents in Saratoga County. Our county board has taken the unanimous position of opposing the dredging and favoring a recreational catch and release fishing program in the Upper Hudson from

Fort Edward to the Federal Dam in Troy.

Ladies and gentlemen, are we less honest along the Hudson than the people in the Onondaga Lake area are? I've asked this question to the New York DEC, and I have yet to get an answer. If we catch the fish, we can also release it.

I also find it very hard to believe that these fish with PCB levels too high for human consumption know enough to stop at the Federal Dam in Troy and turn around and head back north. And people below the Federal Dam have been allowed to fish, according to DEC's regulations. Does that make sense? Of course not.

I submit to you that, again, PCBs can not be transmitted through the skin and sport fisherman should be able to fully utilize the beautiful Hudson River. We can drink the water. We can swim in the water. Yet we can't catch a fish and throw it back.

On behalf of all the people who live on the banks of the Hudson and all the

people of the Upper New York State region, I urge you to advise the New York State Department of Environmental Conservation to forget the dredging and allow the river to cleanse itself, which it is now doing, and also inform the DEC that the United State Environmental Protection Agency favors a catch and release fishing program in the Upper Hudson River.

And in closing, I just want to tell you that I do appreciate the willingness of EPA to go forth on this process with an open mind. Thank you.

MR. TOMCHUK: I would like to thank you for your comments. There is one point I would like to address specifically, in that there is an exposure route through dermal contact with PCBs. I'm not sure of the exact information you have gotten from the Department of Health, but PCBs are known to be absorbed through the skin.

MR. LILAC: I'll give you the doctor's name, Dr. Nancy Kim. I don't know if she's still there, but she's the one that gave

me the info.

MR. TOMCHUK: Okay. Thank you.

MR. MARTIN: My name is Ernest Martin. I'm the Deputy Mayor of the village of Stillwater. I'm going to make this very short.

Our supervisor from the town of Stillwater has said it very well, and the people in the village of Stillwater agree with our supervisor.

I'd just like to read an exerpt from February 12, 1990, regular meeting of the Stillwater Board of Trustees: "Motion, that a resolution be drafted with notice that we are against the state dredging of the Hudson River for removal of PCBs." We have sent copies to our Congressman, Senator, and Assemblyman. It was a unanimous vote.

And I thank you very much for letting us speak.

MS. REILLY: I'm Kate Reilly with the Environmental Clearing House and co-chair of the Environmental Liaison Group.

The report states that DEC has

put a major emphasis on striped bass fisheries in their PCB studies due to the commercial and recreational value of that species.

The general public, too, may look at striped bass as being the canary of the river, an indicator of environmental quality. So I was particularly interested in the report to see data collected on other chemical and toxic materials in the river. And I was surprised at the lack of information about toxics in the Lower Hudson.

According to the DEC Draft Hudson River Estuary Management Plan, heavy metals particularly cadmium and toxic chemicals particularly dioxins and (inaudible) are found in high levels in the striped bass in the Lower Hudson. The plan indicates that if striped bass commercial fishing had not been stopped because of PCBs, it would have been stopped because of dioxin.

When risk assessments are determined for fish in the reassessment, shouldn't we be looking at this bigger picture?

Will information about these other chemicals be coming in future reports? Is that something that they are going to look at in future reports?

Another question I had was I'm trying to understand the data that was presented for the Upper Hudson, chemicals found in fish in the Upper Hudson. In Table B 320 "other chemicals in fish," they gave a long list of chemicals found in the fish in the Upper Hudson. Are the EPA or Department of Health recommended limits for those chemicals listed anywhere in the study? Are they in a table? Are they in the report at all?

MR. PAVLOU: The purpose of our study was not to study the river in terms of, you know, the bigger picture as you called it but, rather, the effects of the PCBs on the Hudson River and the ecosystem, you know, surrounding it. We never envisioned this study to go beyond that because, frankly, you know, it would have been so complex that we couldn't finish it, you know, within a given period of

time.

In terms of, you know, doing something with respect to cadmium in the Lower Hudson, we do have one Superfund site in Cold Spring, New York, called American Battery, and that is the subject of cleanup by EPA. As a matter of fact, within the next couple of months we're going to be completing the design for dredging portions of the Hudson River there and the East Cove area that surrounds, you know, Cold Spring, and it's going to be a very, very expensive, you know, remediation to the tune of about $90 million, and that involves cadmium, cobalt and nickel. I will leave it at that.

MR. TOMCHUK: We do not have the bulk numbers in our report, for your second question. And I'm sure the Department of Health we contacted for that will look into that for additions to the report for further phases, possibly.

MR. COFFMAN: I'm John Coffman. That's C-o-f-f-m-a-n. I am a member of the citizens group, a resident of the town of Malta

in Saratoga County, and have a special interest in that our son and his family live on the river in the town of Greenwich.

I would like to commend the writers of the report for what I thought a fine degree of objectivity. I will cite one thing in particular, and that's the fact that you showed, correctly I believe, that the level, the concentration, of PCBs is coming down in a geometric pattern and leveling off and has, in fact, reached the point where it has greatly leveled off.

Another thing that the report concludes is that there is no clear indication if and when natural processes could rid the fish of the burden of PCBs. That's stated clearly in the report, and this gives the lie to the flood of propaganda pseudoscience that we've been getting about biological cleanup, which just is not true. In fact, the overwhelming majority of technical people who have studied PCBs in the Hudson recommend dredging as a necessary constituent of any river cleanup.

And I would urge EPA and its consultant to retain their objectivity right on through to that final report. And I believe that if you will do so, you will come out firmly for the dredging alternative.

I thank you.

MR. TOMCHUK: Thank you for your comments.

MR. KENT: Hello. My name is Donald Kent environmental associate for the Hudson River Clear Water.

Rather than restate the more technical comments I had presented at last night's public meetings in Poughkeepsie, I thought it would be more appropriate to attempt to relate to tonight's audience some of the concerns expressed by the Lower Hudson residents.

People waiting to make comments stood in two lines which nearly stretched outside the meeting room. Several commercial fishermen explained how the PCB contamination has affected their lifestyle. One fisherman put

it this way:

"There was a time before PCBs when we could go to our local fish market and see Hudson River striped bass and American eels. That was a time when someone could go to the banks of the Hudson and catch their dinner.

"Just when the Hudson was emerging from a century of sewage and commercial abuse, General Electric endowed our river with a lifetime supply of toxins. It doesn't have to be a lifetime.

"PCBs have become a wedge between the people of the valley and the river. We have allowed a natural system to lose its balance. This is a crime against life which we have to change to correct. We have an opportunity for restoration of not only the biological balance of the estuary but also the social values and responsibilities."

He concluded by saying, "I fully support the effort to hold General Electric fully responsible and accountable for the cleanup of PCBs in the Hudson, given the

overwhelming financial and social damage their negligence has incurred on the river."

This statement is from an individual who attempts to make a living off of fishing in the Hudson River.

Another fisherman, another commercial fisherman was almost brought to tears as he described his 11-year-old son's desire to make his living fishing the Hudson River, desire his dad feels is only a dream while PCBs continue to contaminate the fishery.

Another individual who had spent the previous season working for a commercial fisherman explained that his prior boss had decided not to attend the meeting because after fifteen years of involvement on the issue, he has become so dismayed and disgusted that he thought it would be a waste of his time as it had more to do with politics than people.

There was a 6th grade school teacher who expressed the concerns of her students by describing how they make fun of the kids who drink from the water fountain. While

their fears may be somewhat exaggerated, the stigma of PCB contamination is real.

So you see these people identified very closely with the Hudson River. They are proud of the river and want to see it fully cleaned up. I can't imagine that the people who live here are any different. Obviously, a landfill is unacceptable. G.E.'s pollution was and still is unacceptable.

But what is even more unacceptable is the uncontrolled presence of hundreds of thousands of pounds of PCBs in the Hudson River. These PCBs threaten the health and well being of people from here to Long Island Sound and beyond. G.E. claims that biodegradation will solve the problem of PCB contamination. However, many continue to be extremely skeptical, at best, about the experiments the polluter is now pursuing in the river in what appears to be science by press release rather than bearing the mark of independent research.

I would be happy to discuss the

more technical aspects of Clearwater's position with any interested individuals.

Thank you very much.

MR. TOMCHUK: Thank you for your comments.

MR. HAGGART: Hello. My name is John Haggart. I work for the General Electric company as the technical project manager overseeing your work on the Hudson reassessment project, and I am based in Albany, New York.

I'd like to just take a few minutes to give a few comments on the Phase 1 Report that you put out. And I want to thank you for allowing the open public comment on this process. We recognize you don't have to do this, but you are trying to get at least a dialogue going, and we think that is very usually on this project.

In 1984, when EPA made their decision on the river which included capping of the remnant deposits, an investigation of water supply and a monitoring system, we think that was the right decision based on the data then.

We also believe that the data that's been generated since then only reaffirms that decision and, in particular, when we look at the data from the river and also the new scientific information that has come to light including PCB toxicity and the now-recognized bioremediation work.

One of the most important things I think is the existing data on the river. When we look at -- and as your reports recognize -- the water column information declining dramatically, the fish PCBs levels in the upper and lower river declining, we think that is an important piece of information to recognize; and that trend is only incurred, continued, possibly at a lower rate, but has continued since the 1984 decision.

Another item that is interesting when we look at the lower river, it's now recognized and your report does a very good job of pointing out that in the lower river, the sources of the PCB, the current sources in particular, are not primarily from the upper

river. And it appears that what we're seeing in the lower river is a lower river problem with the PCBs. And while many would like to blame the upper river on it, it's a complex problem.

Even if you look closer, a specific example we get the striped bass, the striped bass kinetics and how they pick up PCBs is very complex. They're a migratory species. And there is a group of people, scientists, who believe that the striped bass do not pick up the majority of their PCBs from the Hudson River at all; that the PCBs are primarily from other areas, including Long Island Sound, and they use other constituents, other contaminants that are found in the bass to support those arguments such as herbicides. That's a very important finding.

The new information on PCB toxicity has been recently submitted to EPA, and it was prepared by an independent research group, the Institute for Evaluating Health Risks. And what they did is employ EPA methods and went back to original studies EPA used to

determine the toxicity of PCBs. And what the study has found is that PCBs are a complex class of compounds and not all of them have the same toxicity. In particular, the PCBs found in the upper river are much less toxic and possibly not carcinogenic at all. And it is not correct for you to regulate all PCBs as if they were one type of chemical. That's very important for the river.

The biodegradation arguments we think are very critical to this proces. And while it is new information, EPA has come out and confirmed it at other locations. It's not just G.E. researchers. EPA researchers have also confirmed this, as have other researchers independent of G.E. G.E. is very committed to pursuing this and is going to spend at least another $20 million, if not more, on the technology. It's very promising.

The last part, I think probably the most important, is trying to recognize what the problem is. And at this point, we really do believe an objective process is needed and that

real science has to be used. There is a lot of opinion. There is a lot of hysteria. There is a lot of innuendo. We really do believe that scientific process is necessary here to make the best decisions. And when that is done, we believe that after our look at the data that EPA will have to reaffirm its original decision; that due to the ecological damage that can be caused by dredging, due to the PCBs being isolated, for the most part, from the environment, becoming more and more isolated, and also degrading, that natural restoration is the right answer in conjunction with the capping of the remnant deposits that has already occurred..

Thank you. We will submit these comments for the record, the written comments.

MS. RUGGI: My name is Sharon --

MR. PAVLOU: I'm sorry. We have a couple of responses.

MS. RUGGI: Oh, okay. I'm sorry.

MR. PAVLOU: Thank you, John, for those comments. Again, I want to reiterate

that, you know, EPA is, indeed, operating in an open mind, and, you know, our -- our decision -- EPA's decision is going to be based on science and the specifics and merits of the PCB contamination in the Hudson River. We have studied, you know, other PCBs problems in other sites, and we did make decisions based on the merits of those cases, as well.

Indeed, the -- you know, the data that we have right now does indicate that the PCBs are declining in the Hudson River as opposed to the early '80s or the late '70s. However, you know, in terms of the concentration of the PCBs in the fish, we believe that they have stabilized, and we took that into consideration as our preliminary risk assessment showed that, you know, the levels, the mean PCB levels in the fish, you know, are currently unacceptable, and we merely reconfirmed, you know, what the fish advisories have said all along. Indeed, in the lower river, you know, we do recognize that based on previous studies there are other PCBs besides the ones that G.E.

discharged, you know, the 1242 and the 1254 into the Upper Hudson.

We do recognize that striped bass is a migratory species; that they, you know, may indeed have picked up PCBs from other sources, as well. We did find other sources of PCBs in those, you know, striped bass, but we did also find the 1254 in the striped bass, as well, one that may have been discharged by G.E. for a short period of time, as well.

As far as the toxicity of the PCBs, we acknowledge the new science that -- you know, that was sponsored by G.E. and done by an independent group. We do have the data. We do have the studies. And we are reviewing it right now. As we mentioned previously, we are using currently acceptable scientific methods. If those methods do change as a result of the new data that was provided to EPA, we would change our risk assessments and our evaluations accordingly. By our remediation works, we do try to encourage new technologies everywhere we go. We did, in a similar situation -- in the

St. Lawrence, we did choose a remedy that supports predominantly bioremediation as the method of cleanup over remediation for that river, as well. And, again, you know, we will, you know, base our decision on the technical aspects and the scientific aspects of the river.

MR. TOMCHUK: I have one or two points to add there. The bioremediation we selected was done in situ, alternative at the other site. Also, I'd like to say that we're using good science as you've suggested and making sure we do a good scientific review of the toxicity report that's been submitted.

Another thing with the Lower Hudson sources, I'd like to mention that the report also states that there is a significant input from the Upper Hudson into the Lower Hudson. That there may be other sources, but we can't quantify those. But we know that there is a significant input from the Upper Hudson in that equation.

Thank you.

MS. RUGGI: My name is Sharon

Ruggi, R-u-g-g-i, and I represent CEASE and I also sit on the Environmental Liaison Committee.

Before commenting on the Phase 1 Report, I want to state that while CEASE, Citizen Environmentalists Again Sludge Encapsulation, could produce a large number of people at this meeting, it has been our policy to not engage in theatrics. As our name states, our issue has always been the creation of a toxic waste dump, which is the only solution ever offered by the New York State DEC. We offer these comments as an organization, and we feel that it is not necessary to ask hundreds of people to say the same thing again and again.

From the data, it is clear that the loading -- from the most current data that you have -- is coming from north of the Thompson Island pool rather than from the pool itself. We can probably assume that this loading mainly came from the remnant deposits which have now been remediated.

We are interested in knowing what

type of monitoring is going on. Was there monitoring before the capping? What is the current monitoring that is going on? And where will the results of that monitoring fit into this process? At what phase will we see the results of that monitoring and get some idea of what effect that capping process has had on the river?

Concerning the health risk assessment, the results are based on a lot of unreasonable assumptions. First, the 1260 standard is used. Why do we not base the health risk on the actual PCBs that are found in the upper river? Why settle for the 1260, when we know exactly what was dumped into the river?

Secondly, the number of fishermen consuming fish, the number of fish being caught, being ingested, is a fictitious number.

And, thirdly, the assessment assumes that there is no fishing ban. The fact is there is a fishing ban. And why should this not be considered when doing the health risk assessment?

While dredging is recognized as an option, there is no mention of the drawbacks of a toxic waste landfill, and we really can not talk about a dredge project without discussing the landfill aspect of it, and we feel that this has to be a part of this process.

Landfilling does violate EPA policy, and there is an awful lot of information out there about the drawbacks of the landfilling of toxic waste which we would like to see that information included in this report.

The Phase 1 Report does not demonstrate that a dredge project would result in an improvement in the fish or the water quality. At what point in this process would this be addressed, that is, the effects of the dredge project?

And then the report does identify the main problem to the commercial fishery coming from lower river sources or a great deal of the problem coming from lower river sources right now. And will these sources be identified? And if you are able to identify

those sources, where will that fit into this process?

MR. TOMCHUK: I will start out discussing the remnant deposit loading. You brought up a lot of good points, and I would like to address several of them here.

There has been monitoring done for the remnant deposit capping project; and as part of our administrative orders with General Electric who carried out that capping, they have done some preconstruction monitoring, construction monitoring, and now we will have to get into some post-construction monitoring. In addition --

MS. RUGGI: When you say, "We," do you mean G.E. or do you mean EPA?

MR. TOMCHUK: Well, G.E. did that under administrative order with EPA.

MS. RUGGI: Okay.

MR. TOMCHUK: Okay. In addition, as I just discussed before, there is the -- you know, there is the Phase 2A Sampling Plan which lays out a plan to do water monitoring in that

stretch of the river. So I think that that information is exactly what we're looking for, the effects of the remnant deposit capping on the river.

The load to the river is not known at this time from the remnant deposits. It has been suggested that it could be from the remnant deposits. All we know is it's from a source above the monitoring point at Fort Edward which is at Roger's Island. So it could be up-river areas, Bakers Falls area, remnant deposit ones, sediments in the river, the other remnant deposits. It could be any source in that area. That's why monitoring is important.

As far as the risk assessment goes with the 1260 standard, that is our currently accepted value, and we have to use that at this time. We're reviewing any new information, all the new information that we have on toxicity of specific aroclors that the -- lower chlorinated ones that were mainly discharged in this area of the river. But until it's accepted by the agency, we're going to be

continuing to use our scientifically accepted standard, and that's 1260.

The number for fish consumption you suggest is high. We welcome any suggestions that you might have on that. We have a basis for that selection. Our risk assessment assumptions are laid out pretty well, we think, how we came up with that number. And we welcome your comments on that. And we may, in the future, try to find out a more accurate number for the consumption of fish in the Upper Hudson. We have to assume that there is no fishing -- well, we know that there -- we have evidence of some people fishing in the Upper Hudson and consuming their catch. So that to say that the fishing ban stops all people from eating the fish is not protective of those people. It's what we refer to as an institutional control. We do know -- it's sort of like a fence. But we know that people trespass beyond fences, and we know people disobey fishing bans, so that we do not count institutional controls in our risk assessments.

MR. DI BERNARDO: Sharon, the reason why we didn't map these things like dredging and landfilling is because we didn't get into that process yet. We looked at each of technologies as individuals. In subsequent phases, possibly Phase 2, we will get more into coming up with alternatives. One alternative may be dredging and landfilling, and then the things that you wished that we had looked at would be looked at at that point. So it will come in subsequent phases.

You also asked about lower river sources and when we would look for those. In Phase 2A -- in Phase 2A, we're not looking specifically for lower river sources. However, what we are doing is we are taking high resolution cores in the lower river and running specific analyses on that, which will be able to fingerprint. One of the reasons why we're doing these cores is to be able to fingerprint where -- hopefully, the fingerprints are not too smudged, but to fingerprint where the PCBs are coming from. That's all we plan to do in Phase

2A.

MR. TOMCHUK: Okay. As far as the down river sources, also. This is a relatively new finding. Well, I mean we just released this report in August. It's a new finding for the agency. The agency has to look at how it will deal with it. It crosses program management within EPA, the Superfund program. It goes into Clean Water Act type regulations, also. And as an agency, we will be looking into how to address that in the future.

MR. PAVLOU: I know it's an early stage yet; but when we do go into the, you know, feasibility study, you know, and we're going to be evaluating, you know, various alternatives, one of them is going to be essentially: You know, if we do decide to dredge, what would the effects of dredging have on the ecosystem in general and the fish by resuspending or by, you know, agitating the sediments? That may cause more harm than benefit. We don't know that, but that's something that we're going to be evaluating before making a decision, but that's

way down the line in the Feasibility Study Phase, which is Phase 3.

MS. SCHMIDT-DEAN: Judy Schmidt-Dean, S-c-h-m-i-d-t dash D-e-a-n. And I'm chairman of the Citizens Liaison Group. And I just have one quick request. The Phase 1 risk assessment assumes that fishermen fish for consumption only. And I'd ask that when you're gathering data in Phase 2, the new data, that you also look at new trends in fishing.

I think in the last ten years, anyone who even picks up a fishing magazine or watches a fishing show knows that fishing has changed now over the years. Fishermen fish for other reasons than just to eat the fish. There's so many more contests, trophy fishing now. Voluntary catch and release, not even mandatory programs. Most fishermen now voluntarily catch and release just to save the fish to catch again.

And I just hope that in the Phase 2 that you would look at new trends in fishing, that perhaps all fishermen aren't fishing just

to eat the fish.

MR. TOMCHUK: Thank you for your comment.

MR. ABRAMOWICZ: Hello. My name is Dan Abramowicz. I'm with G.E. in our corporate research labs in Schenectady, New York. I'm also the chairman of the Science and Technical Committee involved in the RI/FS procedure.

I'd like to just respond for a moment to some comments about the PCB bio-degradation work that G.E. is doing. That work is done under my group under my supervision, and I'd like to address some of the comments that were made about the lies of biodegradation and the skepticism that exists in the scientific community concerning that research.

Our research has shown, first of all, that PCBs are indeed biodegradeable; that there are a wide number of organisms that can, indeed, biodegrade PCBs; and that, in fact, that process is going on in the Hudson River today. And I would like to back up those statements

with facts.

We have published a great deal of work in a number of peer review journals, and I think that that represents some level of support. In addition, the group at G.E., and I would like to acknowledge all of them, is considered by most people in the scientific community to be the world's experts in the area of PCB biodegradation and the area of biodegradation, in general.

One fact that would support that is that in the last two years three people in our group, myself, Donna Vidard, and Frank Mondello, have each individually been asked to submit, by invitation, review articles in the area of PCB biodegradation -- something that's generally considered an honor.

Third, I would like to mention just briefly a group of people who are, I think, very knowledgeable about either the Hudson River or PCB biodegradation who you could go to to get opinions on our research. These people would include:

Richard Bopp of the New York State DEC. Eric Bretthauer, the head of the EPA's Office of Research and Development in Washington. Leo Duffy, head of DOE's environmental efforts; Clyde Frank, his vice chairman.

You could talk to a number of people in EPA's research laboratories in Gulf Breeze, Florida, including Peter Chapman and Hap Pritchard.

Professor Barry McCarty at Stanford University. Professor Joe Suflita of the University of Oklahoma. You could speak with Jim Lake in the EPA labs in New Bedford Harbor, who has discovered exactly the same process going on in those environments. You could speak with Yull Rhee of the New York State Department of Health, Gary Sayler of the University of Tennessee, John Rogers of EPA's Athens lab, Professor Larry WacKett of the University of Minnesota. In the EPA Cincinnati Risk Reduction Laboratory, Pat Sferra and John Glaser.

I could provide a much more detailed list given enough time, and I'd ask that in the future when the widespread and well-known skepticism about our research is mentioned that some facts be provided to support that.

Thank you very much.

MR. TOMCHUK: Thank you.

MR. JAHAN-PARWAR: My name is Behrus Jahan-Parwar. I am in a research position, a research professor for environmental health and toxicology with SUNY School of Public Health in Albany, New York.

This Phase 1 Report is a very impressive collection of data and review of literature on PCBs in the Hudson River. However, I think it is deficient in at least two areas.

In the area of risk assessment, they are using primarily mortality data and carcinogenicity as indicators of environmental toxicity. While these indicators are important, they do not provide any information about subtle

health effects of PCBs.

I have been in the past several years studying the PCB effects on nervous system and behavior, and we are finding that very low concentrations of PCBs can have serious neurological deficits in some model preparations in animals we have been working with.

So what I would like to suggest is rather than at this stage going and spending millions of dollars in dredging the PCBs, picking it from one place and placing it into another place, is to put some more -- invest some of that money in research so we can understand better how these pollutants alter the quality of health.

I have another problem with this, and that is that in all these reports and standards used by EPA, the total PCB levels are used as an indicator of toxicity. We know that PCBs are 209 congeners, and we also know that not all congeners are created equal. We have shown in our research, for example, that if one expose the animals to a broad spectrum meat

mixture of PCBs, several arachis, the PCBs congeners are distributed differentially to different organs.

What that suggests is that the individual congeners or different congeners may have different physiological functions. What we need, again, is funds to support basic research so we can understand or better understand which PCB congeners are toxic and to find better indicators (inaudible) toxicity before we go and invest a lot of money in dredging the PCBs from the river and putting it somewhere else.

Thank you.

MR. TOMCHUK: Right now we are studying what remedies are appropriate, if any, under the Superfund program. I don't think we can support basic research under this program. But I recognize the need for that information out there, and I hope that other institutions can do that research. And I would like to thank you for your comments.

Does anybody else have any comments at this time?

(There was no response.)

MS. RYCHLENSKI: Okay. If that's all the comments for the evening, I would like to wish you good night. Thank you all for coming out here. I'm sure we're going to see each other again soon. If you have any questions, give me a call. If you have any other comments, get them to your chair people if you are a member of the liaison group. If not send them to Doug. Thank you. Good night.

(Whereupon, at 9:53 p.m., the proceedings were concluded.)