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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

DRAFT

United States Environmental Protection Agency
Hudson River PCBs Reassessment Remedial Investigation/Feasibility Study (RRI/FS)
Community Interaction Program

Hudson River PCBs Oversight Committee Meeting
January 26, 1999
Saratoga Springs, NY

On January 26, 1999, a meeting of the Hudson River PCBs Oversight Committee was held at the Inn at Saratoga, Saratoga Springs, NY. The EPA team present consisted of William McCabe, Deputy Director of Superfund Program for USEPA Region II, who chaired the meeting; Ann Rychlenski, Public Affairs Specialist and Community Relations Coordinator for the Hudson River RRI/FS; Doug Tomchuk, Remedial Project Manager; Mel Hauptman, Branch Chief; and Alison Hess, Project Manager. In addition to Mr. McCabe, members of HROC and presenters in attendance included:

- Judith Schmidt-Dean, Chairperson of the Citizen Liaison Group;
- Tom Borden, Chairperson of the Agricultural Liaison Group;
- Dave Adams, substituting for Darryl Decker, Government Liaison Group;
- John Santacrose, Chairperson of the Environmental Liaison Group;
- Andy Carlson, State Health Department Bureau of Environmental Exposure Investigation;
- John Dergosits, NYS Canal Corporation;
- Walt Demick, New York State Department of Environmental Conservation (DEC);
- Mel Schweiger, GE Hudson River Project.

The agenda for the meeting is Attachment 1. Sign-in sheets are found in Attachment 2. The use of brackets - [] - indicates clarifications made by the writer in cases where otherwise the text would be unclear to those not at the meeting. Copies of the audio tapes recorded at the meeting are available on request.

Mr. McCabe opened the meeting with a brief project status update, commenting on the ambitious schedule and the amount of activity that has occurred to meet it. Events since the last HROC meeting include:

- Release of the Low Resolution Coring Report in July 1998;
- Release of the SOWs for the Human and Ecological Health Risk Assessments and the Feasibility Study (July through September 1998);
- Conduct of the first peer review in July 1998;

- Release of the peer review report in January 1999;
- Start of the second peer review on the Data Evaluation and Interpretation Report (DEIR) and Low Resolution Coring Report in January 1999; and
- Release of responsiveness summaries for the Database Report, Preliminary Model Calibration Report (PMCR), and DEIR.

Mr. McCabe commented that the pace will continue. Upcoming events include:

- Second peer review meeting, March 1999;
- Release of the peer review report following the meeting;
- Release of responsiveness summaries for SOWs previously mentioned within a few months;
- Release of a responsiveness summary for the Low Res Coring Report in February 1999;
- Release of Baseline Modeling Report in May 1999; and
- Release of responses to first peer review dealing with modeling also in May 1999.

Mr. McCabe spoke briefly about EPA's announcement in December 1998 regarding potential early action in the Hudson River. He stated that EPA had found no feasible alternatives that could be taken to accomplish an early action with respect to the sediments in the Hudson River. The final report will be released within a couple of weeks [of the January 26 HROC meeting].

With regard to the on-going removal assessment at Rogers Island, Mr. McCabe said EPA had received all the data as of January, and these data, along with the GIS map of the data, will be given to the risk assessment contractor; turnaround for the report is expected to be approximately 30 days. EPA will then make a decision on the potential removal action, anticipated within a couple of months following the report.

Ed Horn from the New York State Department of Health (DOH) provided an update on the joint DOH/DEC fish advisory effort. The effort is aimed at increasing awareness of the health advisories issued for the lower river; anglers south of Troy have proven to be less aware of advisories than elsewhere in the state. Mr. Horn stated that the main reason for this is that fishing licenses are not required in this part of the river; disbursing information as part of the fishing license process has been the primary means of communicating the health advisory information.

EPA provided a grant to DEC for the project, and efforts have begun to identify lower income and ethnic minority groups in the lower Hudson that surveys have indicated are least aware of the health advisories and possibly more dependent on fish as a dietary supplement. Initial ideas for increased awareness include signage in known fishing access points (involving almost 400 miles of shoreline) by spring of 1999; creation of a cadre of "rangers" to work with anglers and community groups; and determining how to inform secondary groups such as women, children, and others who receive fish from anglers and would likely be totally unaware of the advisories. A public service announcement is also under consideration. DEC also has a smaller grant to extend the outreach into the New York City area.

John Haggard of GE introduced Jim Ray of QEA to report on the GE's 1998 data sediment and water column data collection program. His presentation is Attachment 3. The sediment coring program (Focused Sediment Program) had two objectives: to examine 16 locations where EPA had concluded that

substantial mass loss had occurred within the Thompson Island Pool (TIP) between 1984 and 1994, and to look at PCB concentrations in areas that had been sampled in 1991.

The Focused Sediment Program was intended to assess the condition of the aforementioned 16 sites in 1998, on a tri- and higher basis. Mr. Ray's exhibit showed a configuration of data that, he said, would indicate a 60 percent mass gain between 1994 and 1998, using a "similar calculation to what TAMS did in their report." He stated that GE did not believe that there was an 80 percent mass loss of tri- and higher between 1984 and 1994; neither did GE believe there was a 60 percent mass gain between 1994 and 1998. GE feels that there are "a number of limitations" to what Mr. Ray termed a "point-to-point estimate," and he stated GE has commented extensively on this.

Mr. Ray stated that GE also tested those 16 locations for other sources of information. Mr. Ray cited surface evidence of Berilium that he says is indicative of recent deposition; surface sediment Cesium concentrations that GE feels are inconsistent with deep scour that they say would need to occur to cause mass loss of 30 to 40 percent; and PCB concentration and composition profiles indicative of burial. Mr. Ray further stated that maximum concentration of PCBs is at depth in GE's 1998 cores, and that those particular cores also show a vertical trend of dechlorination status.

The second program, focusing on areas EPA had sampled in 1991, was a composite program where material collected at ten stations were combined into batches of material for a single analysis of each batch. Mr. Ray said that GE's comparison of composite 1988 data and composite 1998 data showed "no significant or wholesale changes in total surface sediment PCB concentration" between the two. He stated that there was a lot of variability but that on average the concentration went down "on the order of 10 ppm."

In summary, Mr. Ray reiterated some of his previous observations and stated that GE feels burial rather than mass loss is occurring in areas EPA has characterized as having mass loss. He said there is "no evidence" of extensive mass loss in the 1990s. Mr. Ray further stated that GE feels that the mass loss calculated [by EPA] for 1984 to 1994 is an "artifact technique," and that "surface sediment Cesium is inconsistent with an extensive scour in those areas - focusing on those 16 areas. Beryllium in surface sediments of 70 percent of those cores suggest there has been recent deposition."

With regard to GE's water column monitoring program, Mr. Ray stated that weekly sampling done at six stations between the [GE Hudson Falls] plant site and Schuylerville include two stations at the Thompson Island Dam at the western wing wall and a location downstream of the dam in the center channel. He stated that GE found a "sampling bias" at the station on the wing wall in 1997, and added the "unbiased" downstream location in 1998 to determine what that bias meant. He stated the "biased" station indicated a "disproportionate amount of PCBs coming from the Thompson Island Pool area, and very little as you move downstream to Schuylerville, which is inconsistent with what we know about PCB distribution in those sediments." Mr. Ray further stated that "with unbiased data you get almost a linear increase as you move from Ft. Edward to Schuylerville, indicating...contributions from the sediment deposits on the same order that we see from the Thompson Island Pool."

Finally, Mr. Ray described an analysis that assumed that porewater diffusion was the source of PCBs in the water column. After calculating what a sediment "would have to look like to give us that water column signal," GE compared the signal to 0- to 2-centimeter data from 1998 and deeper sediments from

"an earlier program EPA conducted," and concluded that the signal [GE sees in the water column] "very closely" matched the signal from the 0- to 2-centimeter sediment signal from the 1998 data. Mr. Ray stated there was a poor match to the signal from the deeper sediments. GE therefore concluded that [PCB levels in] "water coming out of the Thompson Island Pool has been derived from surface sediments on the order of a couple of centimeters and not material that is deeply buried and dechlorinated." In response to a question on how GE tested the match, Mr. Ray said visually; no statistical analysis or any rigorous analysis has been done on the closeness of the match as yet.

Ann Rychlenski provided a status of the Scenic Hudson TAG grant in response to a request previously made by Judy Schmidt-Dean, Chairperson of the Citizen Liaison Group, for information regarding the TAG grant Scenic Hudson has received from EPA. A letter and a file of information have been provided to Ms. Schmidt-Dean providing the requested information. Ms. Rychlenski said that the EPA TAG grant specialist, Carol Hemmington, would be available to address any additional questions Ms. Schmidt-Dean might have. Ms. Rychlenski stated that Scenic Hudson is having TAG-retained specialists look over EPA documents to date in order to comment upon them. A report is forthcoming.

To date \$4,351 has been spent. The technical assistance reviewers are Dr. Ian C.T. Nisbett of Nisbett and Co., North Falmouth, MA, and Dr. Steven Effler of the Upstate Freshwater Institute in Syracuse, NY.

The round table discussion followed.

Judith Schmidt-Dean, Chairperson of the Citizen Liaison Group. Ms. Dean brought up the outstanding request for a forum with EPA and GE for the Liaison Groups and any other interested parties. She stated that GE had been heard from at this meeting, but "not the other end." She inquired as to the status of a forum such as the one suggested. Mr. McCabe stated that as had been said in the past, once EPA had reviewed GE's information and had a chance to comment, EPA would look to set up a meeting. He stated that this has been done, and EPA needs to look into such a meeting. Any such meeting would have to be fit into the existing schedule.

Tom Borden, Chairperson of the Agricultural Liaison Group. Mr. Borden supported Ms. Schmidt-Dean in her interest in a forum. Further, he commented that [members of the community] are "seeing things in the paper we haven't heard anything about," particularly in the form of news releases. He asked if it is out of line for the chairpeople to see the news releases before they appear in the paper. Ms. Rychlenski said it is not out of line. She generally sends out a letter summarizing what is going on, but if the chairpeople want copies of the news releases, she will send them also.

Andy Carlson, State Health Department Bureau of Environmental Exposure Investigation. His organization is reviewing, on an ongoing basis, the various Reassessment documents. The Health Department initiated an independent study to determine whether fish take up PCBs from the water column or the food chain. Field work is complete and lab work is being done at this time. As soon as those data and the reports are ready, they will be made available.

John Santacrose, Chairperson of the Environmental Liaison Group. Mr. Santacrose has nothing to report.

Walt Demick, NY State Department of Environmental Conservation, Bureau of Remedial Action. DEC is currently reviewing Reassessment documents, and at this time is also developing proposed remedial action plans for two sites based on studies at the Hudson Falls and Ft. Edward GE plants. These proposed plans have been undergoing stringent review.

Mel Schweiger, GE Hudson River Project. Mr. Schweiger reported that GE did a lot of work in the last construction season with DEC oversight at the Hudson Falls plant site and in the river at that site. This included an extensive seep collection system in the river, at the base of the falls. GE has not changed its views about what is happening in the Thompson Island Pool, and about the source of PCBs to the fish.

Dave Adams, substituting for Darryl Decker, Government Liaison Group. With respect to the peer review, Mr. Adams felt the fact that peer reviewers were "basically restrained from commenting on the adequacy of the data" was not a "proper restraint and seems contrary to one of the general questions of the charge: if a data set utilized to prepare a report was sufficient...."

Mr. Tomchuk responded that, as he had said at the [peer review] meeting, there was no absolute charge question "Was the data set in itself adequate, although the general question did get to that." What [EPA] did want to hear from the reviewers was feedback if the reviewers had a problem reaching a conclusion because the data were inadequate. The first general charge question said "Is the data set utilized to prepare the DEIR and Low Res Coring Responsiveness Summaries sufficient to understand the fate and transport of PCBs in the upper Hudson?"

Mr. Adams, citing the fact that EPA has stated it is finished collecting data, said that if "these steps show that the data is not adequate," he hoped EPA would not "push to an answer that may not be correct, or that fits theories put in place before everything was looked at." Mr. McCabe reiterated EPA's previously stated position that it has sufficient information to make a decision; however, he said, "that's the beauty of peer review." The first peer review came up with some suggestions and recommendations, which EPA will follow. EPA will listen to this peer review also, and if "they tell us...we're all wet, we're going to have to reevaluate it."

With regard to the responsiveness summaries, Mr. Adams expressed concern with what he felt were issues left open and "incomplete responses." Mr. Adams then discussed several specific comments and their responses. In one case he felt the responses were conflicting between the two summaries, and in another case he expressed concern over use of lower Hudson River data for estimating upper Hudson River values in a certain instance where upper Hudson River data were not available. Mr. Adams said he does not consider "lack of data as an adequate response" for "having to make guesses...." Finally, in several cases he took issue with the content of the responses.

One of Mr. Adams' main points was that with regard to the sediments in the Thompson Island Pool being the source of PCBs leaving the pool, he feels that what is not clear is what sediments are important: "the hot spots as EPA claims, or all sediments, as GE claims." Mr. Adams proposes that temporarily stored PCBs from the Allen Mills failure could be the source of PCBs in the water column, and recommends, now that the source has been eliminated and the stored PCBs are depleted, data continue to be taken and analyzed. Finally, with regard to the modeling, Mr. Adams referenced a comment drawn from one of the preliminary modeling calibration peer reviewers the perhaps "we are trying to get more out of the models and be more sophisticated in our analyses than the available data and our knowledge of the river and [its]

behavior justifies." He suggested looking at overall trends in PCB water and fish concentrations after the PCBs are shut off from upstream as an indication of what will happen in the future

John Dergosits, New York State Canal Corporation. Mr. Dergosits stated that preliminary data suggests that over the course of the last year, the Champlain Canal channel between Troy and Ft. Edward has gained approximately 32,000 yds³ of sediment. Total load is approaching 500,000 yds³; current actual is approximately 470,000 yds.

Doug Tomchuk, USEPA RPM. The second peer review is scheduled for the week of March 15, probably the 16, 17, and 18th. As per EPA's commitment to quarterly Steering Committee meetings, one will be scheduled for April. The next HROC meeting will be in July.

Mr. McCabe opened the meeting to questions and comments from the audience.

Merrilyn Pulver cited recommendations from the preliminary modeling calibration peer reviewers for "major changes and revisions" to the model. She called the model "the most important tool EPA has to determine future conditions in the river," and called for the peer reviewers' comments to be taken seriously. Ms. Pulver questioned EPA's "statement in the press that most of the peer reviewers' concerns were satisfied even before the peer review panel met." She asked what concerns were satisfied, and why the peer reviewers were not provided with information that so indicated.

Further, she asked if there would be a revised modeling report, if such a report would be peer reviewed, and how the public would know that EPA has incorporated the peer reviewers' changes. Will the public be informed what recommendations are not incorporated if EPA chooses to do that?

Mr. McCabe reiterated that EPA is scheduled to release the peer review report and will respond to the peer reviewers' comments and recommendations. That the response, as well as the Baseline Modeling Report, will be out in May [1999]. This response will address Ms. Pulver's questions as to which recommendations were and were not addressed. Mr. McCabe said that EPA learned a great deal from the first peer review, and also commented that perhaps EPA had "rushed into it a bit too quickly." With regard to the information Ms. Pulver had heard was "already being dealt with," Mr. McCabe said that the information was in the Statement of Work for the Baseline Modeling Report. That the information was given to the peer reviewers, indicating certain things EPA was going to do but had not yet done. The peer reviewers felt it appropriate to make recommendations based upon what actually had been done. For the upcoming peer review, EPA will see that the peer reviewers have all the information EPA has available to use in making their judgements.

Mr. Tomchuk added that one problem reviewers will have is that the Low Res Coring Responsiveness Summary was not out at the beginning [of the current peer review process]. Regarding the first peer review, the Scope of Work for the Baseline Modeling Report was not included in the original package sent to the reviewers, nor was the response to comments made by the public, so the reviewers did not have the full period to review those documents. That the may also be why some of this information might not have been incorporated into the first set of comments.

Ms. Pulver referred to a question she had raised at the last HROC meeting regarding the 160-square-mile zone along each side of the river if a dredging solution is reached. What other rivers has had this type

of area designated? What are EPA's intentions for this area? Will private property be taken within the area? Will EPA commission another landfill siting study to identify potential sites within this 160 square miles?

Mr. McCabe stated EPA never intended to expand the official site designation to include the 160 square miles. The area in question was so designated in order to develop and cost out alternatives for near-river vs. away-from-the-river remedial action. The official site designation is the Hudson River itself. Ms. Pulver's other questions are not relevant.

Ms. Pulver again voiced the complaint that news releases are appearing without the liaison groups chairpersons' being informed of what was coming. Ms. Rychlenski restated that the chairpeople will get everything.

Ms. Pulver addressed the ten remedial scenarios in the Scope of Work for the Feasibility Study. She stated that the only information provided was the approximate location, and asked if EPA had begun to analyze the scenarios. Mr. Tomchuk said that the scenarios Ms. Pulver referred to were in the section on Remedial Action Objectives, looked at in the process of trying to set a goal for cleaning up the site. EPA has not yet started the detailed analysis. Ms. Pulver asked to have all engineering specifications for each of the scenarios, proposed amounts of material to be removed, potential depth of dredging, potential capping material, etc. She stated a lot of questions are raised at town board meetings and she feels the town needs to have the same information EPA has as it goes along. If [the towns] wait till EPA's feasibility strategy is complete, there will not be enough time for review and to fully evaluate the information.

Mr. McCabe explained that information is compiled into a draft report and reviewed internally (with the state, for example) before it is sent out. Prior to the draft report, EPA only has segments of information, which would not be released. He stated there would not be enough time to introduce another step and release the draft information to another party in between EPA approval and the public release. Mr. McCabe stated everyone would have ample time to review all the material. Ms. Pulver suggested a meeting with TAMS and the town engineers, so the process could be explained. Mr. McCabe agreed to consider that. The problem is that some of that information - such as what is dependent upon the risk assessment and on the modeling - is not available yet. Until that is complete, the information Ms. Pulver is seeking does not exist.

Ms. Rychlenski commented that it had occurred to her that press releases are sent electronically, so even if she puts something in the mail to the chairpeople, the press would still have it first. She requested anyone to provide her with a fax number or e-mail address to help her work something out.

Mr. Haggard asked if the same procedure would be employed at the next peer review as was used at the earlier one. He wanted to know if there would be opportunity for comment. Mr. Tomchuk stated there might be some changes, but there would be opportunity for comment.

Another speaker commented on Dr. Ray's report saying the PCB congener distribution pattern in the water was similar to that in the sediments and in Aroclor 1242. He said this is not a distinctive characteristic of his latest chromatogram; it is also shown by TAMS' chromatograms in the DEIR. The raw data is pretty much the same in both cases.

**HUDSON RIVER PCBs REASSESSMENT
OVERSIGHT COMMITTEE
MEETING**

Tuesday, January 26, 1999

7:30 p.m.

The Inn at Saratoga, Saratoga Springs, New York

A G E N D A

Welcome & Project Update

Bill McCabe
Deputy Director, Superfund
U.S. EPA

Fish Advisory Project Status

Ed Horn, New York State Dept. of Health

Report on 1998 GE Data

John Haggard, General Electric

Steering Committee Action Item:
Status of Scenic Hudson TAG

Ann Rychlenski, Community Relations
Coordinator, U.S. EPA

Question & Answer Period

US ENVIRONMENTAL PROTECTION AGENCY
HUDSON RIVER PCBs REASSESSMENT
REMEDIAL INVESTIGATION/FEASIBILITY STUDY

Community Interaction Program
Hudson River Oversight Committee Meeting
Saratoga Springs, NY
January 26, 1999

NAME	ADDRESS	AFFILIATION/TELEPHONE
W. Demick	Albany	NYSDER
Ed Horn	"	NYSDOH
William Rorts	Albany	NYSDERC
Tim Rhea	Syracuse	DEA
John Brown	Schenectady	GE-CRD
Dave Adams	216 Mose Rd. Charlton, NY	M.W. T. Train Law, Co. P.M.C.
George Hodgson	50 W. High St. Ballston Spa, NY 12020	Saratoga County Environment Mgt. Council
Kathy Cooke	Alb	NYS Comptroller's office
Pat H. H. G.	Schenectady	NYFB

**US ENVIRONMENTAL PROTECTION AGENCY
HUDSON RIVER PCBs REASSESSMENT
REMEDIAL INVESTIGATION/FEASIBILITY STUDY**

**Community Interaction Program
Hudson River Oversight Committee Meeting
Saratoga Springs, NY
January 26, 1999**

NAME	ADDRESS	AFFILIATION/TELEPHONE
John Scutacore	80 Box 3705 Albany, NY 12203	ASHY/AL + Environmental L. group - Chair
Carl DEPPE	28 THOMAS HUDSON FALLS 12839	CEASE Environmental Group
Judy Schmalzer	1 Ferry St Saratoga Springs, NY	Cet La Pom
Margery Paulsen	2843 City Rte 46 Fort Edward, NY	Ag Group, CEASE
Rock Sheldon	Glenville, NY	GE-CRD
Mel Schweige	1 Computer Drive Albany, N.Y. 12205	GE-CEP
Tom Borden	2841 Valley Falls Rd Saratoga Springs NY	Ag Liaison Comm.
Jan Birch	" "	Farm
Andrew J. Sweeney	285 Broadway Saratoga Springs NY 12866	Office of Rep. John E. Sweeney

US ENVIRONMENTAL PROTECTION AGENCY
HUDSON RIVER PCBs REASSESSMENT
REMEDIAL INVESTIGATION/FEASIBILITY STUDY

Community Interaction Program
Hudson River Oversight Committee Meeting
Saratoga Springs, NY
January 26, 1999

NAME	ADDRESS	AFFILIATION/TELEPHONE
Marial Trieste	463 RT32 Schuylerville NY	Trieste Associates
John Delgrosso	200 Sutton Blvd Albany	NYS Canal Corp.
Kate DeGroot	18 DeGroot Rd Fl. Edwards, NY	Cit. LaComm

SUMMARY OF GE 1998 SEDIMENT AND WATER COLUMN MONITORING PROGRAMS

- Overview of the Programs
- Sediment Coring Programs
 - Evaluate the Fate of Sediment-bound PCBs
- Routine Water Column Monitoring
 - Update on Plant Site and Sediment PCB Sources

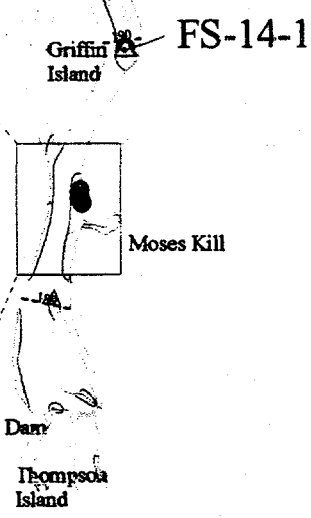
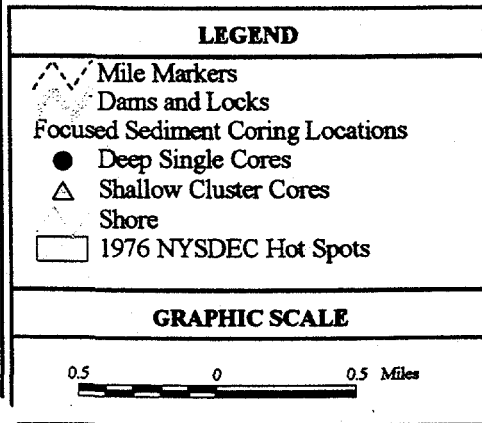
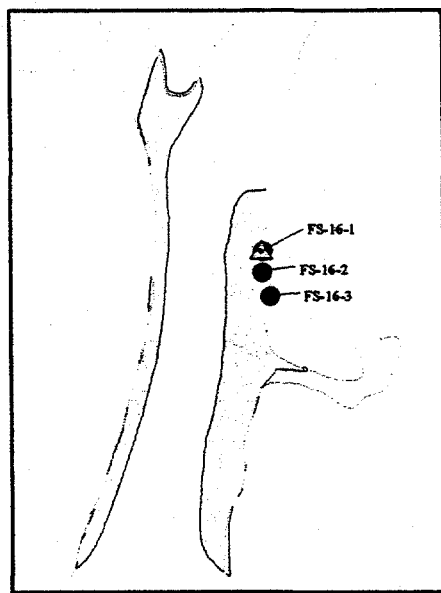
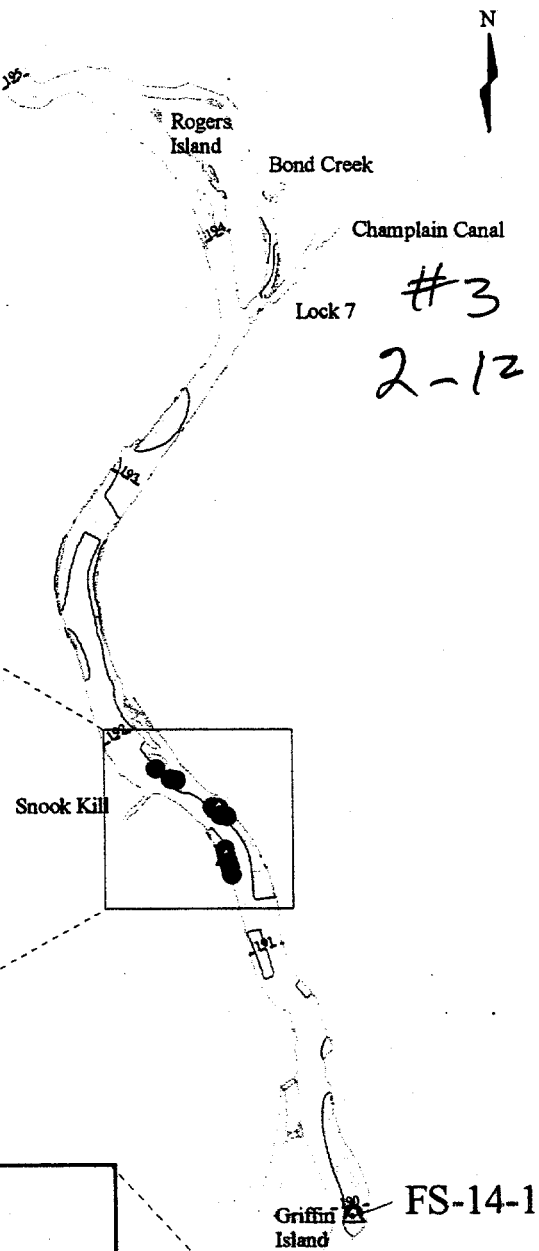
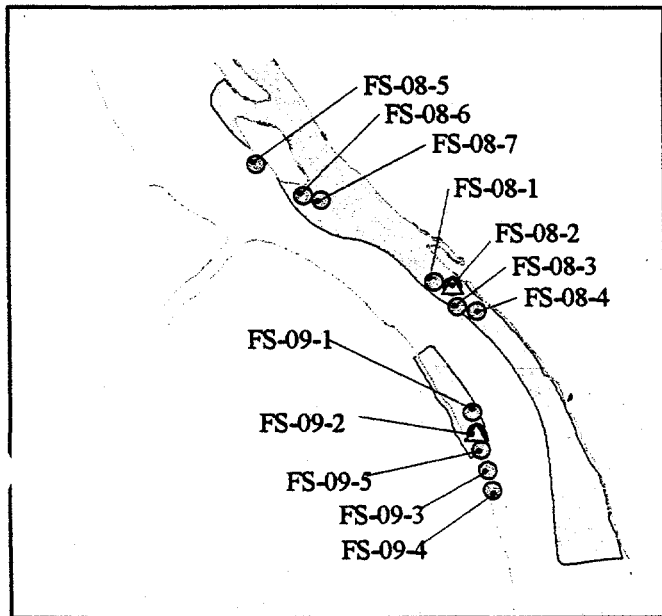
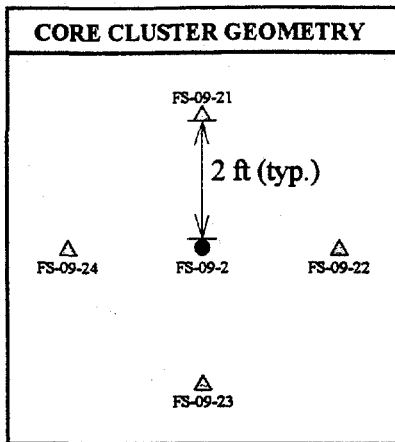
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Attachment 3
1-12

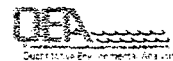
SEDIMENT SAMPLING PROGRAM OBJECTIVES

- Examine Sediments at 16 Locations where EPA Concluded Substantial PCB Mass Loss had Occurred between 1984 and 1994
- Evaluate Changes in Surface Sediment PCB Concentration between 1991 and 1998

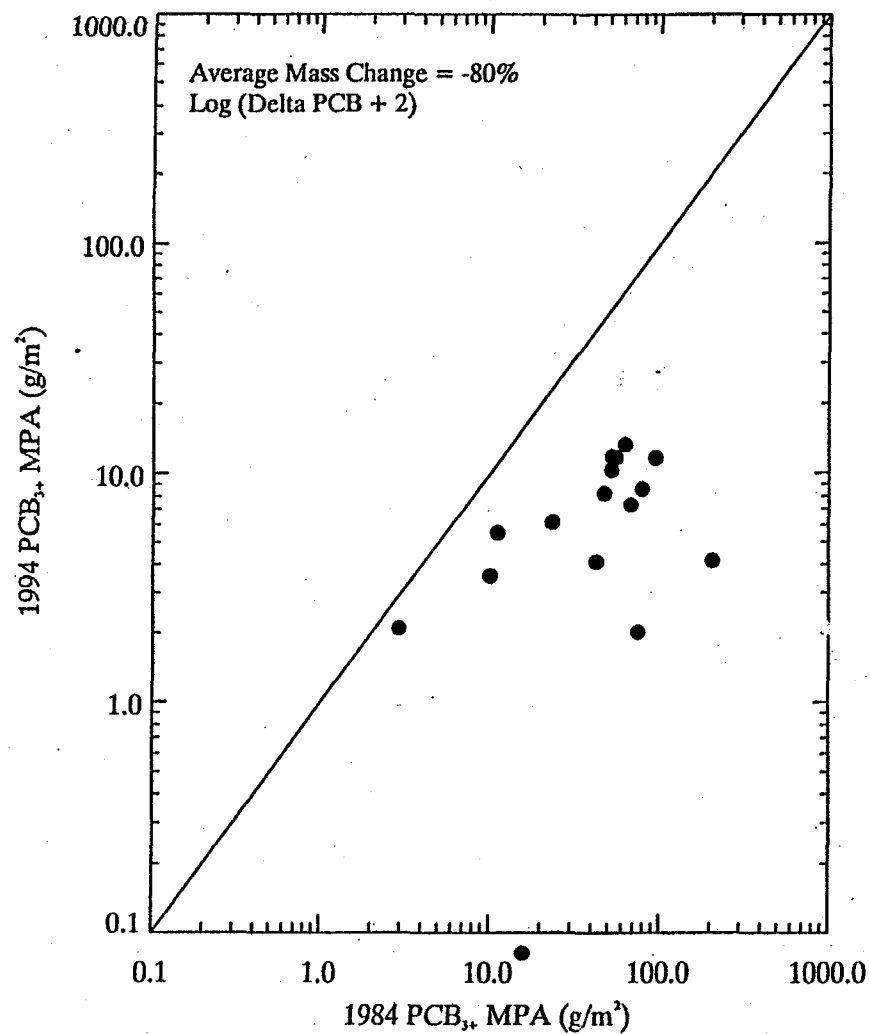
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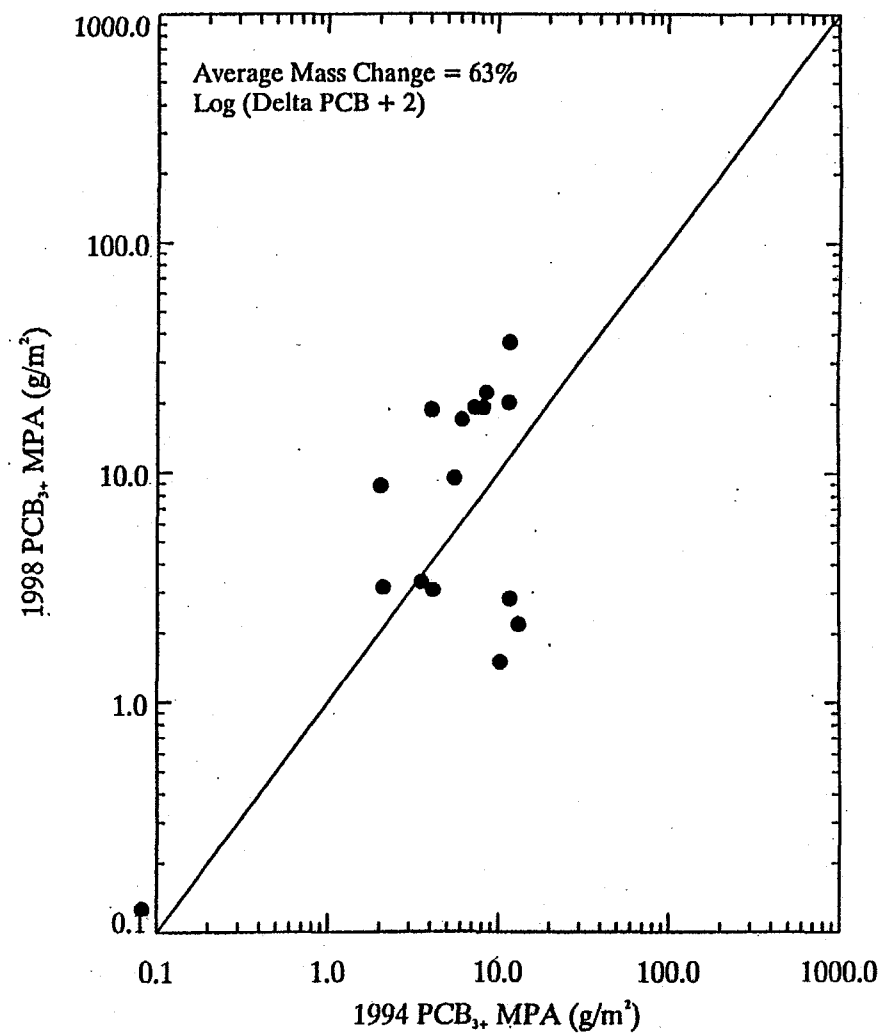
GENERAL ELECTRIC COMPANY - Hudson River Project
Thompson Island Pool Sediment Coring Program
Focused Sediment Coring Locations in TIP



1984 - 1994 Core Comparison



1994 - 1998 Core Comparison



Calculated PCB_{3,4} Mass Per Unit Area for Colocated 1984, 1994, and 1998 Sediment Cores in Thompson Island Pool

Note: Posted Mass Change is Based upon USEPA Approach

10.9291

PROBLEMS WITH POINT TO POINT COMPARISONS TO ESTIMATE PCB FATE

- EPA Estimate of 40% PCB Mass Loss Between 1984 and 1994 Subject to Numerous Limitations
 - '94 cores not representative of '84 PCB distribution
 - comparison of grabs to cores
 - spatial heterogeneity in sediment PCBs
 - imprecision of PCB analytical technique
 - differences in PCB analytical techniques
- Comparison Between 1994 and 1998 Eliminated Many of the Problems with 1984 To 1994 Comparisons
 - cores compared to cores
 - same analytical technique
- Nonetheless the 1994 to 1998 Comparisons Suffer from some of Same Limitations

10.9292

Attachment 3
3-12

FOCUSED SEDIMENT CORING PROGRAM

- Point to Point Comparisons Such As Those Performed by the EPA Can Not Be Used to Assess the Fate of Sediment PCBs
 - numerous limitations to approach
 - mass loss between 1984 and 1994
 - mass gain between 1994 and 1998
- Independent Evidence Aside from Point to Point Estimates of Mass Loss Can Provide Insights into What's Happening at These Locations

DATA AT LOCATIONS SAMPLED INDICATE BURIAL AND NOT SCOUR IS OCCURRING

- Surface Sediment ^7Be Indicative of Recent Deposition
- Surface Sediment ^{137}Cs Inconsistent With Extensive Scour
- Surficial Sediment PCB Concentration and Composition Profiles Indicative of Burial

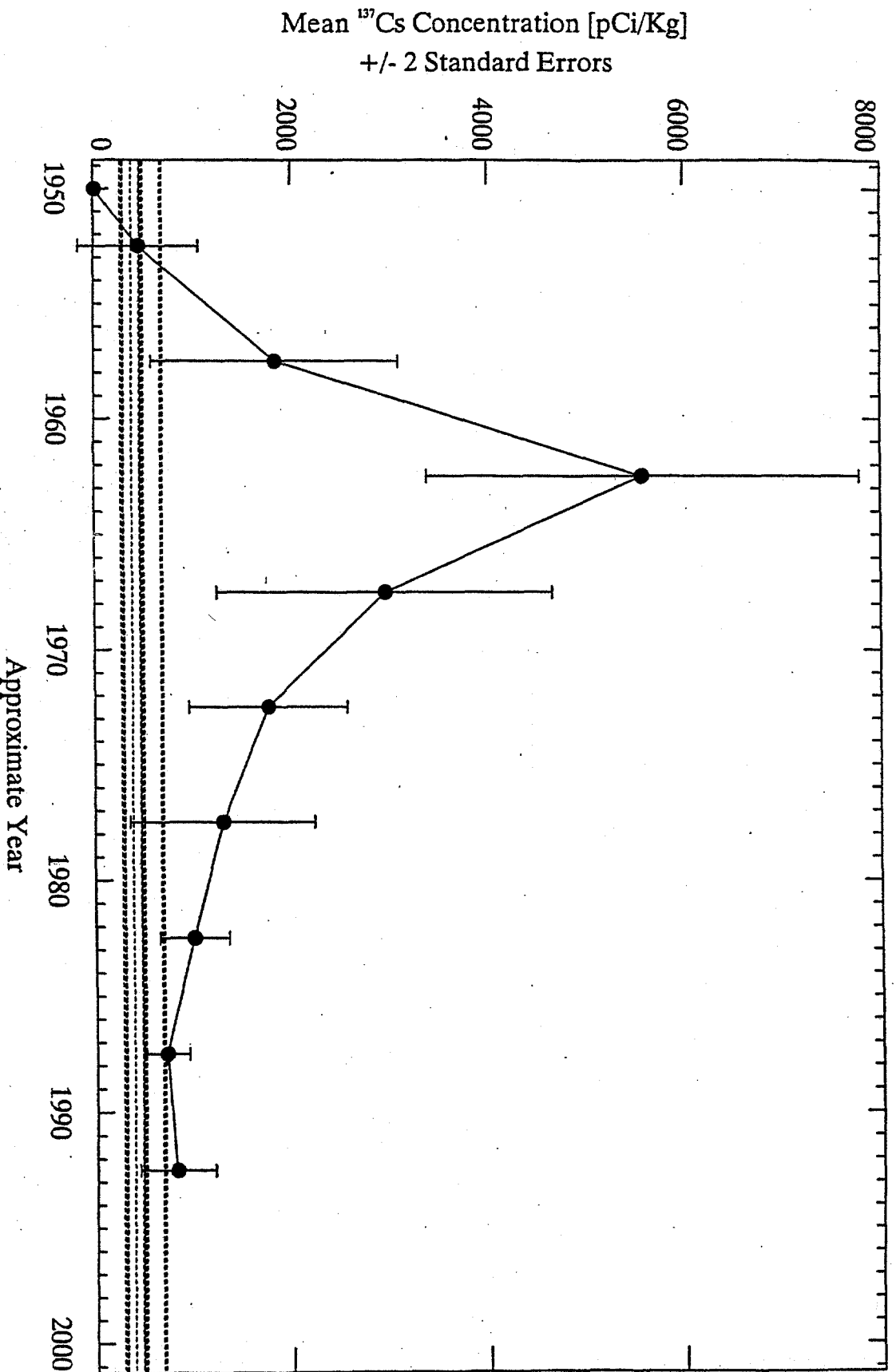
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Attachment 3
4-12

MAJORITY OF LOCATIONS CONTAIN EVIDENCE OF RECENT DEPOSITION

- ^7Be Used As Indicator of Recent Deposition
 - produced in the atmosphere and deposited within surface sediments
 - decays with a half-life of 54 days
 - presence within surface sediments indicative of recent deposition
- 8 Out of 12 Surface Samples Contained Detectable ^7Be
 - Evidence of recent deposition
 - Non-detects indicate deposition less than approx. 0.25 cm between April and July '98

Average ^{137}Cs Profile Calculated from Thompson Island Pool High Resolution Sediment Cores (HR-019, 020, 023, and 026)



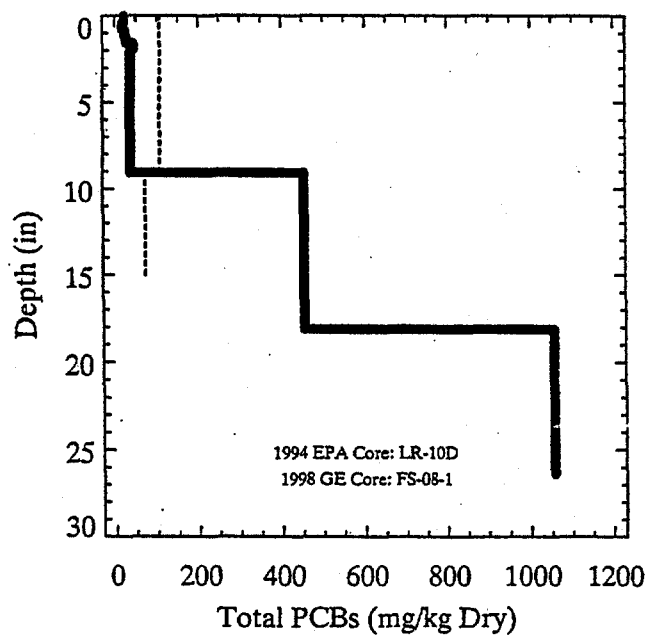
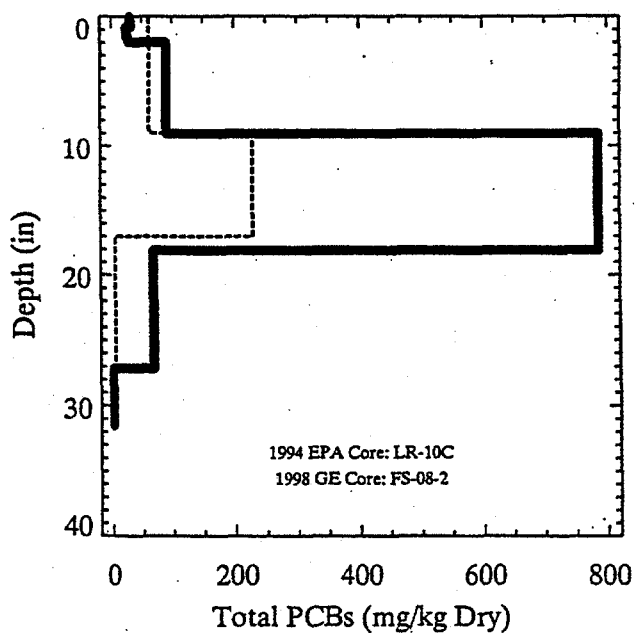
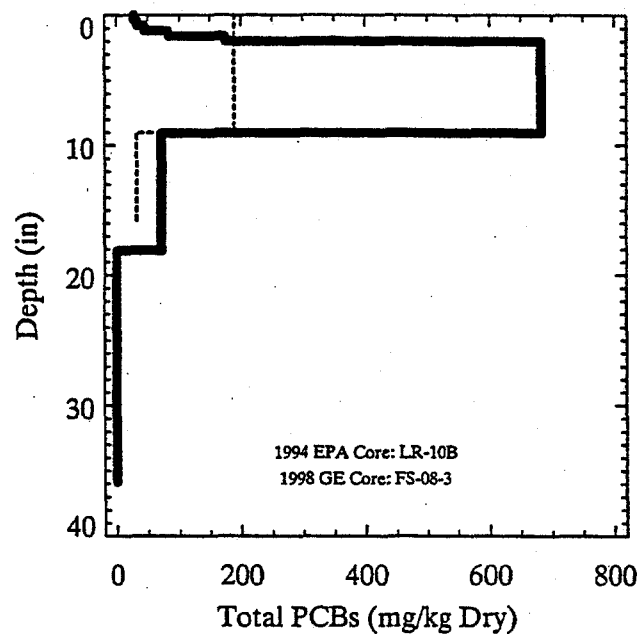
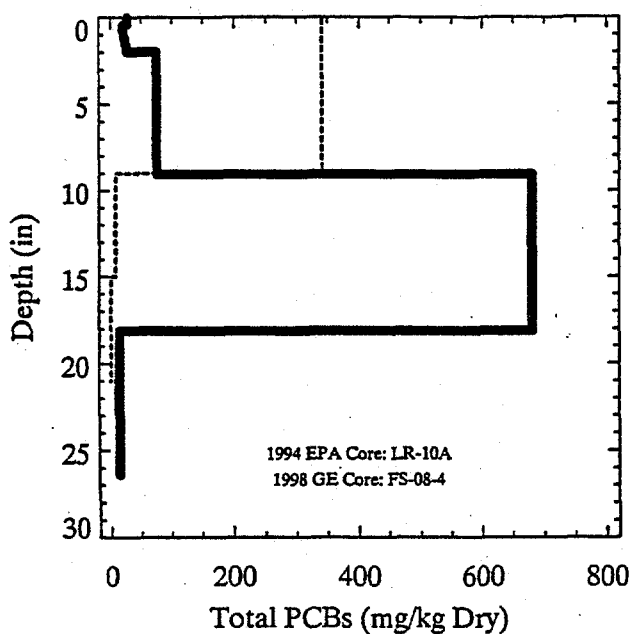
Notes:

- 1) Data Binned in 5 Year Intervals and Plotted at Midpoint
- 2) Horizontal dashed lines represent average surface sediment (0-5 cm) ^{137}Cs concentrations detected in 1998 GE Focused Sediment Cores

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5-12

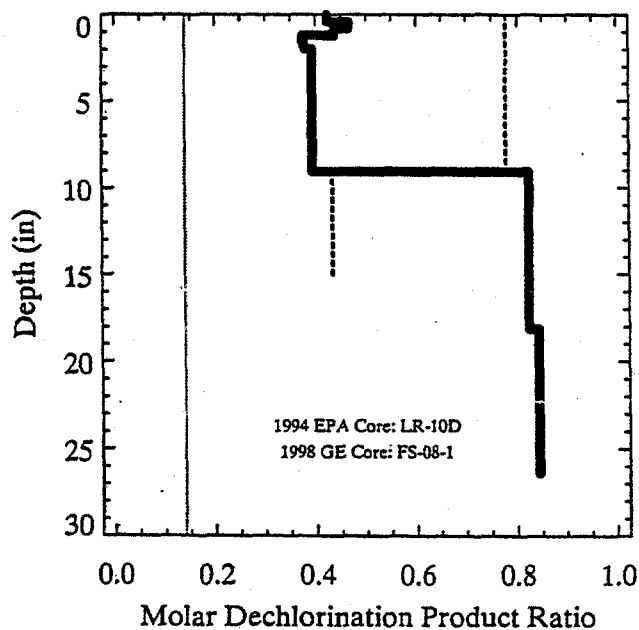
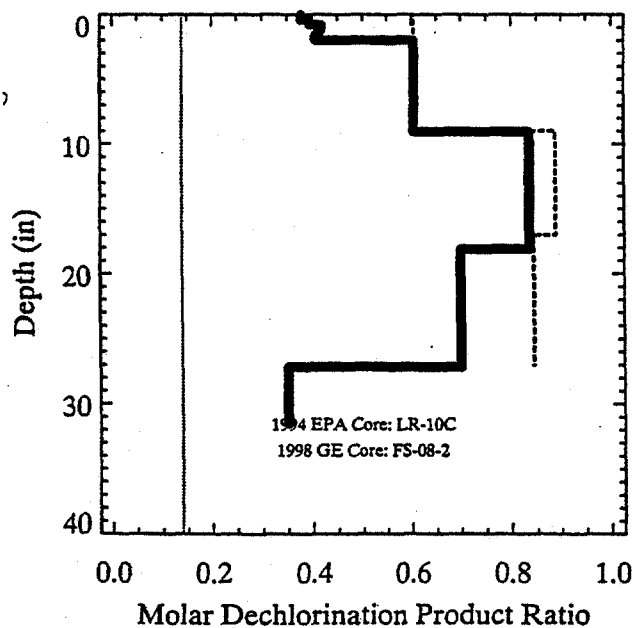
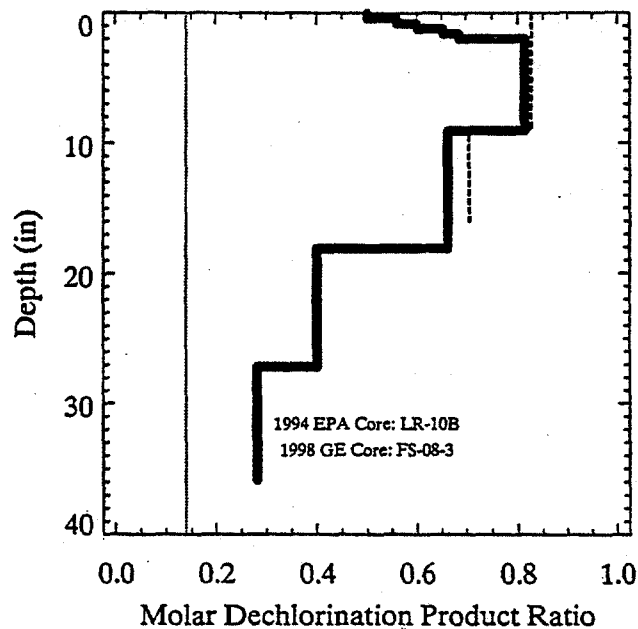
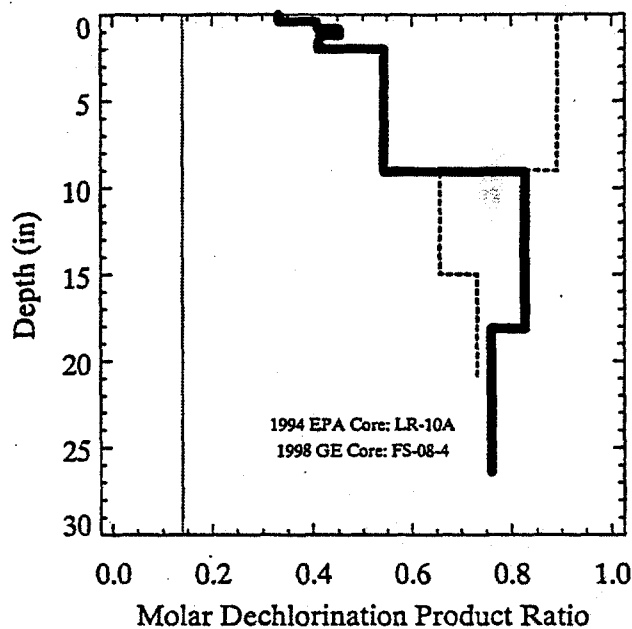
ATTACHMENT



General Electric Company - Hudson River Project

PCB Depth Profiles for 1994 (dotted lines) and Colocated 1998 (solid lines) Sediment Cores Located Within Thompson Island Pool.

ATTACHMENT 3
6-12



General Electric Company - Hudson River Project

MDPR Depth Profiles for 1994 (dotted lines) and Colocated 1998 (solid lines) Sediment Cores Located Within Thompson Island Pool.

Note: Vertical line represents MDPR of Aroclor 1242.

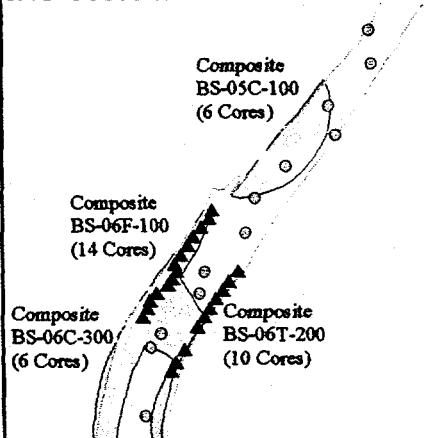
LEGEND

- Mile Markers
- Dams and Locks
- Broad Scale Sediment Survey Locations
 - Coarse Composites
 - ▲ Fine/Transitional Composites
 - Individual Cores
- Shore
- 1976 NYSDEC Hot Spots

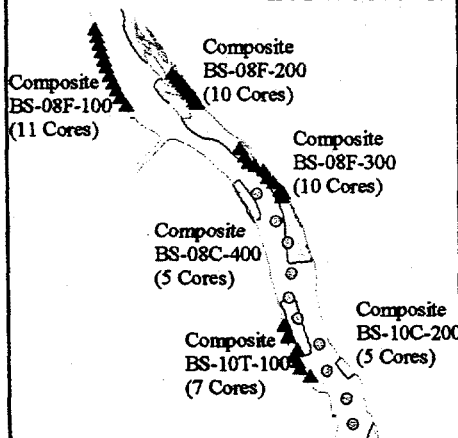
GRAPHIC SCALE

0.5 0 0.5 Miles

CORES NEAR HOT SPOTS 5&6



CORES NEAR HOT SPOTS 8&10



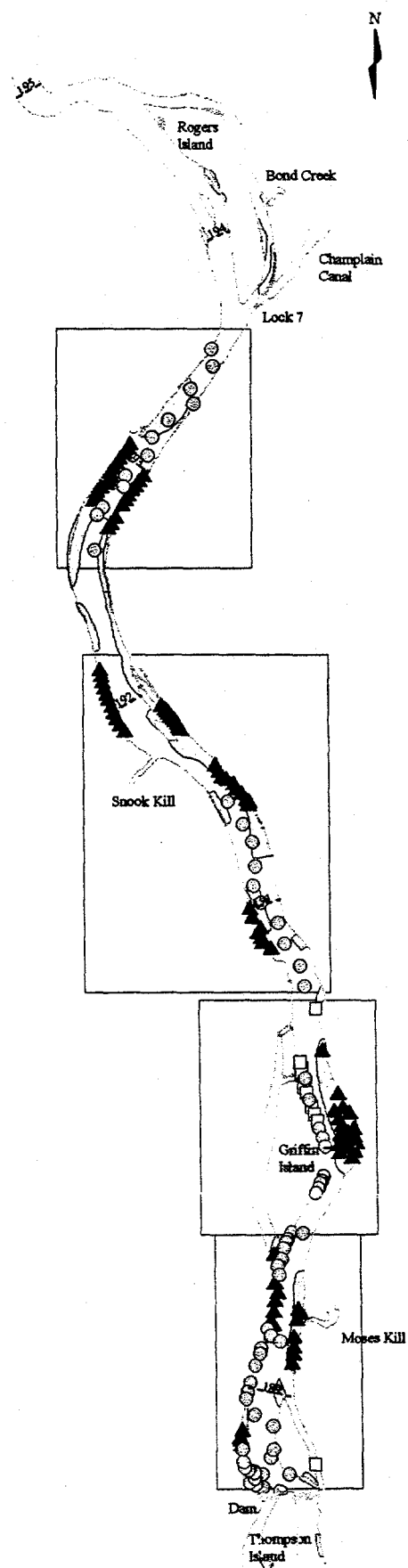
Individuals
BS-14T-309
BS-14T-310
BS-14T-301
BS-14T-302
BS-14T-303
BS-14T-304
BS-14T-305
BS-14T-306
BS-14T-307
BS-14T-308

Composite BS-14T-100 (11 Cores)
Composite BS-14C-400 (5 Cores)
Composite BS-14F-200 (9 Cores)
Composite BS-14C-500 (7 Cores)

CORES NEAR HOT SPOT 14

Composite BS-15F-100 (7 Cores)
Composite BS-15C-300 (6 Cores)
Composite BS-18T-100 (4 Cores)
Composite BS-18C-200 (4 Cores)
Composite BS-18C-400 (8 Cores)
Composite BS-15C-200 (9 Cores)
Composite BS-16F-100 (7 Cores)
Composite BS-18C-300 (4 Cores)
Individual BS-18C-501

CORES NEAR HOT SPOTS 15,16&18



GENERAL ELECTRIC COMPANY - Hudson River Project
Thompson Island Pool Sediment Coring Program
Broad Scale Surface Sediment Survey Sampling Locations

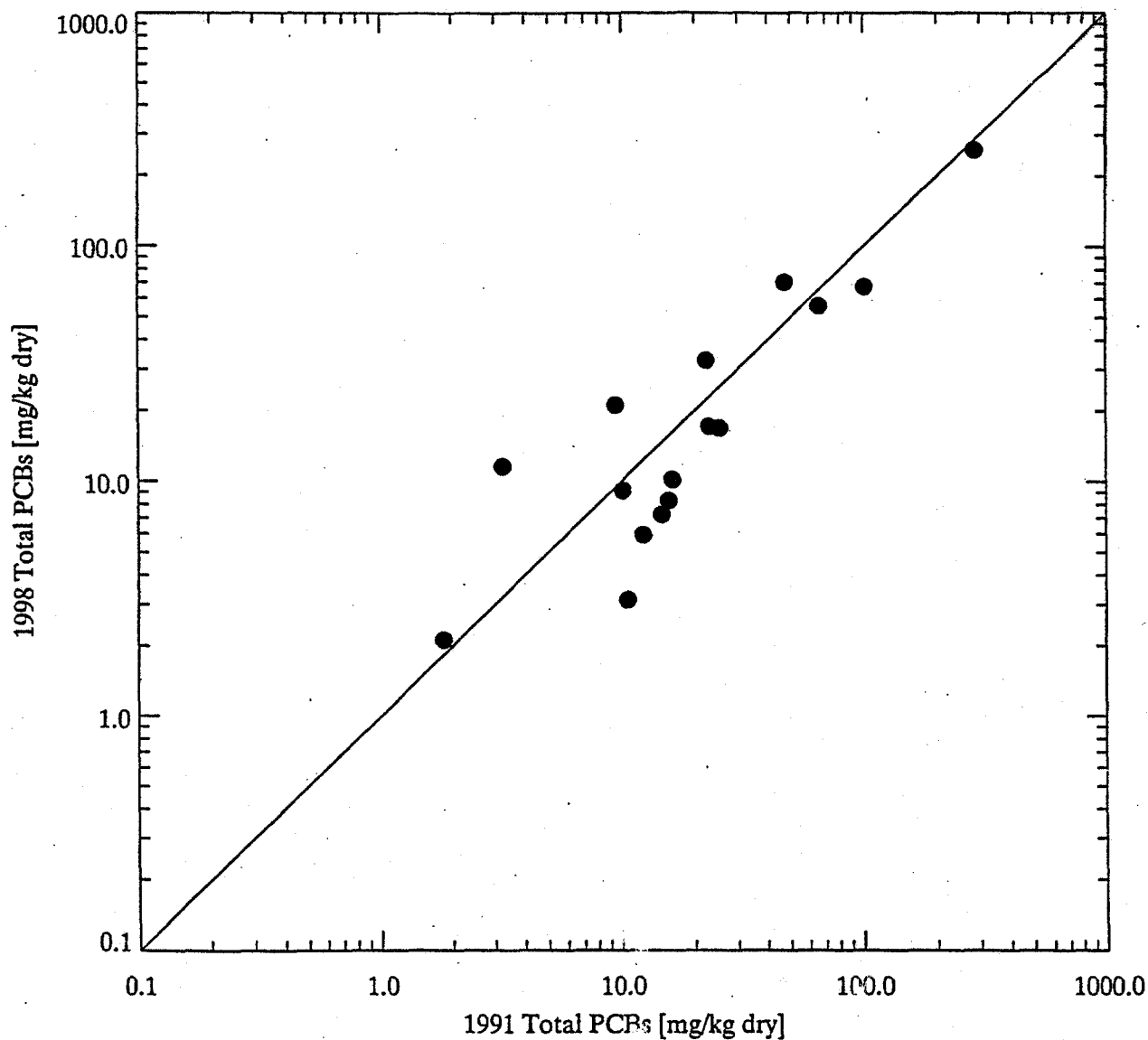
OEA
Office of Environmental Assessment

GENstud 140

January, 1999

10.9299

ATTACHMENT:
7-12



Summary Statistics

Average

Standard Deviation

1991 Composite

38.08

63.33

1998 Composite

29.14

53.15

General Electric Company - Hudson River Project

Analysis of 1998 GE Broad-Scale Composite Sediment Core 0-5 cm Mass-Weighted Average Data

Comparison of Total PCBs with Corresponding 1991 GE Composite Cores

SEDIMENT DATA SUMMARY

- In Areas EPA Characterized As “Mass Loss” Between 1984 and 1994 the Data Indicate Burial Is Occurring
 - No evidence of extensive mass loss in the 1990s
 - Surface Sediment ^{137}Cs Inconsistent With Extensive Scour
 - Surface Sediment ^7Be Evidence of Recent Deposition
 - PCB Concentration and Composition Profiles Exhibit Strong Vertical Gradients at Sediment-water Interface
- Modest reduction in PCB concentrations within 0-5 cm surface sediments between 1991 and 1998

ROUTINE WATER COLUMN MONITORING PROGRAM

- Objectives
 - Assess the impact of plant site remedial efforts on water column PCB loadings
 - Evaluate the temporal and spatial trends in sediment-water PCB exchange
- Approach
 - Weekly sampling at six stations between plant site and Schuylerville
 - Whole water samples analyzed for capillary column PCBs, TSS

10.9302

8-12
ATTACHMENT 3

N

Route 27 Bridge

Route 197 Bridge (East)

Lock #7

TID West Wingwall

Thomson Island Dam

TID Downstream Profile

Lock #6

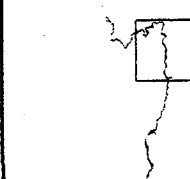
LEGEND

- Water Column Monitoring Stations
- Dams and Locks
- Uppershore

LOCATION MAP

Upper Hudson

Area of Interest



GRAPHIC SCALE

1 0 1 2 Miles

Lock #5

Route 29 Bridge

GENERAL ELECTRIC COMPANY - Hudson River Project
Routine Water Column Monitoring Stations

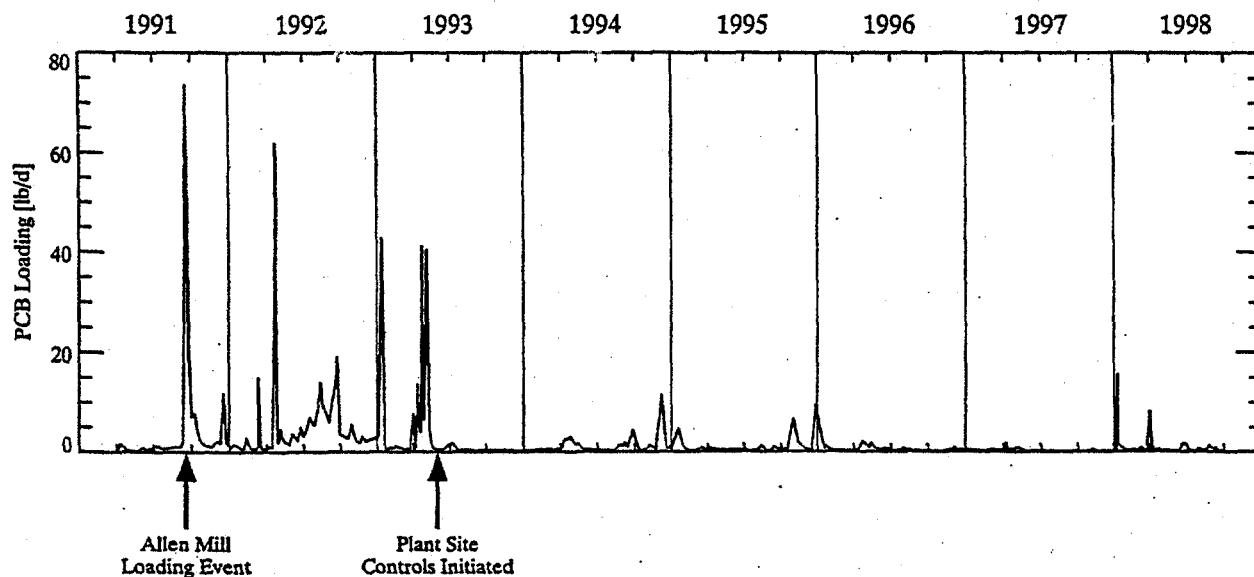
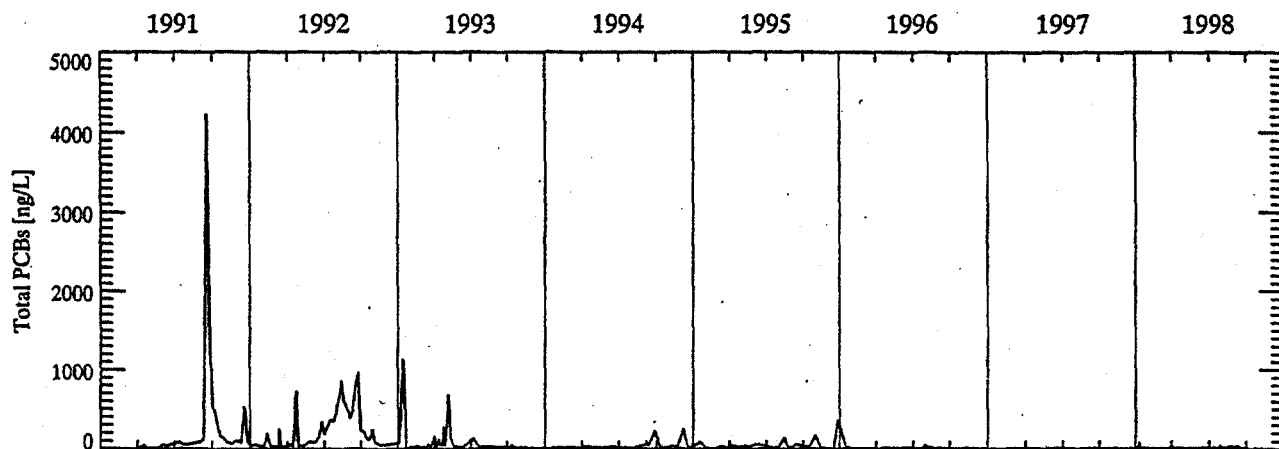
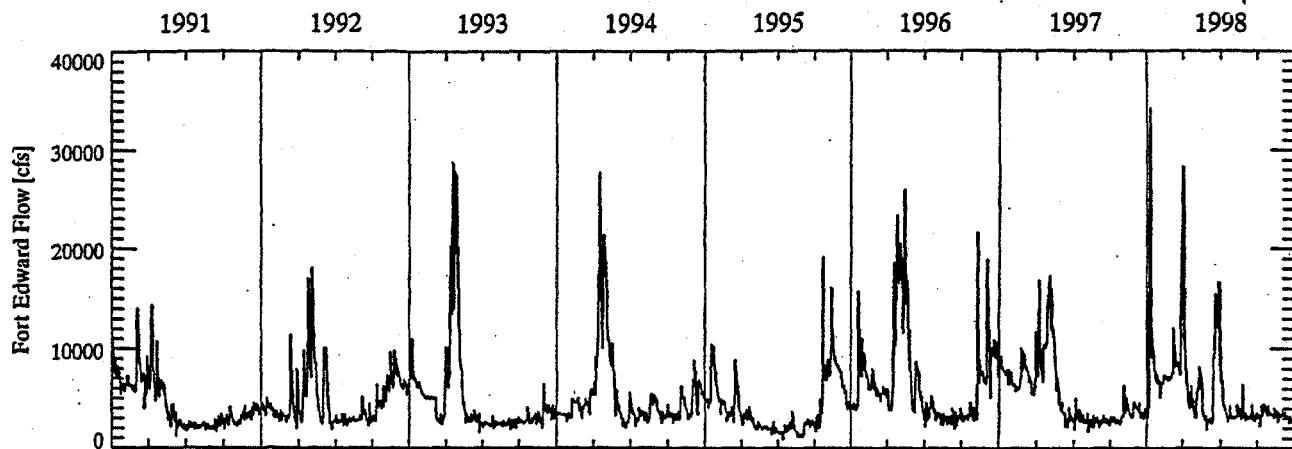


GENhud 140

January, 1999

10.9303

9-12



General Electric Company - Hudson River Project

Temporal Profile of River Flow, PCB Concentration, and PCB Loading at Fort Edward from 1991 to 1998.

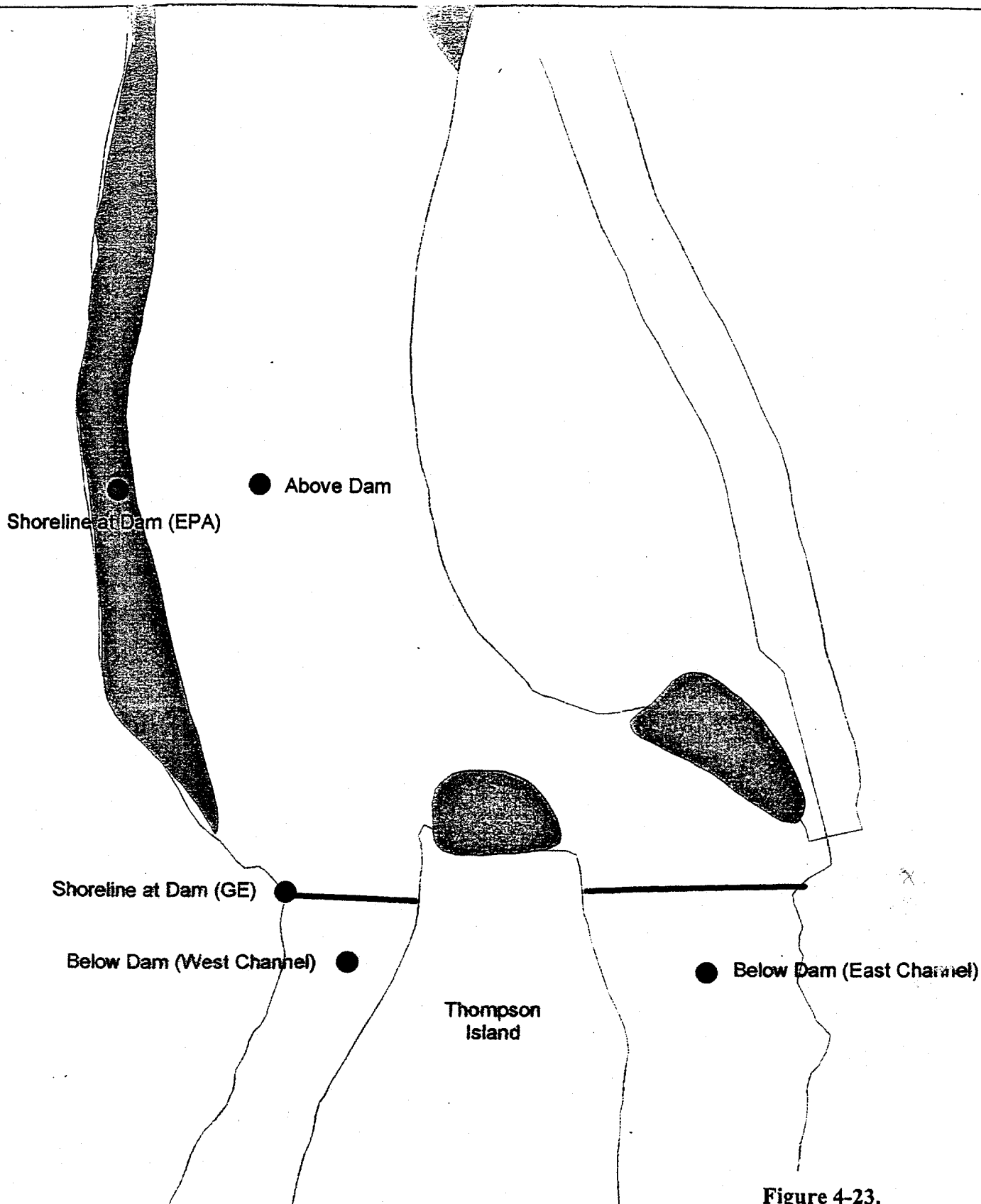
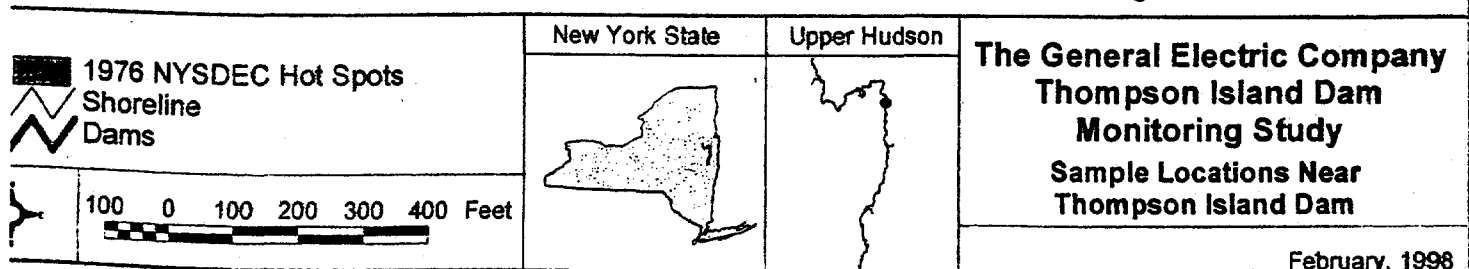


Figure 4-23.



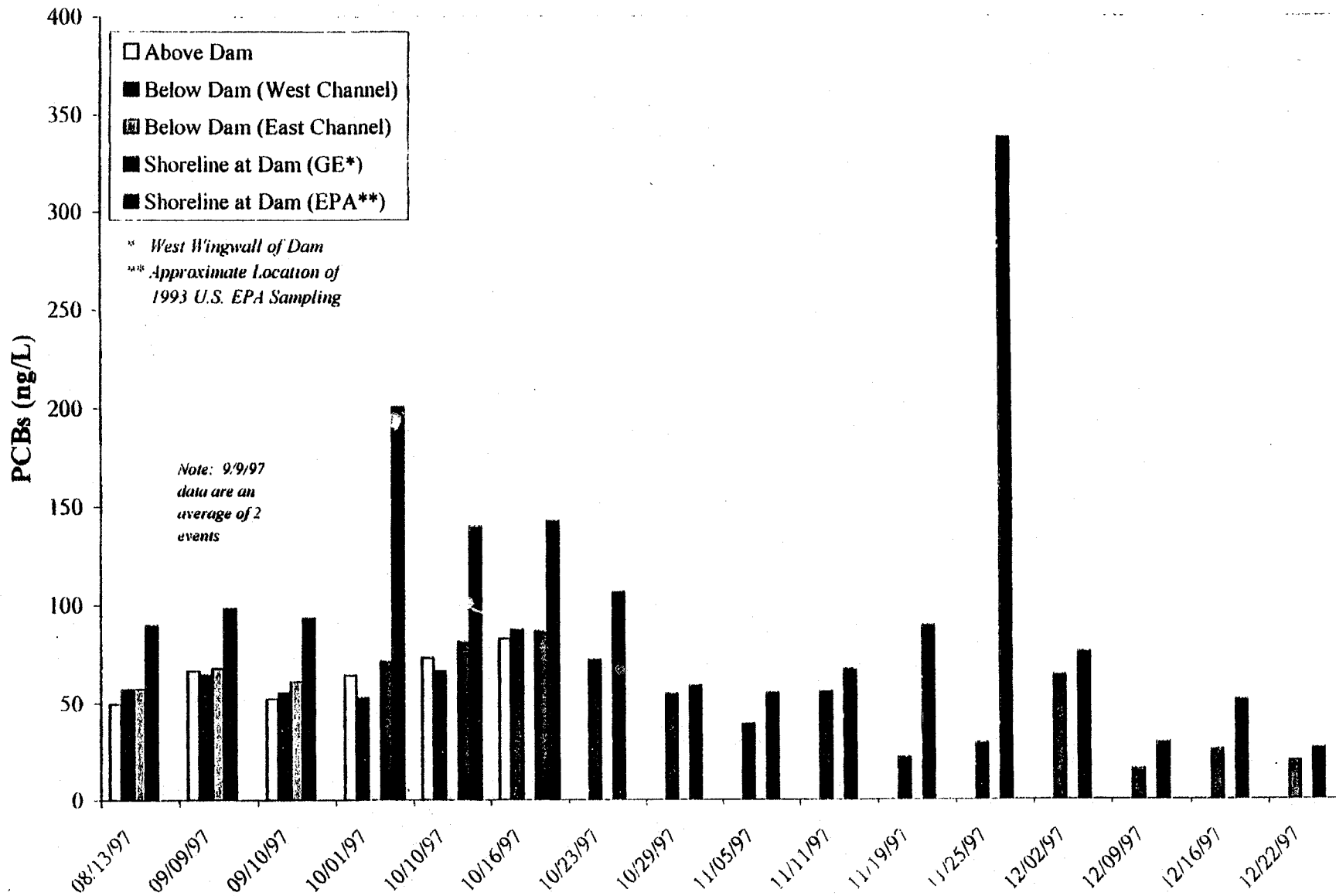


Figure 4-26.
Comparison of PCB Concentrations Within the Vicinity of Thompson Island Dam.

10.9306

Attachment 3
10-12

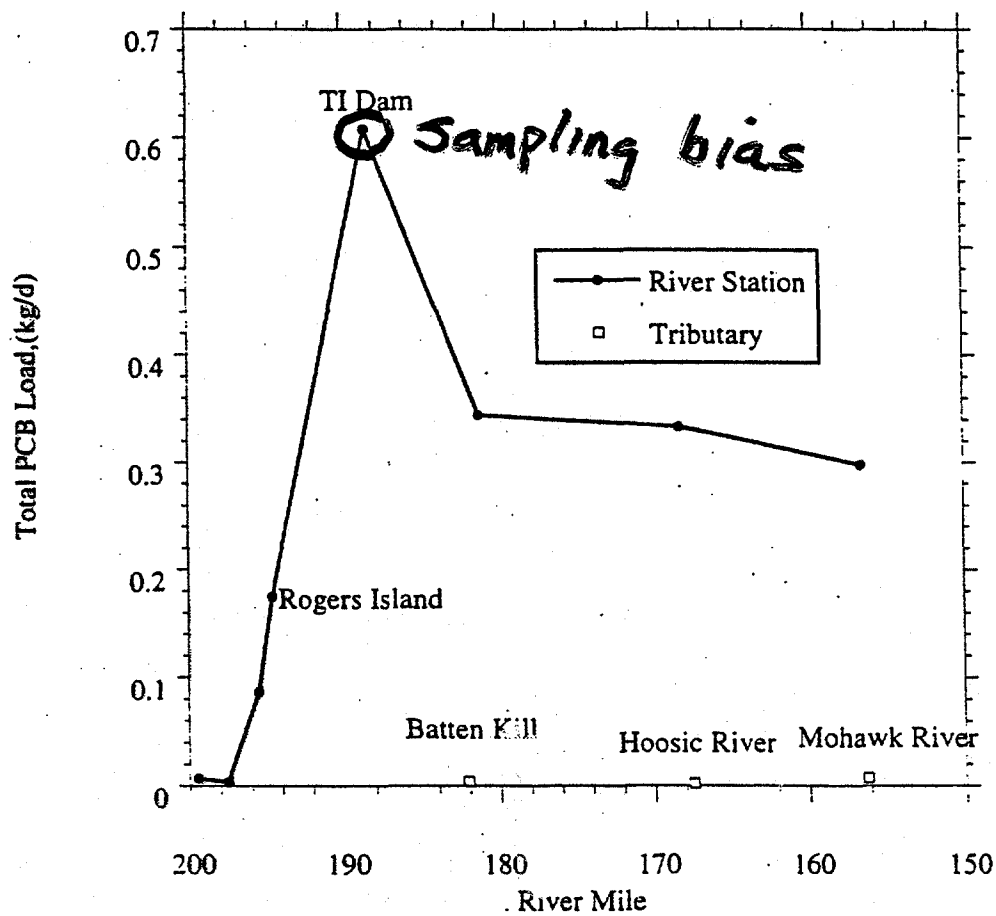
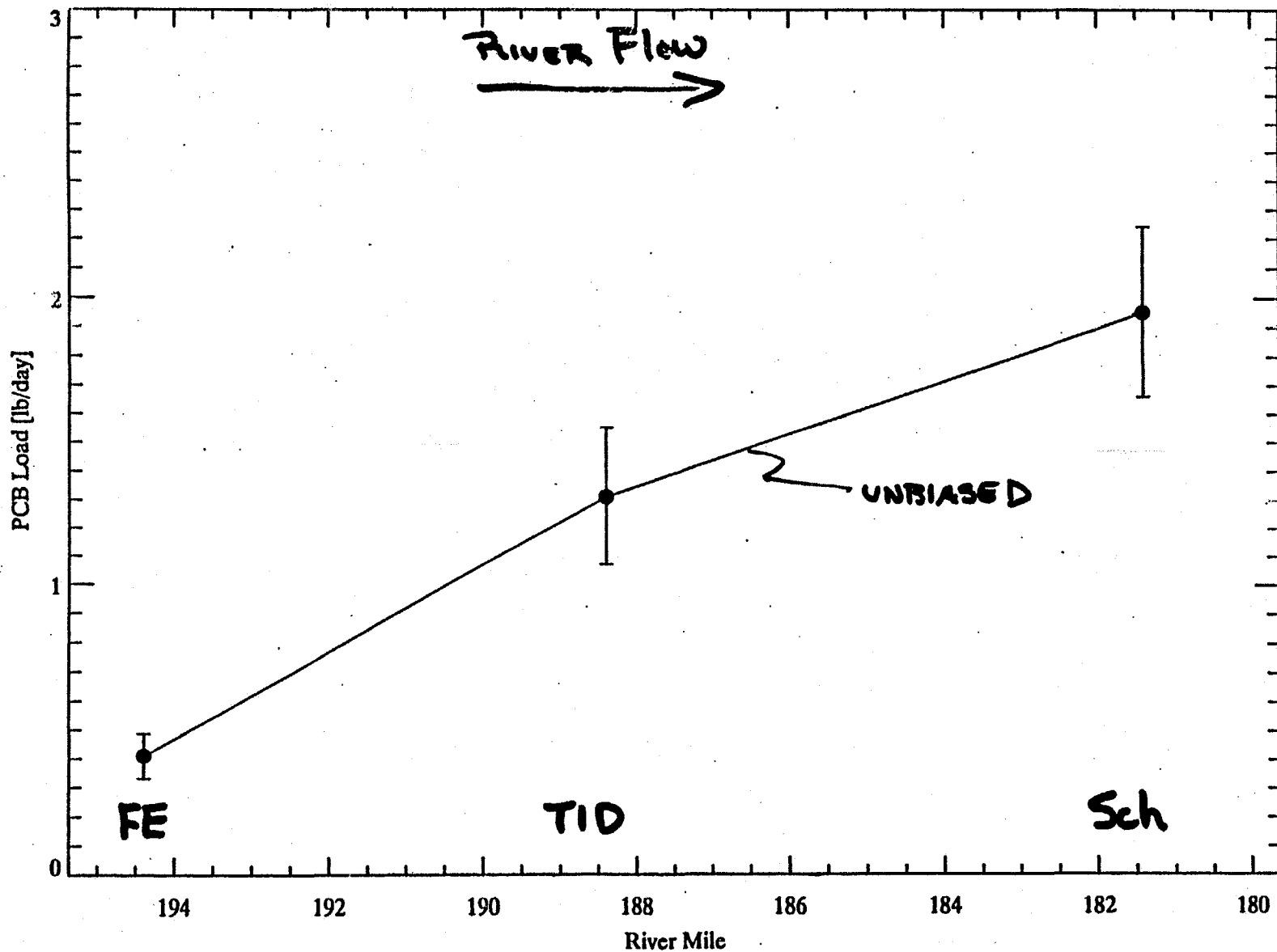


Figure C-8
Water-Column Instantaneous Total PCB Loads for Transect 2



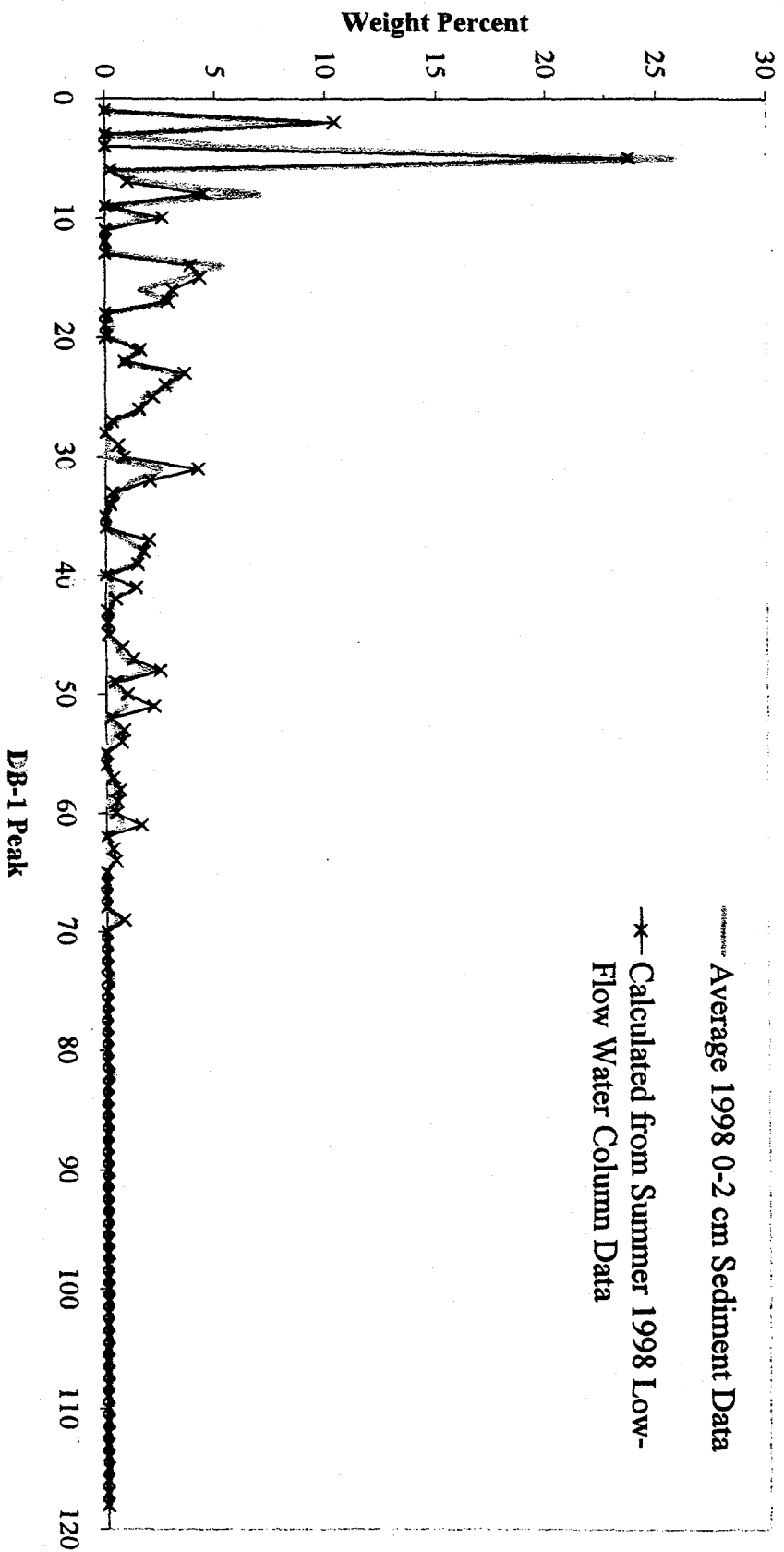
General Electric Company - Hudson River Project

Spatial Profile of Average PCB Loading From Fort Edward to Schuylerville for Low Flow Data (<10,000 cfs) Collected After 10/01/97.

Notes: Open square represents TID-West sampling station. Flow at TID and Schuylerville prorated from USGS provisional flow collected at FE.

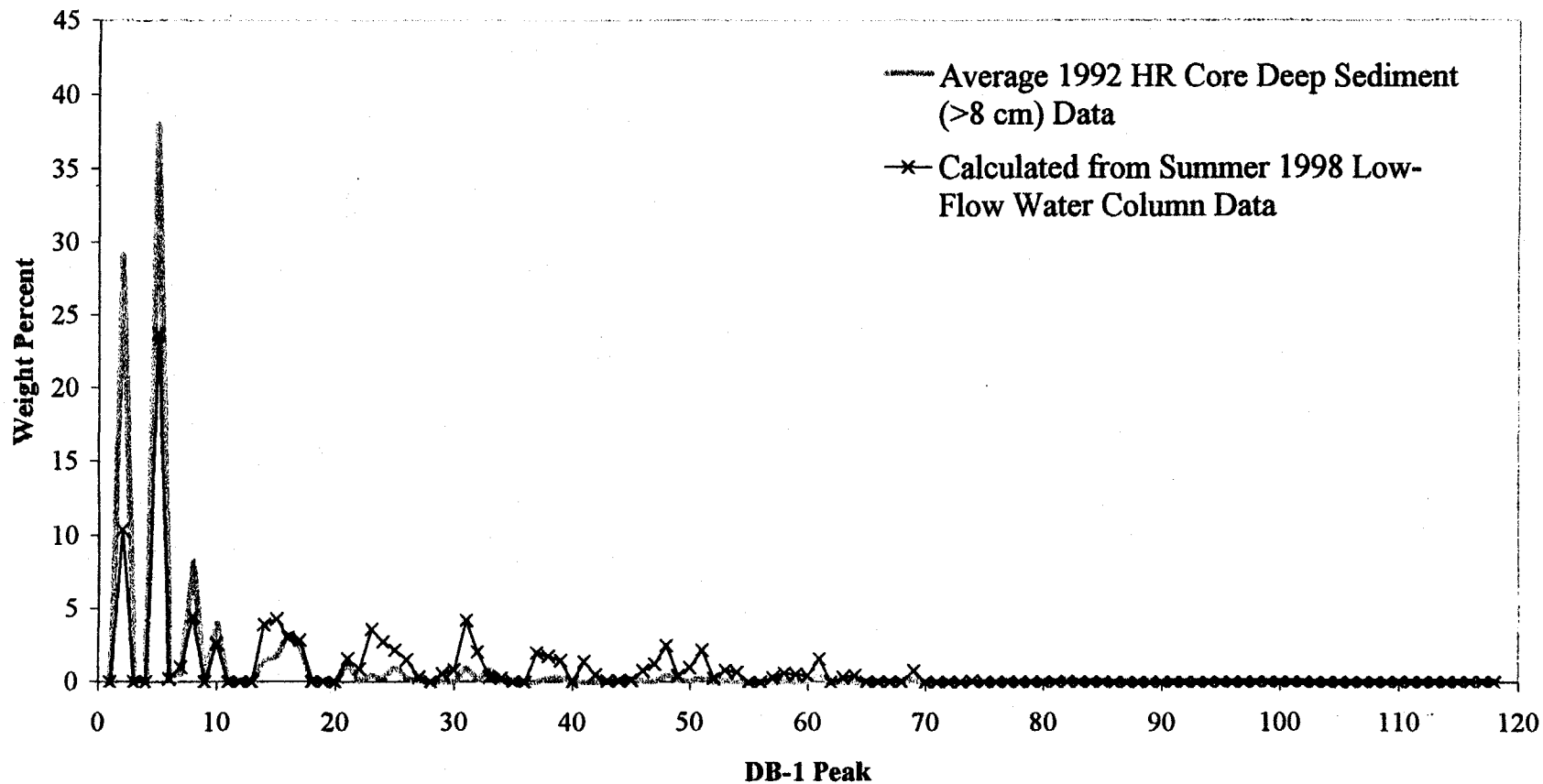
10.9308

11-12
 Attached



GENERAL ELECTRIC COMPANY - Hudson River Project

Comparison of the Average 1998 0-2 cm TIP Sediment PCB DB-1 Peak Distribution with that Calculated from Summer 1998 Low-Flow Water Column Data Based Upon Pore Water Diffusion and Equilibrium Partitioning



GENERAL ELECTRIC COMPANY - Hudson River Project

Comparison of the Average 1992 High Resolution Cores Deep Sediment (> 8 cm) TIP PCB DB-1 Peak Distribution with that Calculated from Summer 1998 Low-Flow Water Column Data Based Upon Pore Water Diffusion and Equilibrium Partitioning

WATER COLUMN DATA SUMMARY

- Plant Site Sources Significantly Reduced
 - Remedial efforts have been effective
- Refined Understanding of TIP loadings
 - Sampling location at TID changed to eliminate high bias
 - Spatial patterns now consistent with PCB distribution in river sediments and known fate and transport processes
 - Water column PCB composition consistent with surface sediment PCB source

10.9311