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March 31, 1998

VIA TWO-DAY DELIVERY

Mr. Douglas Tomchuk
Remedial Project Manager
U.S. Environmental Protection Agency
290 Broadway - 20th Floor
New York, NY 10007-1866

RE: REMNANT DEPOSITS MONITORING PROGRAM - 1996

Dear Mr. Tomchuk:

Enclosed is the report documenting the 1996 data collection efforts related to the Remnant Deposits Monitoring Program and other miscellaneous projects.

Please place a copy of this report in the Hudson River Site administrative record.

Yours truly,

John Haggard /WAR

John G. Haggard

JGH/djb
Enclosure:

cc:* Victor Bierman, Jr., Ph.D. - Limno-Tech, Inc. *(report - 1 copy)*
Anders Carlson - NYSDOH *(report - 2 copies)*
Al D'Bernardo - TAMS Consultants *(report - 1 copy)*
Jay Field - NOAA *(report - 1 copy)*
Douglas Fisher - U.S. EPA *(letter only)*
Anton Geidt, Esq. - NOAA *(letter only)*
William Ports - NYSDEC *(report - 2 copies, plus Appendices E-G - 1 copy)*

* *'Report' does not include the following appendices, which were bound and shipped separately, as noted* above:
Appendix E - Data Validation Technical Memorandum
Appendix F - PCB Data Summary Packages
Appendix G - Total Suspended Solids Data Summary Packages

FINAL REPORT

Fort Edward Dam
PCB Remnant Containment
1996 Post-Construction
Remnant Deposit Monitoring Program

General Electric Company
Corporate Environmental Programs
Albany, New York

March 1998

O'BRIEN & GERE
ENGINEERS, INC.

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Final Report

Fort Edward Dam PCB Remnant Containment

1996 Post-Construction Remnant Deposit Monitoring Program

General Electric Company
Corporate Environmental Programs
Albany, New York

J. Kevin Farmer, P.E.
Vice President

March 1998

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1. Introduction

This report presents the water column monitoring results for the 1996 Post-Construction Remnant Deposit Monitoring Program (PCRDMP) conducted in the upper Hudson River in New York State (Figure 1-1). River monitoring for the PCRDMP is performed in accordance with a consent decree (Consent Decree 1990; 90-CV-575) between the United States and General Electric Company (General Electric) in association with the containment of the Fort Edward Dam remnant deposits. This introduction presents the objectives of the PCRDMP along with a background summary and overview of the 1996 program. The organization of this section is outlined below.

- Objectives
- Site background
- Summary of remnant deposit monitoring activities
- Additional water column data collected in 1996
- Project Overview

1.1. Objectives

The primary objective of the ongoing PCRDMP is to evaluate what, if any, impact the remnant deposits have on PCB concentrations in the Hudson River. The PCRDMP focuses on the evaluation of water mediated transport of PCBs from the remediated remnant deposits. Monitoring has included sampling and analysis of water samples collected from the Hudson River at locations upstream, downstream, and adjacent to the remnant deposits.

Evaluation of data interpretation limitations due to sampling and analysis methods was also included as an objective of the 1996 PCRDMP. Water column PCB concentrations during 1996 in the subject reach of the river were generally low (<20 nanograms per liter [ng/l]). Interpretation of data at such low concentrations requires careful evaluation of data quality (Table 1-1) and associated limitations.

1.2. Site background

1.2.1. Origin of the remnant deposits

Over a 30-year period ending in 1977, two General Electric capacitor manufacturing plants near Fort Edward and Hudson Falls, New York discharged PCBs to the Hudson River (NUS 1984). Much of the PCBs were contained in sediment[1] deposited in the pool behind the Fort Edward Dam located at HRM194.9[2] (Figure 1-1). Removal of the 100-year-old dam by Niagara Mohawk Power Corporation in 1973 dropped water levels in the dam pool. As a result, an estimated 1.5 million cubic yards of sediment deposits were left along the banks of the river in a 1.5-mile stretch upstream of Fort Edward (NUS 1984). Between July 1973 and April 1976, approximately 1.0 million cubic yards of this material washed downstream by high flows (NUS 1984).

Five discrete remnant deposits were identified upstream of Fort Edward (NUS 1984; Figure 1-1). Remnant Site 1 originally appeared as an island; however, floods in 1976 and 1983 reportedly scoured much of the sediment associated with this deposit, submerging portions of the island during high flow periods (NUS 1984). Remnant Site 1 currently consists of several islands spread out over approximately 1,500 feet, centered at HRM 196.1. Remnant Site 2 occupies approximately eight acres along the west bank of the river at HRM 195.7. Remnant Site 3 is located along the east bank of the river at HRM 195.5 and encompasses approximately 19 acres. Remnant Site 4 occupies 21 acres located on the west and south banks of the river where the river bends sharply to the east. Remnant Site 5 is located immediately upstream of the old Fort Edward Dam on the north bank of the Hudson River occupying approximately four acres (NUS 1984).

1.2.2. Remedial activities at the remnant deposits

Several limited remedial activities were performed on the remnant deposits by New York State between 1974 and 1978 (O'Brien & Gere 1995a; NUS 1984). A feasibility study (FS) of the Hudson River Superfund site, which included Hudson River sediment and the remnant deposits, was performed by NUS (1984) for the United States Environmental Protection Agency

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[1] Sediment refers to matter deposited by water that settles to the bottom or banks of the river. In comparison, soil is upland surface material.

[2] The north-south orientation of the river provides a convenient location reference. Hudson River mile (HRM) 0.0 is located at the Battery in New York City and river mile increases traveling north up the river.

(USEPA). The purpose of the FS was to examine potential remedial alternatives and recommend a remedial alternative that meets goals and objectives established under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

In September 1984, USEPA issued a Record of Decision (ROD; USEPA 1984). For Hudson River sediment, the ROD selected no-action. For the remnant deposits, the ROD contained plans for in-place containment of Remnant Sites 2, 3, 4, and 5 by application of soil cover, vegetation of the cover and bank stabilization (USEPA 1984). No action was selected for Site 1. The consent decree with the federal government specified the remediation work to be done and post-construction monitoring (Consent Decree 1990; 90-CV-575). In-place containment of the remnant deposits was completed by General Electric during the fall of 1990 (O'Brien & Gere 1995a; JL Engineering 1992). Post-construction monitoring has been conducted since 1991.

1.2.3. Remedial activities at the Bakers Falls source(s)

As a result of monitoring conducted in 1991 and 1992, a source(s) of PCB upstream of the remnant deposits was identified and isolated (Appendix A[3]). This source(s) enters the river in the vicinity of Bakers Falls adjacent to the General Electric Hudson Falls facility and is referred to in this report as the Bakers Falls source(s). The Bakers Falls source(s) is the subject of a remedial investigation/feasibility study which is being conducted by General Electric with oversight by the New York State Department of Environmental Conservation (NYSDEC) to comply with a consent order (Index #A5-0928-93-03) with the state of New York (Dames & Moore 1996, O'Brien & Gere 1996a, 1994a). During 1993 through 1996, interim remedial measures (IRMs) were performed under the consent order to control PCB loading to the river from this source(s) (O'Brien & Gere 1996a). In September 1996, a seep discharging PCB DNAPL was located in the plunge pool river bed at the base of Bakers Falls. Isolation and collection of DNAPL from the seep began on September 24, 1996. The oil production from the seep was monitored and found to be approximately 0.5 lb/day of PCB. The seepage stopped after a recovery well (Well 104) was installed (General Electric 1996).

3 This report is structured to highlight the results of the 1996 PCRDMP. Appendix A provides a synopsis of results of the 1992 through 1996 PCRDMP. Readers unfamiliar with this monitoring program may find it helpful to read Appendix A before proceeding further.

1.3. Summary of remnant deposit monitoring activities

1.3.1. River Monitoring 1989 to February 1992

From 1989 to 1991 an environmental monitoring program was conducted by Harza Engineering Company (Harza) before, during, and after the completion of the remedial construction activities (Figure 1-2). The environmental sampling activities performed by Harza employed various techniques to collect and analyze water, sediment, air, and aquatic biota samples as identified in the work plan submitted to USEPA in October 1989 (Harza 1989a). The method detection limit for water column samples collected during this program was 0.1 micrograms per liter (μg/l), or 100 ng/l. These monitoring programs were performed according to the approved work plan (Harza 1989a) to comply with the consent decree (Consent Decree 1990; 90-CV-575).

In addition to the Harza monitoring programs, a separate study was performed by O'Brien & Gere in 1991/1992 to characterize the PCB distribution and composition in the upper Hudson River (O'Brien & Gere 1993a,b,c). Water column samples collected for this program were analyzed for PCBs by a capillary column method to evaluate PCB composition on a congener-specific basis. The capillary column analytical method used a lower detection limit of 11 ng/l.

1.3.2. Post-Construction Remnant Deposit Monitoring Program - March 1992 to Present

Since March 1992, the PCRDMP has been performed to comply with monitoring requirements of the consent decree; this monitoring program replaced the monitoring performed by Harza (O'Brien & Gere 1993d). The PCRDMP has consisted of water column sampling and analysis for PCBs at locations upstream and downstream of the remnant deposits (Figure 1-1; Table 1-2). For the PCRDMP, samples are analyzed for PCB congeners using the capillary column methodology (Appendix A) and total suspended solids (TSS). Sampling and analysis was performed according to plans submitted to USEPA in June 1992 (O'Brien & Gere 1992a, b, c) and revisions to the field sampling plan (O'Brien & Gere 1996b). Results of the PCRDMP have been summarized in annual reports submitted to USEPA (O'Brien & Gere 1993a, 1994b, 1995a, 1996b).

1.3.3. Summary of 1996 PCRDMP findings

Conclusions of the 1996 PCRDMP were consistent with previous monitoring:

- *PCB concentrations in the remnant deposit region of the river have declined since the remediation of Allen Mill.* In 1996, no sustained period of elevated PCB loading occurred between Bakers Falls and Rogers Island. It is believed that these decreased loadings are a result of remedial activities at the Allen Mill (O'Brien & Gere 1996b).

- *Water column PCB composition observed in the remnant deposit region of the river is consistent with the composition of PCBs observed at the Bakers Falls source(s).* In 1996, the PCB composition of intermittent detections of water column PCBs downstream of the remnant deposits continued to consistently resemble an unaltered Aroclor 1242. Based on limited data, the PCB composition does not match the remnant deposits (Appendix A). The existing information and knowledge of alteration behavior of PCBs that have been in the environment for extended periods suggest that if the remnant deposits were responsible for the PCB loading[4], a noticeable shift in PCB composition would occur as the river passed by the remnant deposits. This shift was not observed (O'Brien & Gere 1995a, 1996b, Appendix A).

- *Mass loading observed in the remnant deposit region of the river is attributed to source(s) upstream of the remnant deposits.* PCB concentrations continued to be detected in the water column upstream of the remnant deposits in 1996 (Section 1.4).Therefore, as in 1994 and 1995, water column mass loading observed in the remnant deposit region during 1996 was attributed to source(s) upstream of the remnant deposits.

Water column PCB concentrations in the upper Hudson River continued to decrease in 1996 (Figures 1-3 and 1-4). Based on the results of the PCRDMP from 1992 through 1996, it appears that the contribution of the remnant deposits to PCB levels in the river in 1996, if any, were not measurable. Water column PCB concentration decreases through the remnant deposit region over the 5-year monitoring period have coincided with the implementation of the Bakers Falls source(s) control measures.

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[4] River flow is approximately equivalent at the PCRDMP sampling stations allowing direct comparison of concentration data. Mass transport for a given station (mass/unit time) is calculated as the product of flow and PCB concentration at that station. Changes in PCB loading between two locations (mass/unit time) is calculated as the difference of the products of flow and PCB concentration from upstream to downstream. Temporal loading or mass transport changes may occur as changes in PCB concentration or flow.

1.4. Additional water column data collected in 1996

Additional water column data were collected during 1996 to provide information in support of PCRDMP objectives. A description of the purpose of each sampling event, methods employed, analytical results and a discussion of the data are presented in Appendix B. A brief summary of the data is provided below.

1.4.1. PCB concentrations at the base of Bakers Falls

Samples were collected at the base of Bakers Falls beginning in July 10, 1996 through December 11, 1996. PCB concentrations ranged from less than 11 to 1,453 ng/l (Appendix B: Table B-1, Figure B-1; General Electric 1996). The PCB composition resembled unaltered Aroclor 1242 (Appendix B, Figures B-4 through B-7). TSS concentrations ranged from less than 1.0 to 5.3 mg/l (Appendix B, Table B-1; General Electric 1996). The representativeness of samples collected from these locations is unclear as incomplete mixing of PCBs from the source(s) with the river water column likely occurs. Data from these stations does not appear to be comparable to data collected downstream. As a consequence of these limitations, PCB data collected at the base of Bakers Falls is considered to be an indicator of the source(s) activity, and is not considered useable for direct evaluation of PCB loading from the Bakers Falls source(s).

1.4.2. Hydrofacility maintenance operations

The potential impact of the Fort Edward hydrofacility maintenance operations on water column PCB transport in the vicinity of the falls was evaluated. Concentrations increased following initiation of hydrofacility maintenance operations and inundation of Bakers Falls. Hydrofacility operations divert flow around Bakers Falls, discharging water along the west shore of the river below the falls (Appendix B, Tables B-2 and B-3; General Electric 1996). As a consequence of hydrofacility water use, Bakers Falls is typically dewatered during low flow periods. Routine maintenance of facility debris collection screens, however, interrupts hydrofacility operations and causes water to flow over the falls for approximately 20 minutes at 3- to 4-day intervals during low flow periods. Additional maintenance is required during spring high flow periods and the fall (AHDC 1996).

1.4.3. Fort Edward (FED) transect study

The FED transect study was conducted to evaluate the representativeness of data collected from PCRDMP sampling stations and to refine the estimates of

PCB transport through the remnant deposit region (Appendix B, Table B-4; O'Brien & Gere 1997a). Results of this transect sampling event indicated that mean PCB concentrations, and therefore mass transport, were approximately equivalent at the routine monitoring station and the transect (Appendix B, Tables B-4 and B-5).

1.4.4. PCB concentrations in Thompson Island Pool

Samples were collected in Thompson Island Pool to evaluate the water column concentrations of PCBs in this first pooled area downstream of the remnant deposits. Samples were collected at the west dam abutment of the west channel at Thompson Island Dam (HRM 188.5) along with each round of PCRDMP sampling (Appendix B, Table B-1; General Electric 1996). PCB concentrations at Thompson Island Dam ranged from 13 to 271 ng/l and the PCB composition generally resembled altered Aroclor 1242 (Appendix B, Figures B-15 and B-16). TSS concentrations ranged from less than 1.0 to 20 mg/l (Appendix B, Table B-1; General Electric 1996). Water column PCB concentrations at this station tended to be higher than concentrations observed in the remnant deposit region of the river. These data are consistent with the anomalous loading previously identified in Thompson Island Pool (HydroQual 1995).

In addition, two rounds each of Thompson Island Pool (TIP) transect sampling and time of travel surveys were conducted in 1996, as presented in The *Thompson Island Pool Studies Data Summary Report* (O'Brien & Gere 1998). These sampling events are summarized below:

- The transect sampling events were used to evaluate the representativeness of the HRM 188.5 sampling station for estimating mass transport of PCBs from Thompson Island Pool. The transect sampling was performed on September 18 and October 29, 1996. Results of this transect sampling event indicated that mean PCB concentrations, and therefore mass transport, were approximately 75% higher at the routine monitoring station compared to the transect (O'Brien & Gere 1998).

- Time of travel surveys through Thompson Island Pool were conducted to evaluate loading that occurs between HRM 194.2 and HRM 188.5 approximately 6 miles downstream. The time of travel sampling was conducted on September 24 and 25, 1996. Water column samples were collected at 18 transects located in the pool. Results of both rounds of Thompson Island Pool time of travel sampling were similar. Water column concentrations ranged from <11 ng/l to 113 ng/l (O'Brien & Gere 1998).

1.4.5. Evaluation of samples analyzed for PCBs by different analytical methods

Monitoring in 1996 included split samples analyzed by methods NEA608CAP and USEPA 8081. Results of split sample analyses indicated that total PCB concentrations from both methods were comparable for PCB compositions that resembled unaltered Aroclor 1242 such as those typically found in the remnant deposit region of the river (Appendix B, Table B-6; General Electric 1996). In contrast, results of split samples with PCB compositions resembling altered Aroclor 1242 indicated that samples analyzed by method 8081 were biased high (Appendix B, Table B-6; General Electric 1996).

1.5. Project overview

The primary objective of the 1996 PCRDMP was to continue to evaluate the potential impact of the remnant deposits on PCB loading in the Hudson River. The 1996 PCRDMP consisted of routine weekly water column monitoring which was performed to monitor overall spatial and temporal trends of PCBs in the river.

The remainder of this report is organized as follows:

Section	Title
2	Methods and Materials
3	Results
4	Discussion
5	Summary/Conclusions

2. Methods and materials

The 1996 PCRDMP was performed according to a field sampling plan (FSP) and FSP addendum, and quality assurance project plan (QAPP) prepared by O'Brien & Gere Engineers, Inc. (O'Brien & Gere 1992a and 1996b, and 1992b, respectively). The content of the QAPP was modeled after previous work by Harza (1989b). General Electric submitted the above plans to the USEPA in June 1992. Comments were provided by USEPA on the QAPP in a letter to General Electric dated March 10, 1993. A response to these comments was submitted on May 27, 1993. Comments on the FSP and FSP addendum have not been provided by USEPA.

The utility of the capillary column PCB analytical technique employed in this monitoring program is limited at current water column PCB concentrations which are generally less than the practical quantitation limit (PQL) of 44 ng/l. This is because PCB signature patterns are less accurate at these levels due to differences in homolog and congener group method detection limits. The comparison of split samples analyzed for PCBs by USEPA method 8081 and NEA608CAP performed in 1996 (Section 1.4.5 and Appendix B) indicated close agreement of total PCB results collected at HRM 197.0 and HRM 194.2. These data support General Electric's recommendation to change to method 8082 for situations where PCBs are generally not detected or where detected PCBs resemble unaltered Aroclors, such as at the Fort Edward monitoring station (HRM 194.2). This recommendation was previously provided in a letter to Douglas Tomchuk of USEPA (O'Brien & Gere 1994c). The analytical method change has not been implemented since USEPA approval has not been provided.

2.1. Sampling locations and collection procedures

The 1996 PCRDMP was conducted to identify potential PCB contributions from the capped remnant deposits by monitoring water borne PCB concentrations both upstream and downstream of the remnant deposits. Water column samples were obtained weekly from the same two river locations previously sampled for the PCRDMP upstream of the remnant deposits and one river location downstream of the remnant deposits (Table 1-2 and Figure 1-1). Sampling at HRM 196.8 was discontinued in September 1996 following approval by USEPA (1996). Samples were collected following procedures

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and specifications defined in the FSP and FSP addendum, and QAPP (Table 1-2; O'Brien & Gere 1992a,b; 1996b).

2.2. River flow monitoring

River flow monitoring was conducted to provide a basis for developing mass transport and loading estimates, and for developing time of travel estimates through the study area. Time of travel estimates were developed to allow monitoring of a parcel of water as it progressed through the remnant deposit reach of the river (Appendix C). Flows were measured by the USGS at the Fort Edward gaging station located at HRM 194.7 approximately 1,500 ft upstream of the sampling station (Figure 1-1). River flows in this region of the river are controlled by meteorologic conditions within the watershed and hydrologic controls at upstream reservoirs such as the Great Sacandaga Lake.

2.2.1. Summary of 1996 mean daily flow data

In the data summary (Table 2-1), mean daily flows are presented for each sampling date from a data summary by USGS obtained in January 1997. Final flow data are presented through September 1996. Provisional data, which are subject to revision, are provided for sampling dates after September 1996. A hydrograph of 1991 through 1996 flow data at Fort Edward is provided in Appendix C (Figure C-1). The appendix also includes a statistical comparison of 1996 flow data with flow data collected from 1991 to 1995 (Figures C-2 through C-5). For reference, estimated flood recurrence levels based on mean discharge over a 24-hour period, are provided as well (Appendix C, Table C-1).

Overall, river flows during 1996 were higher than average for the past 5-years (Appendix C, Figures C-1 through C-5). During the winter months temperatures were colder than average and snow pack levels were higher than the 5-year average resulting in higher than average river flows (Appendix C: Figure C-2). As a result, the river had spring runoffs of greater than 13,000 cfs for approximately six weeks. For other recent years, high flows associated with snow melt typically occurred for a two week period. The summer of 1996 was wetter than recent summers resulting in higher flows during the summer months (Appendix C: Figure C-4). Considerable variability in river flow rate was observed during late summer sampling activities likely due to intermittent operation of several hydroelectric facilities and other water users that are located upstream of the project area (Appendix B). During the fall months higher than average flows included rain events that occurred in November and December (Appendix C: Figure C-5).

2.3. Sample handling and equipment cleaning procedures

Samples were handled according to procedures presented in the QAPP (O'Brien & Gere 1992b). Upon collection, samples were placed in appropriate containers, chilled to approximately 4 °C, and transported to the analytical laboratory for analysis. Sample bottles were labeled with designations identifying sample location, date, project, and sampler. Standard chain of custody procedures were followed, as detailed in the QAPP (O'Brien & Gere 1992b).

Field equipment was cleaned between sampling rounds at the O'Brien & Gere office in Syracuse, New York. Dedicated Kemmerer bottle samplers were used at the two bridge sampling stations. Therefore, routine field cleaning of equipment was not required. Equipment cleaning was performed according to procedures specified in the FSP addendum (O'Brien & Gere 1996b). Field logs maintained by sampling personnel, documenting field activities, are presented in Appendix D.

2.4. Laboratory analytical methods

Laboratory testing of water column samples was performed by Northeast Analytical, Inc. (NEA) and consisted of analyses for PCBs by capillary column methodology and for total suspended solids (TSS). Analyses were performed on whole water (unfiltered) samples. Details of analytical methodologies are provided in the PCRDMP QAPP (O'Brien & Gere 1992b)

2.4.1. Capillary column analysis of PCBs

Whole water capillary column PCB analyses were performed by NEA using Method NEA-608 CAP, Rev. 3.0 (NEA 1990). The method detection and practical quantitation limits for the method are 11 ng/L and 44 ng/L, respectively. In samples collected for the PCRDMP, concentrations of PCBs which are between the method detection limit and PQL (from 11 to 44 ng/l) are considered estimates and results are reported with a "P" qualifier (Table 2-1). The homolog and congener distributions may be less reliable at these low levels due to decreased sensitivity of the method for lower chlorinated congeners close to the detection limit, as discussed in Appendix A.

Recent research identified analytical biases in the quantification of PCB congener data generated by Method NEA608CAP (HydroQual 1997). These analytical biases resulted from error in the original calibration of the PCB standard used in the NEA608CAP (calibration error), and from coeluting mixed peak deconvolution assumptions used for Hudson River samples (coelution error). Calibration error and coelution error correction factors were developed to adjust the PCB data for the analytical biases inherent in Method NEA608CAP (HydroQual 1997). These correction factors have been applied to PCB analytical data collected from the Hudson River (O'Brien & Gere 1997a).

2.4.2. PCB analysis using USEPA method 8081

Additional samples were analyzed by NEA using USEPA Method 8081 with a detection limit of 11 ng/l (USEPA 1986; Section 1.4).

2.4.3. Total suspended solids analysis

Analyses for TSS were performed according to USEPA Method 160.2 (USEPA 1983).

2.5. Quality assurance/quality control

The data quality objectives for the PCRDMP include the generation of data of sufficient quality to support both qualitative and quantitative determination regarding PCB flux from the Fort Edward Dam remnant deposit sites to Hudson River water (O'Brien & Gere 1992a, b). Following completion of the 1996 PCRDMP, data validation (described in Sections 2.6 and 3.2) was performed on PCB data to facilitate evaluation of data quality from results of QA/QC sample analyses. A summary of the data validation results is provided in the data validation technical memorandum, presented as Appendix E (bound separately).

Quality assurance/quality control samples were collected on a routine basis during the PCRDMP in accordance with the QAPP (O'Brien & Gere 1992b). These samples consisted of a matrix spike, duplicate, and equipment blank sample included with each round of sampling. Matrix spike and duplicate results were within expected criteria, indicating acceptable analytical accuracy and data precision (Table 2-2). PCBs were not detected in equipment blank samples associated with PCRDMP samples collected in 1996.

2.6. Data reporting and validation

2.6.1. PCB data

A specific NYSDEC - Analytical Services Protocol (ASP; NYSDEC 1991) reporting requirement does not exist for analysis of PCB congeners by capillary column. Therefore, a reporting package and quality control program was developed which adheres to the guidelines set forth in the NYSDEC ASP Superfund PCB/pesticide requirements. The contents of the data reporting package developed for capillary column PCB analyses, including quality control data, have been summarized previously (O'Brien & Gere 1995b). Data summary reports for PCB analyses are included in Appendix F of this report (bound separately).

Data validation of PCB data conducted for this investigation involved a systematic evaluation of analytical data quality by comparing the data generation process (sample collection through sample analysis) to quality control criteria established prior to the initiation of the field investigation (O'Brien & Gere 1992b). As a result of the validation process, sample data were considered useable as presented, approximated, or unusable for intended uses (Appendix E, bound separately). Data validation results are briefly discussed in Section 3.2 of this report.

Analytical biases (Section 2.4) were identified after data validation was completed. Because the biases were systematic errors, the overall assessment of analytical performance and data usability of uncorrected data also applies to the corrected data. The data validation technical memorandum discusses the validation of the uncorrected PCB data, except for the results of duplicate analyses which are reported using the corrected data.

2.6.2. Total suspended solids data

Water column samples were analyzed for TSS (USEPA method 160.2; USEPA 1983) by NEA. Upon completion of the analyses the laboratories generated a series of data reports consistent with NYSDEC ASP Category B reporting requirements. Additional data recorded by the laboratory during TSS analyses and maintained by NEA are available, should more detailed review be required at a later date. Data reports for TSS analyses are presented in Appendix G of this report.

2.7. Health and safety

Field activities were conducted in accordance with the health and safety procedures presented in the project specific health and safety plan (O'Brien & Gere 1992c).

3. Results

This section presents the results of PCRDMP water column monitoring of PCBs and TSS conducted in 1996. PCB data obtained from Method NEA608-CAP that are presented in this section have been corrected for analytical bias (Section 2.4). A comparison of laboratory-reported PCB results and PCB results corrected for analytical and coelution biases is presented in Appendix H.

The river data were evaluated at two levels of detail consisting of a discussion of total PCB and TSS concentration analytical results, and an evaluation of PCB composition using PCB homolog and congener distribution data:

Total PCB and TSS concentrations were used to evaluate temporal and spatial concentration patterns in the river upstream and downstream of the remnant deposits. PCB concentrations at each location were also used to estimate mass flux of PCBs. River flow at each sampling location was similar, since additional flow from tributaries in this region of the river is insignificant. Therefore, mass flux estimates for both sampling stations were developed using USGS daily average flow data recorded at the Fort Edward gaging station.

Total suspended solids were analyzed to evaluate PCB association with solids in the water column. The hydrophobic characteristics of PCBs favor such interaction. Therefore, correlation of TSS with flow and/or PCB concentration would provide evidence for PCB transport by mechanisms such as bed scouring. These potential associations were evaluated.

PCB composition evaluation of 1996 water column data consisted of the following:

- The composition of PCBs in water column data were compared to those of commercial Aroclor mixtures to evaluate the original composition of water column PCBs.
- The composition of water column PCBs upstream and downstream of the remnant deposits were compared to evaluate if compositions were similar over this section of the river, consistent with previous monitoring.

- Finally, in the discussion section (Section 4.7), composition of PCBs in the water column were compared to potential source materials in the remnant deposit region of the river.

PCB composition evaluation was limited because mean water column PCB concentrations at HRM 194.2 were approximately 14 ng/l. For reliable evaluation of PCB composition data, concentrations above the PQL are preferred. At PCB concentrations near the detection limit, such as those that occurred in the water column in 1996, evaluation of PCB composition is subject to analytical limitations (Appendix A).

A detailed discussion of PCB source identification using capillary column analytical data is provided in Appendix A. This results section also provides a summary of QA/QC data. The QA/QC summary focuses on an assessment of accuracy (Table 1-1) based on field duplicate results and matrix spike recoveries.

3.1. Water column monitoring

The 1996 routine water column monitoring program consisted of collection of water column samples from sampling stations located at approximate HRM 197.0 and HRM 194.2 (Table 1-2). These two sampling stations represent background and downstream of remnant deposits, respectively (Figure 1-1). Fifty-one rounds of PCRDMP samples were collected weekly from January 19 to December 30, 1996. Ice cover on the river at Fort Edward prevented sampling earlier in January. Also, an additional eight rounds of sampling were performed at the PCRDMP stations during the summer of 1996. Sampling was also conducted at HRM 196.8 through September 9, 1996. Sampling was discontinued at this station following approval by USEPA (Table 1-2). Samples were analyzed for PCBs and TSS (Section 2.4).

3.1.1. Total PCB and TSS concentrations

The mean and 95% confidence interval about the mean for PCB concentrations at each sampling station are presented in Figure 3-1. Results from each station are presented separately below.

Background station (HRM 197.0). At the background sampling station (HRM 197.0), water column PCB concentrations were below the method detection limit in 100% of the samples collected at this station in 1996

(Table 2-1). Total suspended solids concentrations ranged from less than 1.0 to 9.6 milligrams per liter (mg/l).

Upstream of the remnant deposits region of the river. Data from station HRM 196.8 are not considered reliable for estimating PCB loading to the river upstream of the remnant deposits due to proximity to the Bakers Falls source(s) (Section 1.3, Table 1-2, Appendix A). Water column PCB concentrations at this station were not detected in 31 out of 35 samples collected at this station, although concentrations up to 341 ng/l were also detected. The geometric mean, median, and standard deviation were 12, <11, and 56 ng/l, respectively (Table 2-1). Total suspended solids concentrations ranged from less than 1.0 to 20 mg/l.

Downstream of the remnant deposits region of the river. At the sampling station downstream of the remnant deposits (HRM 194.2), water column PCB concentrations ranged from less than 11 ng/l to 56 ng/l during routine monitoring with a geometric mean, median, and standard deviation of 14, 12, and 8 ng/l, respectively (Table 2-1). However, additional sampling detected concentrations up to 80 ng/l (Table 2-1, Section 1.4). Total suspended solids concentrations ranged from less than 1.0 to 8.7 mg/l.

3.1.2. PCB composition

PCB composition using homolog and congener distribution data provide two levels of detail. PCB homolog distributions provide a general characterization of PCB composition whereas PCB congener distributions provide additional detail (Appendix A). Evaluation of PCB composition is less accurate below the PQL, due to detection limit differences of individual congeners (O'Brien & Gere 1994b, 1995a; Appendix A). For example, monochlorobiphenyls were not detected in total PCB concentrations near the PQL. Thus, increases in weight percent composition of tri- and tetrachlorobiphenyls at concentrations below the PQL were believed to be an artifact of analytical sensitivity differences (Appendix A). Total PCB concentration of samples collected for the 1996 PCRDMP were generally less than the PQL (44 ng/l). Consequently, evaluation of 1996 data for homolog and congener pattern recognition were limited to three sample data with total PCB concentrations greater than the PQL. For PCB data below the PQL, 1996 data were qualitatively compared to data from previous years to assess stability of the PCB composition data over time.

PCB homolog distributions. PCB homolog distributions for each sampling result with total PCB concentrations greater than the method detection limit are presented in Table 3-1. The majority of the PCBs detected in the water column samples were tri- and tetra-chlorobiphenyls (Figure 3-2). For comparison purposes, the homolog distribution for Aroclor 1242 analyzed by NEA methodology is also presented (Figure 3-2). Homolog composition of samples collected upstream and downstream of the remnant deposit region of the river (HRM 196.8 and 194.2) closely resembled Aroclor 1242. However, the samples were slightly more chlorinated than a commercial Aroclor 1242 mixture, consistent with previous monitoring results (O'Brien & Gere 1996b).

PCB congener distributions. Congener distributions for water column monitoring for sampling dates with PCB concentrations greater than the PQL are presented in Figure 3-3. The PCB composition of samples resembled Aroclor 1242 (Figure 3-3).

3.2. Quality assurance/quality control

The data summary tables (Tables 2-1 and 3-1, Appendix B: Table B-1), include PCB data qualifiers identified during the data validation process. Data validation included routine PCRDMP sampling stations (Tables 2-1 and 3-1), and plunge pool, boat launch, and Thompson Island Dam data (Appendix B: Table B-1). For PCB concentrations reported below the method detection limit, "<11 ng/l" is reported in the summary tables. PCB concentrations between 11 ng/l and 44 ng/l represent concentrations above the method detection limit, but below the PQL. PCB results in this range were noted with a "P" to identify the results as estimated concentrations. Preliminary field data previously provided to USEPA and NYSDEC in weekly and monthly progress reports did not include results of data validation review (General Electric 1996).

A total of 261 water samples were validated and the results of this evaluation indicate that 99% of the data are useable for quantitative purposes. Validation identified 31 sample results which required qualification as estimates (J) due to minor quality control issues. Estimated results included results which were outside of duplicate RPD criteria, holding times, performance criteria concerns (retention time window and internal standard area). During 1996, equipment blank concentrations were less than 11 ng/l (Table 2-2), except for two equipment blanks associated with plunge pool samples collected by Dames & Moore (Appendix B: Table B-1). The plunge pool samples associated with the blank contamination were qualified as undetected "U".

Field sampling and laboratory analytical accuracy was assessed by evaluation of precision and potential bias (Table 2-2 and Appendix E). For this purpose, duplicate and matrix spike samples were analyzed along with each of the fifty-one rounds of PCRDMP samples. The statistical analysis of duplicate results did not include 30 samples which were non-detect. Precision, as measured by results of 21 duplicate analyses with concentrations above the detection limit, was good with an average RPD of 11%. Comparison of original and duplicate homologs indicated overall precision is well within the expected RPD range of 35% or less (Appendix E).

However, duplicate samples collected on January 24, 1996 at HRM 188.5 and July 17, 1996 at HRM 196.8 were outside precision criteria. Analysis of archived samples associated with these duplicate sets suggested that sample variability was the likely source of the discrepancy observed (Table 2-1). Validation guidance suggests that all samples associated with that round of sampling should be qualified as estimates "J". Review of these duplicate data in the context of other data collected during that time period indicate that it is more appropriate to approximate the subject individual sample data rather than the samples collected for the entire sampling round. The rest of the data collected for these sampling rounds are consistent with sampling results of additional sampling conducted during in the same time period.

For an assessment of PCB data potential analytical bias, matrix spike sample results were examined. The average matrix spike recovery, for the 51 matrix spike samples analyzed, was 99%. The data did not exhibit analytical bias as indicated by matrix spike recoveries within the expected range of 70 to 130%.

Laboratory reports containing PCB data along with supporting documentation are provided in Appendix F (bound separately). The level of completeness in this data set conforms to the level of completeness specified in the QAPP (O'Brien & Gere 1992b).

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4. Discussion

The potential impact of the remnant deposits or other possible PCB sources on water column PCB concentrations in the Hudson River was evaluated through qualitative and semi-quantitative evaluation of spatial and temporal data[5]. The 1996 PCRDMP data were evaluated from several perspectives:

Data quality was evaluated to assess how sampling, analytical, and hydrologic data limitations (Section 4.1) affect interpretation of PCRDMP data.

Spatial data from upstream of the remnant deposits (plunge pool, boat launch, and HRM 196.8) were compared and contrasted with data from downstream of the remnant deposits (HRM 194.2; Sections 4.2 and 4.3). Consequently, other potential sources of PCBs in the remnant deposit region of the river were evaluated as well. Spatial trends were also evaluated using time of travel data from hydrofacility maintenance operations sampling (Section 1.4).

Temporal data were compared and contrasted with seasonal patterns observed during previous years. Overall trends in water column concentrations at the Fort Edward sampling station at Rogers Island downstream of the remnant deposits were evaluated for the period 1991 to 1996 (Section 4.4).

Statistical evaluations of water column data were used to further evaluate overall trends (Section 4.5).

Potential associations of PCB concentrations with TSS and flow were evaluated for evidence of river bed scouring (Section 4.6).

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5 The data were examined to identify general types of environmental observations: *Trends* indicate long-term change in concentrations. *Random* fluctuations occur when random, unassignable variations occur along a time sequence. *Cycles* are periodic changes in concentration which may be caused by a number of variations including seasonal climate, flow, and biological activity. Such cycles are not trends because they do not represent long-term change. *Pulsed* loadings are short-term increases in chemical concentrations. *Step changes* may occur when sharp, long-term, changes take place (Gilbert 1987).

Composition signatures of PCBs were evaluated using PCB homolog and congener distributions from which the source(s) of PCBs was inferred (Section 4.7).

Evaluation of potential PCB sources in the remnant deposit region of the river (Section 4.8).

Spatial and temporal data were evaluated using total PCB concentrations and PCB mass transport estimates.

4.1. Data quality

The decreases in water column PCBs to near the method detection limit (11 ng/l) increase the importance of understanding sampling and analytical limitations when evaluating the PCRDMP water column data quality. Annual median water column PCB concentrations have decreased from 32 ng/l for the period from 1993 to 1995, to 12 ng/l in 1996. The following interpretive limitations are noteworthy.

Sampling method differences due to accessibility limitations may bias results preventing direct comparison of results between sample locations (Section 1.3; Table 1-2).

In addition, the PCB analytical method has sensitivity limitations that become evident at concentrations near the method detection limit (Section 2.4; Appendix A). At total PCB concentrations below the PQL, such as those observed in 1996, reported concentrations are considered estimates (Section 2.4; Appendices A and E) which increases the uncertainty in spatial and temporal trend evaluations at concentrations between the method detection limit and the PQL (11 ng/l to 44 ng/l). The reliability of PCB composition evaluation is also affected by analytical detection limits (Appendix A). Evaluations of PCB composition are also more reliable at PCB concentrations above the PQL. The PCB analytical method (NEA608CAP) has been modified to correct for analytical biases (Section 2.4; O'Brien & Gere 1997a).

Mass transport values (Section 4.3) incorporate sampling and analytical errors as well as errors associated with flow estimates (Section 2.2). Estimates of mass transport may be generated using mean daily flow data or instantaneous flow data (Appendix C). Mean daily flows are the most reliable hydrologic data available as they are subject to review and editing by USGS (Appendix C). However, flow variabilities can be substantial over a 24-hour period. Therefore, mass transport values calculated using instantaneous flow estimates can more closely approximate actual loading associated with the water column data for a particular sampling date (Section 2.2). For a given time period, the impact of individual data variabilities is reduced by averaging individual observations. For example, PCB mass transport values calculated from 1995 data were generally comparable within 20% using both approaches. However, differences up to 80% occurred, as well. Interpretation of annual PCB mass transport data is complicated by variabilities in river hydrology. For example, the spring and summer of 1995 had significantly lower flow than those experienced in 1996 (Appendix C).

For samples with PCB concentrations below the analytical detection limit, mass transport is estimated using a value of 10.9 ng/l. This imposes a baseline mass transport value that is interpreted as an upper bound for PCB transport at a given location where PCBs were not detected. Other approaches increase the uncertainty as to the meaning of the baseline value.

4.2. Background data

Water column PCBs were not detected at the background station in 1996 indicating that this station continues to be appropriate for background monitoring purposes (Table 4-1). Therefore, mass transport of PCBs at the background station during 1996 was less than the baseline estimate of approximately 0.16 kg/day (Table 4-2). Undetected water column PCBs at this station in 1996 are contrasted with the detection of PCBs in 52% of the samples collected at this station in 1995 and approximately 30% detection for the period of 1991 to 1994. The origin of the increased detections of PCBs in 1995 was uncertain (O'Brien & Gere 1996b). The occurrence of PCBs in 1995 coincided with a sampling equipment interference problems and lower mean river flows. Either of these factors may have contributed to detections of PCBs in 1995 compared to 1996. Another factor that may have contributed to decreased detections of PCBs at this station in 1996 may be the removal of PCB contaminated shore deposits from the Queensbury site located upstream of the background site.

4.3. Spatial observations

Separate discussions of spatial data are provided below for data collected upstream of the remnant deposits (Section 4.3.1), and data collected downstream of the remnant deposits (Section 4.3.2). Time of travel sampling conducted for the hydrofacility operations monitoring provide additional insights into spatial relationships between the sampling stations (Section 4.3.3).

4.3.1. Spatial observations of samples collected in vicinity of Bakers Falls
Concentrations of PCBs in the vicinity of the Bakers Falls source(s) in 1996 (Table 2-1, Appendix B) indicates that this source, although reduced, continues to be the primary source of PCBs detected in this region of the river. Samples collected in the vicinity of the falls consist of plunge pool, boat launch and HRM 196.8 samples (Table 2-1, Appendix B: Table B-1). PCB concentrations detected in water samples collected in the vicinity of the Bakers Falls source(s) have been highly variable, with the plunge pool samples being most variable. In 1996, PCB concentrations of these samples ranged from <11 to over 1,000 ng/l. The PCB concentration differences observed in samples collected at these three stations indicate that data are neither representative of overall water concentrations nor comparable to each other.

The variability of PCB concentrations in samples collected at the vicinity of Bakers Falls decreased following implementation of river bed seep collection in September 1996. Concentrations of PCBs in water samples collected from October through December 1996 in the plunge pool ranged from 12 to 121 ng/l. Seasonal decreases may have also played a role in the PCB concentration declines observed (Section 4.4).

Hydrofacility operations that began in December 1995 likely changed the water column transport of PCBs from the Bakers Falls source(s) area. Initiation of hydrofacility operations resulted in the diversion of water from upstream of Bakers Falls source(s) and discharging it downstream of the source(s) along the west shore (Section 1.4). Therefore, plunge pool samples collected when the falls is inactive represent pool concentrations that occur during periods of dead storage when flow through the pool is minimal and samples collected at HRM 196.8 may represent background water diverted by the hydrofacility rather than overall water column PCB concentrations in this portion of the river.

Water column PCB concentration decreases observed at HRM 196.8 in 1996 coincided with hydrofacility start-up and operation. Water concentrations were generally less than the detection limit at HRM 196.8 in 1996 and plunge

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pool samples were judged to be a better indicator of PCBs entering the river from the Bakers Falls source(s). As a result, sampling was discontinued at HRM 196.8 in September 1996 following approval by USEPA (1996).

Interpretation of spatial trends using estimates of mass loading to the Hudson River from the Bakers Falls source(s) is precluded by inaccuracies imposed by sampling limitations (Table 1-2, Section 1.4). As cited previously, sampling efforts have been unable to obtain representative samples in the vicinity of the source(s) due to uncertainty as to the specific location and physical state of PCB loading coupled with the intermittent occurrence of flows at the falls (Section 1.4).

4.3.2. Spatial observations downstream of the remnant deposits

Previous monitoring linked water column PCB concentrations observed at the Fort Edward sampling station (HRM 194.2) located downstream of the remnant deposits with PCBs originating from the Bakers Falls source(s) (Appendix A). Results of extensive sampling conducted in 1995 to isolate potential sources of PCBs, including the remnant deposits and former outfall 004, demonstrated that water column PCB mass transport was equivalent upstream and downstream of the remnant deposits. Therefore, PCBs potentially originating from the remnant deposits were at or below the sensitivity of the measurement program (O'Brien & Gere 1996b).

In 1996, water column PCB concentrations and mass transport downstream of remnant deposits were statistically lower than previous years and also less variable (Tables 4-1 and 4-2). Water column PCB concentrations in the remnant deposit region of the river have declined since implementation of Bakers Falls source(s) control measures began in 1993 (O'Brien & Gere 1995a). The mass loading from the Bakers Falls source(s) decreased from approximately 1.2 kg/day in 1992 to approximately 0.4 kg/day in subsequent years, 1993 through 1995 (Table 4-2). The 95% confidence level indicates that the annual differences in mass loading were not statistically significant from 1993 through 1995.

Additional water column sampling conducted as the Fort Edward transect study in 1996 examined the accuracy and representativeness of samples collected at HRM 194.2 (Appendix B). This program extensively sampled a single parcel of water over an 8-hour period. Results of the study indicated that mass transport estimates using data collected at HRM 194.2 were representative of river water column concentrations during the low flow conditions sampled. Therefore, the Fort Edward data provide the most reliable data to estimate overall water column PCB mass transport from Bakers Falls source(s).

The results of the Fort Edward transect study provided additional insights into the spatial distribution of PCBs in the river at the HRM 194.2 sampling station. The study consisted of sample collection at six stations located across the river perpendicular to flow direction (Appendix B: Figure B-8). PCBs were detected in the sampling station nearest to the east shore, but not at the other stations. Results of sample collection separately at the HRM 194.2 east and west channel bridges also indicated that water column PCBs travel down the east channel. These observations were in contrast to the lateral distribution of PCBs observed during 1995 investigations which showed relatively uniform concentrations across the river (O'Brien & Gere 1996b). It is likely that the discharge of background water by the hydrofacility along the west shore has altered the spatial distribution of PCBs in the water column.

The spatial distribution of water column PCBs during high flow has not been evaluated. Elevated flows may increase the importance of sediment bed load transport and, to the extent PCBs are present in the bed load, PCBs may go undetected at a sampling station if migrating along the river bed.

Uncertainty in the accuracy of mass transport estimates increases when water column concentrations at Fort Edward are less than the detection limit. Water column PCB mass transport is estimated as less than the baseline value (Section 4.1). For PCB concentrations below the method detection limit at HRM 194.2, the baseline mass transport value is considered to be an upper bound value. For these occurrences, it is assumed that detected PCB concentrations upstream of the remnant deposits (*e.g.*, plunge pool, boat launch, and HRM 196.8 samples) represent some loading less than the baseline value at HRM 194.2.

4.3.3. Time of travel spatial relationships

Time of travel sampling results are useful for interpretation of spatial relationships between sampling stations. Sampling was performed to evaluate the potential effect of occasional temporary inundation of Bakers Falls during low flow as a result of hydrofacility maintenance operations. On September 4, 1996, parcels of water flowing from Bakers Falls through the remnant deposits region of the river to HRM 194.2 at Fort Edward were sampled before, during and after temporary inundation of the falls. Water column PCB concentrations increased during the brief inundation of the falls (Appendix B: Tables B-2 and B-3). The potential impact of the temporary inundation of the falls on water column PCB concentrations was evident from samples collected during this monitoring, although the spatial relationships are not fully understood.

4.4. Temporal observations in remnant deposit region of river

Water column concentrations of PCBs in the remnant deposits region of the river declined sharply and became less variable in 1996[6] (Figure 1-3). Previous decreases in water column PCB mass transport observed in the remnant deposits region of the river between 1993 and 1995 coincided with the implementation of remedial activities at the Bakers Falls source(s)(Figure 4-1). In 1996, dewatering the falls (Section 1.3) and river bed seep collection of PCB DNAPL (Section 1.3) likely contributed to additional decreases observed.

Median water column PCB concentrations at HRM 194.2 during 1996 were approximately 12 ng/l compared to median concentrations of 33 ng/l from 1993 through 1995 (Table 3-2). In 1996, water column PCB concentrations at HRM 194.2 were less than the detection limit for approximately 50% of the 51 rounds of sampling conducted during the year (Table 2-1). For other recent years, water column PCB concentrations were less than the detection limit for less than 10% of the sampling rounds.

The maximum water column PCB concentration observed at HRM 194.2 in 1996 was 80 ng/l. It occurred during a rain event on August 9, 1996. In contrast, maximum concentrations at HRM 194.2 during 1995 and 1994 were 367 and 267, respectively. Consistent with previous monitoring, elevated PCB concentrations in 1996 were detected as individual sampling occurrences. There has not been a period of sustained elevated PCB concentrations since the summer and fall of 1991 and 1992, before source control measures were implemented at the Bakers Falls source(s) (O'Brien & Gere 1993b; 1994b).

Seasonal differences in water column PCB concentrations downstream of the remnant deposits were subtle (Figure 4-2). Slight increases in variability occurred in during summer, although mean concentrations were not statistically different.

Comparisons of mass transport on an annual basis focus on summer low flow period because data for this season is most comparable from year to year. Other seasons experience greater flow variabilities that complicate interpretation of data. Even so, annual mean flows during summer months

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[6] Temporal discussion focuses on HRM 194.2 since data from other sampling stations (HRM 196.8, plunge pool and boat launch) are more difficult to interpret due to concerns with representativeness and sampling variabilities (Section 4.1).

may vary by over 50% (Appendix C, Figure C-4). Temporal trends of PCB concentration and mass transport in 1996 are not directly comparable to trends in 1995 due to flow differences (Appendix C). Average mass transport in 1996 (Figure 4-3) was similar to that in 1995.

4.5. Statistical evaluation of overall spatial and temporal trends in remnant deposit region of river

A statistical evaluation of overall spatial trends was performed by reviewing general statistics, and using box plot analyses and the Q Test.

General statistics 1991 through 1996. In 1996, water column PCB concentrations at the Fort Edward sampling station downstream of the remnant deposits did not show statistically significant seasonal concentration differences throughout the year (Figure 4-2). Mean PCB concentrations at HRM 196.8 were similar, but concentrations more variable. Compared to 1995, PCB concentrations at HRM 194.2 were statistically lower.

Box plot analyses. The annual median PCB concentration for sampling station HRM 194.2 was compared for the years 1993 through 1996 (Figure 4-4). Water column concentrations were statistically lower in 1996 and the variability decreased, as well. The box plot analyses highlight the median concentration as the most robust statistic representing water column concentrations. When the data is log normal, the data variability is high and the geometric mean best approximates the median. In contrast, the arithmetic mean better approximates median when the data is less variable and is normally distributed. The box plots expose this difference and the trend change that occurred. In 1996, the water column PCB concentration and variability was low and the arithmetic mean approximates the median. In previous years, the median water column concentrations were approximated by the geometric mean. PCB concentrations below the detection limit contribute to the observed statistical shift.

Q Test. An evaluation of the overall spatial and temporal trends is complicated by short-term variabilities in PCB concentration through the remnant deposit region of the river. To better expose the overall trends in the data, a Q test was performed to identify statistical outliers in the data set[7]. Using the Q test, PCB detections at HRM 196.8 greater than 100 ng/l on July 17 and August 7 were identified as outliers. Outliers identified by the Q test are considered to be due to short-term variability and are not included in long-term trends (Figure 4-5).

4.6. Comparison of PCB concentrations, TSS, and flow

Evaluation of the potential association of PCBs with TSS and flow was performed to evaluate potential riverbed scouring in the remnant deposits region of the river. Under such circumstances it is anticipated that elevated PCB concentrations would be correlated with elevated TSS and/or flow. Correlations of these parameters are not evident from the results of the 1996 PCRDMP.

Specifically, using a linear regression model to evaluate possible relationships, elevated PCB concentrations were not correlated with flow at HRM 194.2 (r^2 = 0.01; Figure 4-6a). Actually, the highest water column PCB concentrations occurred during low flow period (Figure 1-4). Also, concentrations of water column PCBs and TSS were not correlated (r^2=0.04; Figure 4-6b). However, TSS concentrations and flow were moderately correlated (r^2=0.34; Figure 4-6c).

Where concentration does not increase with increased flow, loading increases occur as explained previously (Section 4.1). The divergence of water column PCB concentrations with TSS and flow under the flow regimes of 1993 through 1996 suggests that mechanisms other than scouring of PCB contaminated sediments are responsible for transport of PCBs in the river for the monitoring period, as indicated above. Water column TSS concentrations at the Fort Edward monitoring station ranged from <1 to 8.7 mg/l and had a median concentration of 2.2 mg/l, indicating that sediments available for scouring in this region of the river are limited (Table 2-1).

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[7] The ratio Q is calculated by arranging the data in decreasing order. The difference between the suspected outlier and its nearest neighbor is divided by the range, that is, the difference between the highest and lowest values. The ratio is compared with tabulated values of Q at a desired confidence level. If Q exceeds the tabulated value for a given number of observations, then the questionable measurement may by omitted with a selected confidence level that the data is not representative overall trends (Christian 1980).

Concentrations of TSS at the Fort Edward monitoring station were comparable to TSS concentrations at the background station (Figure 4-7). The correlation of TSS concentrations at both locations during elevated TSS loading suggests that TSS loading observed at the Fort Edward monitoring station originated upstream of the remnant deposits. River bed survey information associated with the *1995 River Monitoring Test* (O'Brien & Gere 1996c) and 1996 sampling at the Fort Edward transect (Appendix B) confirmed the lack of large amounts of scourable sediment in the river bed in this reach of the river.

4.7. PCB composition

Evaluation of PCB composition is limited due to availability of data suitable for detailed interpretation (Section 4.1, Appendix A). Evaluation of PCB composition is limited to PCB concentrations greater than the PQL (44 ng/l) due to uncertainties in pattern recognition at lower concentrations (Appendix A). Results from three samples collected in 1996 met these criteria. The discussion below identifies potential sources (Section 4.7.1) and evaluates the 1996 data by comparison of water column PCB composition with known potential sources (Section 4.7.2).

4.7.1. PCB composition of potential sources and commercial Aroclor mixtures

Characteristic homolog and congener distributions were identified for commercial Aroclor mixtures of PCBs and the following potential sources of PCBs in the remnant deposits region of the river (Figure 1-1; Appendix A):

Hudson Falls plant site. Remedial investigation of the Bakers Falls source(s) in 1993 identified the PCB composition of source materials at the Hudson Falls plant site as predominantly unaltered Aroclor 1242 (O'Brien & Gere 1994a).

Remnant deposits. Historic PCB composition data, although limited, identified PCBs in remnant deposits as an altered Aroclor pattern (Canonie Environmental 1990), likely due to environmental weathering and bioalteration.

Former outfall 004. A recent investigation of sediments in the vicinity of former outfall 004 identified a range of PCB compositions consisting primarily of Aroclor 1242 with a secondary component of Aroclor 1248 or

Aroclor 1254. Congener distributions had varying degrees of alteration (Dames & Moore 1994; O'Brien & Gere 1995b).

Queensbury. A recent investigation of sediments in the vicinity of Queensbury identified a composition consisting of altered Aroclor 1242 (O'Brien & Gere 1995d). Queensbury data were used as reference for the background sampling station (HRM 197.0).

PCB compositions of these potential PCB sources were compared with PCRDMP water column data and evaluated for evidence of changes in composition due to exposure of PCBs to the environment including site-specific physical and chemical processes (weathering), and biological processes (aerobic biodegradation and anaerobic dechlorination). Therefore, changes in PCB composition as evident in homolog and congener distributions were used to isolate different PCB sources (Appendix A).

Aroclor 1242 is distinguished by the presence of primarily tri- and tetrachlorobiphenyls. Likewise, similar homolog distributions were identified in the samples collected for the PCRDMP, from Bakers Falls to the sampling station downstream of the remnant deposits. In contrast, past sampling identified the PCBs buried in upper river sediments to contain primarily mono- and dichlorobiphenyls (O'Brien & Gere 1991, 1993c) characteristic of biological alteration. Such alteration results in selective *meta* and *para* dechlorination with elevated *ortho* substituted congeners, producing a unique composition which is not found in commercial mixtures (Brown et al. 1987a; Brown et al. 1987b; Brown et al. 1984).

4.7.2 Composition of PCBs in remnant deposit region of river

The composition of water column PCBs in the remnant deposit region of the river was similar to previous monitoring which indicated a single type of PCBs is primarily responsible for the observed PCB composition in this region of the river. Water column PCB homolog and congener distributions in the vicinity of the remnant deposits generally correspond with patterns found in samples from the Bakers Falls source(s) (Appendix A).

Data collected from sampling stations upstream of the remnant deposits indicate that the Bakers Falls source(s) consists predominantly of Aroclor 1242 that has not been altered or degraded by environmental processes. This is unusual because it is common for PCB homolog and congener distributions to change when exposed to the environment over extended periods, due to weathering and bioalteration. Therefore, the similarity of PCBs in samples collected near Bakers Falls to that of unaltered Aroclor 1242 is significant

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because it allows the "fingerprinting" of the PCBs in the river originating from this source (O'Brien & Gere 1993d).

Water column congener results were in contrast to those anticipated if sources other than the Bakers Falls source(s) were the primary contributor(s):

- Water column PCB concentrations at the background sampling station are typically less than the detection limit indicating that potential sources upstream of this sampling station are minor. Water Column PCBs were not detected at this station in 1996.

- If the remnant deposits were actively contributing, water column PCB congener patterns should resemble altered Aroclor 1242 found in the remnant deposits. Limited data available from the remnant deposits show evidence of environmental weathering and bioalteration (Appendix A). These data alone are insufficient to conclusively determine the PCB composition of the remnant deposits. Nonetheless, the remnant deposits do show alteration patterns inconsistent with the unaltered PCB composition found in the water column. As such, the remnant deposits do not appear to be a significant source of PCBs observed in the water column.

- PCBs from former outfall 004 consist of mixtures of predominantly Aroclor 1242 with a smaller component of Aroclor 1254 (Dames & Moore 1994; O'Brien & Gere 1995c). Several sediment samples collected the outfall resembled Aroclor 1248 (O'Brien & Gere 1995c). Weathering processes can alter the composition of Aroclor 1242 to resemble Aroclor 1248 (Brown and Abramowicz 1996). This is the most probable explanation for the Aroclor 1248 sediment, since Aroclor 1248 was not used at the Fort Edward facility (Brown et al. 1984). The altered composition of the sediment in the vicinity of former outfall 004 differs from the principally unaltered Aroclor 1242 PCB composition found in the water column suggesting that the former outfall 004 remnant deposit is not supplying a significant PCB load to the river. PCB composition was unaltered in the water column upstream and downstream of outfall 004 during low river flow (O'Brien & Gere 1996c). Water column contributions from former outfall 004 were not evident from the results of transect sampling conducted downstream of this area (Appendix B: Table B-4; O'Brien & Gere 1996c).

In summary, the 1996 water column PCB composition data suggest that the Bakers falls source(s), although reduced in recent years, continues to be the primary source of PCBs in the river detected at HRM 194.2.

4.8. Evaluation of potential PCB sources in the remnant deposit region of the river

Characterization of the contributions from potential sources in the this region of the river is problematic for several reasons:

- River PCB concentrations are near the method detection limit increasing uncertainty due to limitations of both sampling and analytical methods (Section 4.1, Table 1-2). Mass transport, calculated as the product of flow, water column PCB concentrations and a unit correction factor, tends to result in disproportionately large mass differences from small concentration differences, particularly at high flow. Mass transport estimates calculated using a concentration of 10.9 ng/l for concentrations less than the detection limit and 1992 through 1996 flow data results in an annual geometric mean mass transport of 0.12 kg/day with a standard deviation of 0.13 kg/day. On an annual basis, the daily baseline ranges from approximately 0.03 to 0.74 kg/day.

- The mean daily PCB mass transport estimate at the background station was less than the baseline of approximately 0.16 kg/day during 1996 using the baseline PCB concentration of 10.9 ng/l (Table 4-2).

- The best estimate of overall mass loading from the Bakers Falls source(s) using PCRDMP data is represented by mass loading at HRM 194.2 downstream of the remnant deposits (Figure 4-3). Water column PCB concentrations at sampling station HRM 196.8 appear biased low indicating that mass loading estimates using these data underestimate loading from the Bakers Falls source(s) (Section 1.3, Table 1-2). The consistent relationship between PCB mass transport at the upstream and downstream sampling locations suggests the presence of an underlying mechanism which links PCB concentrations at the sampling stations upstream and downstream of the remnant deposits to loading from the Bakers Falls source(s) (Section 1.3). These data and the consistency of PCB composition at both locations (Section 4.7) support the use of data from HRM 194.2 to estimate loading from the Bakers Falls source(s). Results of the *River Monitoring Test* confirmed that sampling bias occurs (O'Brien & Gere 1996c).

- Based on an evaluation performed by HydroQual, PCB contributions to the river from the 004 outfall bank sediments accounted for a negligible component of the observed total PCB flux through the remnant deposit area (HydroQual 1996). The existing PCRDMP sampling locations are not adequate to distinguish potential PCB loading originating from the 004 outfall bank sediments from PCB loading that originates upstream of the outfall.

In summary, the Bakers Falls source(s) continues to be the predominant PCB source in the remnant deposit region of the river and mass loading from the remnant deposits have not been identified from results of PCRDMP sampling. Results of low flow transect sampling conducted during the 1995 *River Monitoring Test* confirmed that contributions from the remnant deposits were not detected.

Overall mass transport from the Bakers Falls source(s) is represented by mass transport observed at sampling station HRM 194.2 downstream of the remnant deposits.

5. Summary/Conclusions

The major findings of the 1996 PCRDMP are consistent with conclusions of previous monitoring:

- Water column PCB concentrations in the remnant deposits region of the river have decreased significantly since 1991 in response to remedial activities performed at the source(s) in the vicinity of Bakers Falls.

- PCB levels in the section of the river between Bakers Falls and Rogers Island in 1996 decreased from levels observed in 1994 and 1995, and no sustained periods of elevated PCB loading occurred in 1996. During 1996, the median PCB concentration at HRM 194.2 was approximately 12 ng/l.

- Samples collected at HRM 196.8 are unreliable for estimating loading from the Bakers Falls source(s). The change in the hydrodynamics of the river in the vicinity of Bakers Falls following hydro facility start-up in December 1995 increased difficulties obtaining samples representative of PCB loading from the Bakers Falls Source(s). Hydrofacility operations typically divert flow from upstream of Bakers Falls and discharge it along the west shore of the river downstream of the falls changing the hydrodynamics of the river. As such, the change in hydrodynamics further complicates evaluation of samples collected at HRM 196.8 which previous monitoring had identified as unreliable for estimating mass loading from Bakers Falls Source(s). Sampling was discontinued at this station on September 10, 1996 following approval by USEPA (1996).

- The composition of PCBs in the water column is consistent with that observed at the Bakers Falls source(s) over time. Based on limited data available to characterize the remnant deposits, the water column PCB composition in the remnant deposit region of the river does not match the remnant deposits (Section 1.3). Water column PCB concentrations at the Fort Edward sampling station (HRM 194.2) were typically near the detection limit in 1996, reducing the reliability of PCB composition evaluations using congener data (Appendix A).

- PCB mass transport observed at HRM 194.2 in 1996 was attributed to the Bakers Falls source(s).

In addition, the 1996 findings include:

- Higher flows in conjunction with a significant number of less than detectable PCB concentrations in 1996 compared to 1995 complicate interpretation of overall PCB mass loading trends for the two year time period.
- Total PCB concentrations obtained by two analytical methods were comparable for samples collected in the remnant deposits region of the river.
- Water column PCBs were not detected at the background sampling station in 1996.

Based on the summary above, it would appear that the contribution of the remnant deposits to PCB levels in the river, if any, are small. The 1996 data supports the inference that sampling at HRM 194.2 provides the best available estimate of PCB loading from the Bakers Falls source(s) at this time.

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Table 1-1. *Data Quality Parameters.*

Parameter	Description
Accuracy	The ability to obtain precisely non-biased (true) value data.
Bias	The difference between an observed value and the "true" value (or known concentration) of the parameter being measured.
Precision	The level of agreement among multiple measurements of the same characteristic.
Representativeness	The degree to which the data collected accurately represents the population of interest.
Comparability	The similarity of data from different sources included within individual or multiple data sets
Completeness	The quantity of data that is successfully collected with respect to the amount intended in the experimental design.
Sensitivity	Sensitivity is defined by the method detection limit (MDL) and practical quantitation limit (PQL). The MDL is the lowest concentration of an analyte that a specified analytical procedure can reliably detect. The PQL is the estimated value that can be reliably quantified by a particular method.

Source: USEPA 1994, USEPA 1986.

Table 1-2. *Comparison of Sample Locations and Potential Limitations of Data*

Sampling Location	Sampling Status	HRM*	Significance of location	River bed geometry	Sample type	Potential limitations of data
County Route 27 Bridge, Hudson Falls	Active PCRDMP	197.0	Background location, upstream of GE Hudson Falls facility.	Water depth typically 4 to 6 feet.	Depth integrated composite sample collected with Kemmerer sampler from center of bridge.	Sampling at this location is not intended to fully characterize potential sources upstream. PCB concentrations at this background station are typically less than the detection limit. Prior to 1996, PCBs were occasionally detected from undefined source(s). Sediment was removed from a PCB-contaminated area in Queensbury in the summer of 1996.
Plunge Pool/ Boat Launch	Seasonal	196.9	Located at the base of Bakers Falls adjacent to GE Hudson Falls facility and upstream of remnant deposits.	Water depth 25 to 30 feet.	Deep water sample collected approximately 2 feet off of river bed.	A river bed seep discharging PCB DNAPL was identified in the plunge pool river bed in September 1996. Proximity of the plunge pool and boat launch sampling stations to the source(s) area limits mixing of PCBs with the water column. Samples not intended to be representative of overall water column PCB concentrations (i.e. samples not depth-integrated) in this region of the river. Intermittent flows at the base of Bakers Falls due to hydrofacility operations further complicate data obtained from these sampling stations.

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Table 1-2. *Comparison of Sample Locations and Potential Limitations of Data*

Sampling Location	Sampling Status	HRM*	Significance of location	River bed geometry	Sample type	Potential limitations of data
Canoe Carry	Inactive PCRDMP	196.8	Downstream of GE Hudson Falls facility and upstream of remnant deposits.	Water depth at low flow generally less than 2 feet. Consequently, water velocity is swift.	Surface grab sample collected from the west shore.	Difficulty obtaining a representative sample at this sampling station is located on the west shore, approximately 0.1 mile downstream of a known PCB source that is located on the east shore (Bakers Falls source[s]) resulted in discontinuation of sampling from this station in September 1996. The proximity of the sampling station to this source(s) could preclude complete mixing of the PCBs originating from the source(s) into the river cross section by the time the water reaches the sampling station[1]. Data from this sampling station were considered comparable to data collected in the center of the channel under summer low flow and highly variable loading conditions observed in 1992 and 1993[2, 3]. However, results of transect sampling during the *1995 River Monitoring Test* suggested that sampling bias occurs at this station[4]. Hudson Falls hydrofacility operations that began in December 1995 are believed to changed PCB transport dynamics in this region of the river by diverting PCBs originating from the Bakers Falls source(s) away from the west shore and this sampling station.

Table 1-2. *Comparison of Sample Locations and Potential Limitations of Data*

Sampling Location	Sampling Status	HRM*	Significance of location	River bed geometry	Sample type	Potential limitations of data
Route 197 Bridges, Fort Edward	Active PCRDMP	194.2	Downstream of remnant deposits.	Water depth typically 6 to 12 feet deep. Water flow in east and west channels approximately 35% and 65% of total flow[5]. Water velocity lower than at HRM 196.8.	Depth integrated composite sample collected with Kemmerer sampler. Aliquots collected from east and west bridges are composited.	This sampling station is considered more representative of the Bakers Falls source(s) than the former sampling station at HRM 196.8 or samples collected at the base of Bakers Falls (plunge pool and boat launch). Located approximately 2.5 miles downstream of the Bakers Falls source(s), more mixing of PCBs originating from this source(s) would occur before samples were obtained. However, sampling limitations at this location may occur due to potential PCB DNAPL migration below sampling devices[6]. PCBs recently discovered near the former Fort Edward facility outfall 004 are another potential source located between this sampling station and the sampling station at HRM 196.8[7, 8]. Evaluation of this area is continuing.
Thompson Island dam	Active	188.5	First pooled area downstream of PCB loading sources.	Water depth typically 3 to 4 feet deep.	Surface grab sample collected from the west wall of the west channel dam abutment.	Two rounds of time of travel sampling conducted between this station and the TIP transect sampling station approximately 500 feet upstream suggest that data collected at HRM 188.5 may be biased high. However, data are not conclusive due to limited data.

Notes: * Approximate Hudson River mile; HRM 0.0 is located at the Battery in New York City. Table lists sampling stations from upstream to downstream.

Source: O'Brien & Gere Engineers, Inc.

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Table 2-1. *Hudson River Water Column PCBs, 1996 Monitoring Results and Statistics (1)*

Date Collected	USGS Flow (3) Daily (cfs)	USGS Flow (3) Unit (cfs)	Temp. @ HRM 194.2 (Celsius)	HRM 197.0(2) Total PCBs (ng/l) (4)	HRM 197.0(2) TSS (mg/l)	HRM 197.0(2) Com. (5)	HRM 196.8(2) Total PCBs (ng/l) (4)	HRM 196.8(2) TSS (mg/l)	HRM 196.8(2) Com. (5)	HRM 194.2(2) Total PCBs (ng/l) (4)	HRM 194.2(2) TSS (mg/l)	HRM 194.2(2) Com. (5)
19-Jan-96	5,080	5,200	3	<11 (<11)	1.5 (1.8)	-	<11	2.1	-	23	2.1	P
24-Jan-96	8,550	10,700	2	<11	2.2	UJ	24	20	P,J	29	5.0	P,J
31-Jan-96	8,660	11,600	0	<11	1.8	-	<11 (<11)	1.3 (2.2)	-	11	1.8	-
07-Feb-96	7,790	8,600	0	<11	<1.0	-	<11	<1.0	-	11	<1.0	P
14-Feb-96	6,000	5,100	0	<11	<1.0	-	<11	<1.0	-	<11 (<11)	<1.0 (<1.0)	-
21-Feb-96	6,310	6,400	2	<11 (<11)	<1.0 (<1.0)	-	<11	<1.0	-	<11	<1.0	UJ
28-Feb-96	5,980	7,100	2	<11	1.9	-	<11 (<11)	2.2 (1.9)	-	<11	2.4	-
06-Mar-96	6,160	5,900	1	<11	<1.0	-	<11	<1.0	-	<11 (<11)	<1.0 (<1.0)	-
13-Mar-96	5,590	6,200	2	<11 (<11)	1.4 (1.6)	-	<11	1.4	-	<11	2.5	-
21-Mar-96	6,330	6,600	3	<11	1.3	UJ	<11 (<11)	1.4 (1.2)	UJ	<11	1.6	UJ
28-Mar-96	5,990	6,700	5	<11	1.3	UJ	<11	1.8	UJ	11 (12)	2.2 (2.1)	UJ
03-Apr-96	6,020	7,400	7	<11	1.1	-	<11	<1.0	-	<11	1.4	-
10-Apr-96	4,220	5,600	6	<11 (<11)	1.2 (1.1)	-	<11	1.1	UJ	13	<1.0	P,J
17-Apr-96	18,700	19,300	6	<11	9.6	-	<11 (<11)	11.0 (12.0)	-	13	8.7	P
24-Apr-96	23,400	24,200	9	<11	7.0	-	<11	12.0	-	17 (18)	7.2 (7.0)	P
01-May-96	20,100	21,600	10	<11	2.3	-	<11	3.9	-	14	3.5	P
08-May-96	13,500	15,600	11	<11 (<11)	1.3 (1.7)	-	<11	1.9	-	<11	1.6	-
15-May-96	19,900	-	12	<11	2.0	-	<11 (<11)	2.8 (2.9)	-	17	2.4	P
22-May-96	13,300	-	16	<11	1.2	-	<11	2.0	-	11 (<11)	2.0 (1.9)	-
29-May-96	7,000e	-	15	<11	1.5	-	<11	1.6	-	14	2.3	P
05-Jun-96	4,100e	-	20	<11 (<11)	2.7 (2.3)	-	<11	2.9	-	19	3.4	P
12-Jun-96	7,850	9,000	21	<11	4.1	-	<11 (<11)	4.0 (3.9)	-	17	4.2	P
19-Jun-96	5,930	5,600	22	<11	1.9	-	<11	2.1	-	21 (20)	2.0 (1.9)	P
26-Jun-96	4,470	3,900	21	<11	1.7	-	11	2.7	-	31	1.6	P
01-Jul-96	3,190	2,500	23	<11 (<11)	1.9 (1.8)	UJ	<11	2.4	UJ	15	2.1	P,J
10-Jul-96	2,910	2,700	23	<11	<1.0	UJ	<11	1.0	UJ	12	<1.0	P,J
17-Jul-96	5,030	3,900	24	<11	1.4	UJ	<11 (321) {<11}	3.3 (2.3)	J	20	2.8	P,J
24-Jul-96	3,770	4,700	22	<11	2.4	-	<11	2.7	-	17 (21)	3.2 (2.1)	P
31-Jul-96	3,400	3,000	22	<11 (<11)	1.6 (1.6)	-	<11	1.8	-	56	1.8	-
31-Jul-96	-	-	-	-	-	-	-	-	-	[<11]	-	P

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Table 2-1. *Hudson River Water Column PCBs, 1996 Monitoring Results and Statistics (1)*

Date Collected	USGS Flow (3) Daily (cfs)	Unit (cfs)	Temp. @ HRM 194.2 (Celsius)	HRM 197.0(2) Total PCBs (ng/l) (4)	TSS (mg/l)	Com. (5)	HRM 196.8(2) Total PCBs (ng/l) (4)	TSS (mg/l)	Com. (5)	HRM 194.2(2) Total PCBs (ng/l) (4)	TSS (mg/l)	Com. (5)
02-Aug-96	3,580	3,200	NA	[<11]	-	-	-	-	-	[<11]	-	-
05-Aug-96	3,590	3,700	NA	[<11]	-	-	-	-	-	[<11]	-	P
07-Aug-96	3,600	4,700	24	<11	1.5	-	341	2.4	-	25	1.8	P
07-Aug-96	-	-	-	[<11]	-	-	-	-	-	[<11]	-	P
09-Aug-96	3,450	3,400	24	[<11]	-	-	-	-	-	[80]	-	-
13-Aug-96	2,810	2,400	23	[<11]	-	-	-	-	-	[<11]	-	-
14-Aug-96	3,450	3,400	24	<11	1.1	-	<11	1.5	-	26 (24)	1.4 (1.1)	P
14-Aug-96	-	-	-	-	-	-	-	-	-	[<11]	-	P
20-Aug-96	3,290	3,100	24	<11 (<11)	1.2 (1.6)	-	<11	1.2	-	19	1.4	P
20-Aug-96	-	-	24	[<11]	-	-	-	-	-	[<11]	-	P
22-Aug-96	3,230	2,900	24	[<11]	-	-	-	-	-	[<11]	-	P
28-Aug-96	3,280	4,000	24	<11	1.3	-	<11 (<11)	2.1 (2.1)	-	14	1.9	P
04-Sep-96	3,400	4,000	24	<11	1.4	-	13	2.0	P	23	2.2	P
04-Sep-96	-	3,900	-	[<11]	1.3	(B)	-	-	-	[15]	1.5	P,(B)
04-Sep-96	-	4,700	-	[<11]	<1.1	(D)	-	-	-	[42 (36)]	2.5	P,(D)
04-Sep-96	-	4,000	-	[<11]	-	(A)	-	-	-	[23]	-	P,(A)
06-Sep-96	3,260	2,000	24	[<11]	-	-	-	-	-	[<11]	-	-
10-Sep-96	3,860	3,500	23	<11 (<11)	1.6 (1.7)	-	<11	2.3	-	17	2.0	P
10-Sep-96	-	-	-	[<11]	-	-	Sampling at this station discontinued			[<11]	-	P
13-Sep-96	2,180	2,800	22	[<11]	-	-	-	-	-	[<11]	-	-
18-Sep-96	3,380	4,700	19	<11	3.1	-	-	-	-	<11 (<11)	3.3 (2.8)	-
24-Sep-96	3,100	2,200	17	<11	1.7	-	-	-	-	-	-	-
25-Sep-96	3,510	2,800	17	<11	1.2	-	-	-	-	<11 (<11)	1.4 (<1.0)	-
02-Oct-96	3,560	-	17	<11	<1.0	-	-	-	-	<11	1.2	-
09-Oct-96	2,980	1,700	NA	<11 (<11)	<1.0 (<1.0)	-	-	-	-	<11	<1.0	-
16-Oct-96	3,260	2,200	NA	<11	1.9	-	-	-	-	<11	2.6	-
23-Oct-96	4,120	4,300	11	<11	1.5	-	-	-	-	13 (13)	1.4 (1.7)	P
29-Oct-96	3,000	2,400	11	<11	2.0	-	-	-	-	<11	1.8	-
							-	-	-			
06-Nov-96	3,160	1,300	9	<11	1.8	-	-	-	-	<11 (<11)	2.2 (2.1)	-
14-Nov-96	6,590	7,700	4	<11	2.0	-	-	-	-	14 (14)	2.7 (2.5)	P
20-Nov-96	7,580	7,600	5	<11	1.9	-	-	-	-	12	2.5	P
27-Nov-96	6,610	6,900	2	<11	1.0	-	-	-	-	<11 (<11)	<1.0 (1.0)	-

Table 2-1. *Hudson River Water Column PCBs, 1996 Monitoring Results and Statistics (1)*

Date Collected	USGS Flow (3) Daily (cfs)	USGS Flow (3) Unit (cfs)	Temp. @ HRM 194.2 (Celsius)	HRM 197.0(2) Total PCBs (ng/l) (4)	HRM 197.0(2) TSS (mg/l)	HRM 197.0(2) Com. (5)	HRM 196.8(2) Total PCBs (ng/l) (4)	HRM 196.8(2) TSS (mg/l)	HRM 196.8(2) Com. (5)	HRM 194.2(2) Total PCBs (ng/l) (4)		HRM 194.2(2) TSS (mg/l)	HRM 194.2(2) Com. (5)
04-Dec-96	14,200	14,200	6	<11	4.4	-	-	-	-	14 (<11)		4.9 (4.6)	P
11-Dec-96	5,170	5,000	4	<11	2.9	-	-	-	-	<11		2.0	-
18-Dec-96	10,100	9,900	5	<11	1.4	-	-	-	-	<11 (<11)		1.8 (1.6)	-
23-Dec-96	9,510	9,300	1	<11	1.5	-	-	-	-	<11		1.9	-
30-Dec-96	7,290	7,500	1	<11	1.1	-	-	-	-	<11 (<11)		1.3 (1.3)	-
Statistical Summary (6)													
No. Samples	52	47	50	52	52	-	35	35	-	51	[15]	51	-
Arith. Mean	6,900	6,800	12	<11	1.9	-	21	3.0	-	15	-	2.2	-
Geom. Mean	-	-	-	<11	1.5	-	12	1.9	-	14	-	1.8	-
Median	5,800	5,600	11	<11	1.5	-	<11	2.0	-	12	-	2.0	-
Minimum	2,900	1,300	0	<11	<1.0	-	<11	<1.0	-	<11	[<11]	<1.0	-
Maximum	23,400	24,200	24	<11	9.6	-	341	20	-	56	[80]	8.7	-
Std. Dev.	4,800	5,000	9	0	1.5	-	56	3.8	-	8	-	1.6	-

Notes:

(1) Samples analyzed for PCB by capillary column using NEA Method 608CAP except as noted. Samples analyzed by USEPA Method 8081 are indicated by brackets [ ]. PCB samples analyzed by NEA Method 608CAP have been corrected for analytical bias.

(2) HRM = Approximate Hudson River mile; HRM 0.0 is located at the Battery in New York City. Samples from location HRM 194.2 are a composite of west and east channels.

(3) River flows are presented as mean daily discharge and instantaneous unit discharge for each round of sampling. Daily flow data are final from the USGS Fort Edward gaging station through September, and prelimary October through December (as of 01-16-98). Unit discharge values are preliminary (as of 01-10-97). Instantaneous flows correspond to flows recorded by the USGS during sampling at HRM 194.2. The qualifier "e" indicates that the daily average value was estimated by USGS due to problems with the Fort Edward gage readings

(4) Parentheses ( ) indicate results of duplicate analysis. Brackets [ ] indicate results of Method 8081 analysis. Braces { } indicate results of archive analysis.

(5) "Com." = Comments include clarifications of sampling and analytical methods, and PCB qualifiers:
P = Practical quantitation limit (PQL) note for PCB values between <11 and 44 ng/l.
NA = Not analyzed
J = Sample results approximate due to excursions from data validation criteria.
UJ = Detection limit approximate due to excursions from data validation criteria.
Arch = Archived sample collected on 07/17/96 was extracted outside of holding time (08/06/96) and analyzed to verify results of original and duplicate analyses.
(B), (D), and (A) = Before, During, and After. Samples collected on September 4 before, during, and after flow was observed spilling over Bakers Falls dam. During routine hydrofacility maintenance operations, river flow is diverted from the hydrofacility and spills over the dam.

(6) Duplicate and replicate data were not included in statistical calculations. Statistics calculated for results of Method 8081 analyses are presented in brackets [ ], and are not included with statistics calculated for Method NEA608CAP. Means of total PCB concentrations were calculated using a value of 10.9 ng/l for results less than the detection limit (11 ng/l). Means of TSS concentrations were calculated using a value of one-half the reported detection limit. For Method 8081 mean calculations, data collected within the same week (Sunday to Saturday) were averaged together for one weekly value. These weekly values were then averaged together for the mean values presented in the statistical summary. Statistics for flow and temperature were calculated from data collected on routine PCRDMP sampling dates corresponding to NEA608CAP PCB analytical data.

Source: O'Brien & Gere Engineers, Inc.

321690

Table 2-2. *Field Sampling PCB Quality Assurance/Quality Control*

QA/QC Sample Type	Purpose	Evaluation Procedure	Criteria	1996 PCRDMP Results [1] Quan	mean
Matrix spike	Evaluate accuracy of PCB quantification in the field media.	Duplicate samples are spiked with a known quantity of analyte by the laboratory. The percent recovery is calculated.	Spike recoveries are expected to be in the 70 to 130 recovery range.	51	99.1%
Duplicate	Evaluate the precision of analyses.	A relative percent difference (RPD) is calculated as:	The RPD is expected to be less than 35%.	21	11%
		RPD = (C1 - C2) / ([C1+C2]) / 2) where C1 is the original sample and C2 is the duplicate sample.	RPD is not calculated (NC) for samples and duplicates with total PCB <11 ng/l.	30	NC
Equipment blank	Evaluate the effectiveness of equipment decontamination procedures.	Detection of PCBs in the equipment blank requires evaluation of source and correction of contamination problem.	Detection of PCBs in the equipment blank results in qualification of the associated field samples. Field sample concentrations <5 times the concentration of the equipment blank are qualified with a "U." Field sample concentrations >5 times the detection limit are qualified with a "J."	51	<11 ng/l

(1) Data validation results.
Source: O'Brien & Gere Engineers, Inc.

321691

Table 3-1. *Hudson River Water Column PCB Homolog Distributions. (1)*

Upstream of Remnant Deposits - HRM 196.8 (2)									
Date Collected	Total PCB (ng/l)	Comments (3)	Homolog Distribution (weight percent)						
			Mono	Di	Tri	Tetra	Penta	Hexa	Hepta
19-Jan-96	<11	-	-	-	-	-	-	-	-
24-Jan-96	24	P,J	0.0	5.4	31.6	46.8	13.6	2.6	0.0
31-Jan-96	<11	-	-	-	-	-	-	-	-
31-Jan-96	<11	BD	-	-	-	-	-	-	-
07-Feb-96	<11	-	-	-	-	-	-	-	-
14-Feb-96	<11	-	-	-	-	-	-	-	-
21-Feb-96	<11	-	-	-	-	-	-	-	-
28-Feb-96	<11	-	-	-	-	-	-	-	-
28-Feb-96	<11	BD	-	-	-	-	-	-	-
06-Mar-96	<11	-	-	-	-	-	-	-	-
13-Mar-96	<11	-	-	-	-	-	-	-	-
21-Mar-96	<11	UJ	-	-	-	-	-	-	-
21-Mar-96	<11	BD,UJ	-	-	-	-	-	-	-
28-Mar-96	<11	UJ	-	-	-	-	-	-	-
03-Apr-96	<11	-	-	-	-	-	-	-	-
10-Apr-96	<11	UJ	-	-	-	-	-	-	-
17-Apr-96	<11	-	-	-	-	-	-	-	-
17-Apr-96	<11	BD	-	-	-	-	-	-	-
24-Apr-96	<11	-	-	-	-	-	-	-	-
01-May-96	<11	-	-	-	-	-	-	-	-
08-May-96	<11	-	-	-	-	-	-	-	-
15-May-96	<11	-	-	-	-	-	-	-	-
15-May-96	<11	BD	-	-	-	-	-	-	-
22-May-96	<11	-	-	-	-	-	-	-	-
29-May-96	<11	-	-	-	-	-	-	-	-
05-Jun-96	<11	-	-	-	-	-	-	-	-
12-Jun-96	<11	-	-	-	-	-	-	-	-
12-Jun-96	<11	BD	-	-	-	-	-	-	-
19-Jun-96	<11	-	-	-	-	-	-	-	-
26-Jun-96	11	P	0.0	21.7	41.0	21.1	12.0	4.1	-
01-Jul-96	<11	UJ	-	-	-	-	-	-	-
10-Jul-96	<11	UJ	-	-	-	-	-	-	-
17-Jul-96	<11	J	-	-	-	-	-	-	-
17-Jul-96	321	J,BD	1.1	6.8	46.6	37.6	6.9	1.0	0.0
17-Jul-96	<11	R,BD Archive	-	-	-	-	-	-	-
24-Jul-96	<11	-	-	-	-	-	-	-	-
31-Jul-96	<11	-	-	-	-	-	-	-	-
07-Aug-96	341	-	0.0	9.2	50.0	32.8	6.9	1.2	0.0
14-Aug-96	<11	-	-	-	-	-	-	-	-
20-Aug-96	<11	-	-	-	-	-	-	-	-
28-Aug-96	<11	-	-	-	-	-	-	-	-
28-Aug-96	<11	BD	-	-	-	-	-	-	-
04-Sep-96	13	P	0.0	27.9	33.0	20.6	14.0	4.5	0.0
10-Sep-96	<11	-	-	-	-	-	-	-	-

Notes:

(1) Samples analyzed by capillary column using NEA Method 608CAP. PCB samples analyzed by NEA Method 608CAP have been corrected for analytical bias.

(2) HRM = Approximate Hudson River mile; HRM 0.0 is located at the Battery in New York City.

(3) Comments include clarifications of sampling and analytical methods and PCB qualifiers:

P = Practical quantitation limit (PQL) note for PCB values between <11 and 44 ng/l.

J = Approximated data.

UJ = Approximated detection limit.

Archive = Archived samples collected on 07/17/96 were extracted outside of holding time (R; 08/06/96) and analyzed to verify results of original and duplicate analysis.

BD = Blind Duplicate - a field PCB duplicate sample submitted to the laboratory without identification of field location.

Homolog groups octa-, nona- and deca-chlorinated biphenyls were not detected.

Source: O'Brien & Gere Engineers, Inc.

321692

Table 3-1. ***Hudson River Water Column PCB Homolog Distributions. (1)***

Downstream of Remnant Deposits - HRM 194.2 (2)										
Date	Total PCB	Comments	Homolog Distribution (weight percent)							
Collected	(ng/l)	(3)	Mono	Di	Tri	Tetra	Penta	Hexa	Hepta	
19-Jan-96	23	P	0.0	16.3	32.3	31.4	16.8	3.2	0.0	
24-Jan-96	29	P,J	0.0	2.9	29.7	38.9	21.8	6.7	0.0	
31-Jan-96	11	P	0.0	18.6	29.3	25.3	20.5	6.2	0.0	
07-Feb-96	11	P	0.0	8.6	30.4	37.1	19.1	4.8	0.0	
14-Feb-96	<11	-	-	-	-	-	-	-	-	
14-Feb-96	<11	BD	-	-	-	-	-	-	-	
21-Feb-96	<11	UJ	-	-	-	-	-	-	-	
28-Feb-96	<11	-	-	-	-	-	-	-	-	
06-Mar-96	<11	-	-	-	-	-	-	-	-	
06-Mar-96	<11	BD	-	-	-	-	-	-	-	
13-Mar-96	<11	-	-	-	-	-	-	-	-	
21-Mar-96	<11	UJ	-	-	-	-	-	-	-	
28-Mar-96	11	P,UJ	0.0	25.9	29.6	23.7	16.2	4.6	0.0	
28-Mar-96	12	BD,P,UJ	0.0	22.9	27.3	25.9	19.1	4.9	0.0	
03-Apr-96	<11	-	-	-	-	-	-	-	-	
10-Apr-96	13	P,J	0.0	5.8	24.7	44.8	21.4	3.4	0.0	
17-Apr-96	13	P	0.0	5.6	41.8	31.7	17.4	3.5	0.0	
24-Apr-96	17	P	0.0	4.9	40.9	38.3	13.6	2.3	0.0	
24-Apr-96	18	BD,P	0.0	5.0	40.4	38.2	13.8	2.5	0.0	
01-May-96	14	P	0.0	19.4	35.3	28.8	14.2	2.4	0.0	
08-May-96	<11	-	-	-	-	-	-	-	-	
15-May-96	17	P	0.0	13.3	40.4	31.3	12.2	2.8	0.0	
22-May-96	11	P	0.0	18.8	35.1	28.5	13.8	3.8	0.0	
22-May-96	<11	BD	-	-	-	-	-	-	-	
29-May-96	14	P	0.0	15.0	32.9	37.3	11.7	3.1	0.0	
05-Jun-96	19	P	0.0	17.7	30.4	32.1	16.2	3.6	0.0	
12-Jun-96	17	P	0.0	18.7	32.1	28.9	17.3	3.0	0.0	
19-Jun-96	21	P	0.0	22.2	39.9	24.0	11.8	2.1	0.0	
19-Jun-96	20	BD,P	0.0	22.6	41.7	23.8	9.8	2.2	0.0	
26-Jun-96	31	P	0.0	12.8	47.0	28.3	10.0	1.8	0.0	
01-Jul-96	15	P,J	0.0	13.9	36.0	34.1	13.2	2.8	0.0	
10-Jul-96	12	P,J	0.0	4.0	37.6	40.8	14.6	3.0	0.0	
17-Jul-96	20	P	0.0	17.6	35.5	31.8	13.0	2.0	0.0	
24-Jul-96	17	P	0.0	20.5	29.4	36.1	11.6	2.5	0.0	
24-Jul-96	21	BD,P	0.0	17.1	27.5	39.5	13.1	2.8	0.0	
31-Jul-96	56	-	0.0	3.0	44.0	41.0	10.2	1.9	0.0	
07-Aug-96	25	P	0.0	24.1	33.4	24.5	13.7	4.3	0.0	
14-Aug-96	26	P	0.0	19.9	39.1	27.8	10.4	2.8	0.0	
14-Aug-96	24	BD, P	0.0	19.9	41.0	28.2	9.7	1.3	0.0	
20-Aug-96	19	P	0.0	17.2	37.5	30.5	12.3	2.5	0.0	
28-Aug-96	14	P	0.0	21.8	32.3	28.7	13.8	3.4	0.0	
04-Sep-96	23	P	0.0	17.6	39.4	31.3	8.9	2.9	0.0	
10-Sep-96	17	P	0.0	12.2	39.0	35.7	9.5	3.6	0.0	
18-Sep-96	<11	-	-	-	-	-	-	-	-	
18-Sep-96	<11	BD	-	-	-	-	-	-	-	
25-Sep-96	<11	-	-	-	-	-	-	-	-	
25-Sep-96	<11	BD	-	-	-	-	-	-	-	
02-Oct-96	<11	-	-	-	-	-	-	-	-	
09-Oct-96	<11	-	-	-	-	-	-	-	-	
16-Oct-96	<11	-	-	-	-	-	-	-	-	
23-Oct-96	13	P	0.0	27.5	28.0	28.0	12.3	4.1	0.0	
23-Oct-96	13	BD,P	0.0	32.9	30.1	18.3	15.2	3.5	0.0	
29-Oct-96	<11	-	-	-	-	-	-	-	-	
06-Nov-96	<11	-	-	-	-	-	-	-	-	
06-Nov-96	<11	BD	-	-	-	-	-	-	-	
14-Nov-96	14	P	0.0	8.8	39.2	32.0	16.9	3.1	0.0	
14-Nov-96	14	BD,P	0.0	7.8	37.9	32.3	18.1	4.0	0.0	
20-Nov-96	12	P	0.0	20.5	30.2	22.9	23.4	3.0	0.0	
27-Nov-96	<11	-	-	-	-	-	-	-	-	
27-Nov-96	<11	BD	-	-	-	-	-	-	-	

Table 3-1. ***Hudson River Water Column PCB Homolog Distributions. (1)***

Downstream of Remnant Deposits - HRM 194.2 (2)									
Date	Total PCB	Comments	Homolog Distribution (weight percent)						
Collected	(ng/l)	(3)	Mono	Di	Tri	Tetra	Penta	Hexa	Hepta
04-Dec-96	14	P	0.0	4.6	41.0	38.7	13.8	2.0	0.0
04-Dec-96	<11	BD	-	-	-	-	-	-	-
11-Dec-96	<11	-	-	-	-	-	-	-	-
18-Dec-96	<11	-	-	-	-	-	-	-	-
18-Dec-96	<11	BD	-	-	-	-	-	-	-
23-Dec-96	<11	-	-	-	-	-	-	-	-
30-Dec-96	<11	-	-	-	-	-	-	-	-
30-Dec-96	<11	BD	-	-	-	-	-	-	-

Notes:
(1) Samples analyzed by capillary column using NEA Method 608CAP. PCB samples analyzed by NEA Method 608CAP have been corrected for analytical bias.
(2) HRM = Approximate Hudson River mile; HRM 0.0 is located at the Battery in New York City. Samples from location HRM 194.2 are a composite of west and east channels.
(3) Comments include clarifications of sampling and analytical methods and PCB qualifiers:
P = Practical quantitation limit (PQL) note for PCB values between <11 and 44 ng/l.
J = Approximated data.
UJ = Approximated detection limit.
BD = Blind Duplicate - a field PCB duplicate sample submitted to the laboratory without identification of field location.
Homolog groups octa-, nona- and deca-chlorinated biphenyls were not detected.

Source: O'Brien & Gere Engineers, Inc.

Table 4-1. *Statistical summary of water column total PCB data 1992 through 1996.*

		Total PCB Concentration (ng/l)		
Sampling period	Location:	HRM 197.0	HRM 196.8	HRM 194.2
1996 (Jan - Dec)	Minimum	<11	<11	<11
	Maximum	<11	341	56
	Geometric mean	<11	12	14
	Arithmetic mean	<11	21	15
	Median	<11	<11	12
	Standard Deviation	0	56	8
	Number of samples	51	35	51
1995 (Jan - Dec)	Minimum	<11	<11	<11
	Maximum	387	282	367
	Geometric mean	18	24	37
	Arithmetic mean	34	35	51
	Median	12	21	37
	Standard Deviation	71	49	64
	Number of samples	32	33	33
1994 (Jan - Dec)	Minimum	<11	<11	17
	Maximum	139	196	267
	Geometric mean	13	20	36
	Arithmetic mean	17	27	47
	Median	<11	17	30
	Standard Deviation	23	34	52
	Number of samples	35	32	33
1993 (Jan - Dec)	Minimum	<11	<11	<11
	Maximum	27	259	1134
	Geometric mean	12	22	39
	Arithmetic mean	12	31	70
	Median	<11	21	33
	Standard Deviation	3	39	160
	Number of samples	51	48	50
1992 (Mar - Dec)	Minimum	<11	<11	28
	Maximum	45	752	969
	Geometric mean	12	73	148
	Arithmetic mean	12	149	248
	Median	<11	64	129
	Standard Deviation	6	173	260
	Number of samples	37	38	36
Summary March 1992 through December 1996				
	Minimum	<11	<11	<11
	Maximum	387	752	1134
	Geometric mean	11	30	55
	Arithmetic mean	15	52	86
	Median	2	25	48
	Standard Deviation	20	70	109
	Number of samples	206	186	203

Table 4-1. ***Statistical summary of water column total PCB data 1992 through 1996.***

Notes:

Statistical Calculations

Statistics were calculated using total PCB results from Method NEA608CAP analysis. Data have been adjusted for analytical bias.

Statistics do not include duplicate sample results.

Statistics were calculated using a value of 10.9 ng/l for concentrations less than the method detection limit.

Samples qualified with "R" using data validation criteria were not included in statistics.

Sampling and Analytical Method Clarifications

Sampling at HRM 196.8 was discontinued as of September 10, 1996.

Sampling at HRM 194.2 in 1994 included two rounds of grab sampling from the east shore because ice cover on the river prevented routine sampling from the Route 197 bridges. Statistics exclude samples collected from shore at this location due to concerns that concentrations may not be directly comparable with results of depth integrated composites usually collected during sampling at these bridges.

Maximum total PCB concentration detected at HRM 194.2 in 1994 was a blind duplicate, reported above. The concentration of the parent sample was 251 ng/l. This blind duplicate data is not included in the remaining 1994 statistics.

Results of the 1992 Shore Sample Verification Study conducted at HRM 196.8 are included as a single average value for the dates sampled.

Sampling at HRM 194.2 in 1992 included separate sampling of east and west channels for several rounds. The statistics include only the results of west channel sampling for these rounds.

Source: O'Brien & Gere Engineers, Inc.

Table 4-2. *Statistical Summary of water column PCB mass transport PCB data 1992 through 1996.*

Sampling Period	Location:	PCB Mass Transport (kg/day)			
		Baseline	HRM 197.0	HRM 196.8	HRM 194.2
1996 (January - December)					
	Minimum	0.08	0.08	0.08 *	0.08
	Maximum	0.62	0.62	3.00 *	0.98
	Geometric mean	0.16	0.16	0.19 *	0.20
	Arithmetic mean	0.19	0.19	0.29 *	0.25
	Median	0.16	0.16	0.16 *	0.19
	Standard deviation	0.09	0.09	0.50 *	0.19
	Number of samples	51	51	35 *	51
1995 (January - December)					
	Minimum	0.03	0.03	0.09	0.10
	Maximum	0.34	4.51	1.26	4.28
	Geometric mean	0.09	0.15	0.19	0.30
	Arithmetic mean	0.10	0.39	0.24	0.54
	Median	0.08	0.12	0.16	0.25
	Standard deviation	0.07	0.88	0.23	0.90
	Number of samples	33	32	33	33
1994 (January - December)					
	Minimum	0.07	0.07	0.08	0.16
	Maximum	0.57	1.84	1.85	5.18
	Geometric mean	0.13	0.17	0.25	0.45
	Arithmetic mean	0.16	0.25	0.36	0.51
	Median	0.11	0.13	0.22	0.34
	Standard deviation	0.11	0.34	0.41	0.91
	Number of samples	35	35	32	33
1993 (January - December)					
	Minimum	0.06	0.06	0.06	0.10
	Maximum	0.74	1.37	7.41	19.47
	Geometric mean	0.13	0.14	0.26	0.45
	Arithmetic mean	0.18	0.21	0.69	1.61
	Median	0.10	0.10	0.16	0.28
	Standard deviation	0.19	0.26	1.36	3.89
	Number of samples	52	51	48	50
1992 (January - December)					
	Minimum	0.06	0.06	0.14 *	0.26
	Maximum	0.34	1.19	5.61 *	8.65
	Geometric mean	0.11	0.12	0.76 *	1.20
	Arithmetic mean	0.12	0.15	1.22 *	1.82
	Median	0.10	0.10	0.63 *	1.30
	Standard deviation	0.06	0.17	1.22 *	1.81
	Number of samples	50	48	38 *	47
Summary January 1992 through December 1996					
	Minimum	0.03	0.03	0.06 *	0.08
	Maximum	0.74	4.51	7.41 *	19.47
	Geometric mean	0.12	0.15	0.33 *	0.52
	Arithmetic mean	0.15	0.24	0.56 *	0.95
	Median	0.11	0.12	0.27 *	0.47
	Standard deviation	0.10	0.35	0.74 *	1.54
	Number of samples	221	217	186 *	214

Table 4-2. ***Statistical Summary of water column PCB mass transport PCB data 1992 through 1996.***

Notes:

Mass transport is calculated as (PCB concentration (ng/l) multiplied by daily average flow (cfs) multiplied by a conversion factor). PCB results were obtained by analytical method NEA608CAP, corrected for analytical bias. For PCB concentrations less than the method detection limit of 11 ng/l, a value less than the detection limit (10.9 ng/l) was used to calculate mass transport.

Daily average flow data were obtained for the Fort Edward gaging station from the USGS. Flows through September 1996 are final published values. Flows from October through December 1996 are preliminary.

Statistics were generated for each sampling date and do not include weighting to adjust for differences in sampling frequency or time intervals between sampling dates. Statistical results are based on the following assumptions:

- Samples qualified with "R" using data validation criteria are not included in the statistics.
- Statistics exclude two rounds of grab samples from the east shore at HRM 194.2 collected in 1994. Ice cover on the river prevented routine sampling from the Route 197 bridges. Results of shoreline grab samples may not be directly comparable with results of depth-integrated composite samples usually collected during sampling at these bridges.
- Sampling at HRM 194.2 in 1992 included separate sampling of west and east channels for several rounds. The statistics include only the results of west channel sampling for these rounds.
- Results of sample verification study conducted at HRM 196.8 in 1992 are included as a single average value for the dates sampled.
- Results of 1992 High Flow Monitoring are not included in these statistics.

Baseline represents the mass transport statistics for the given year calculated by substituting a value less than the detection limit (10.9 ng/l) for all the sample dates in a given year.

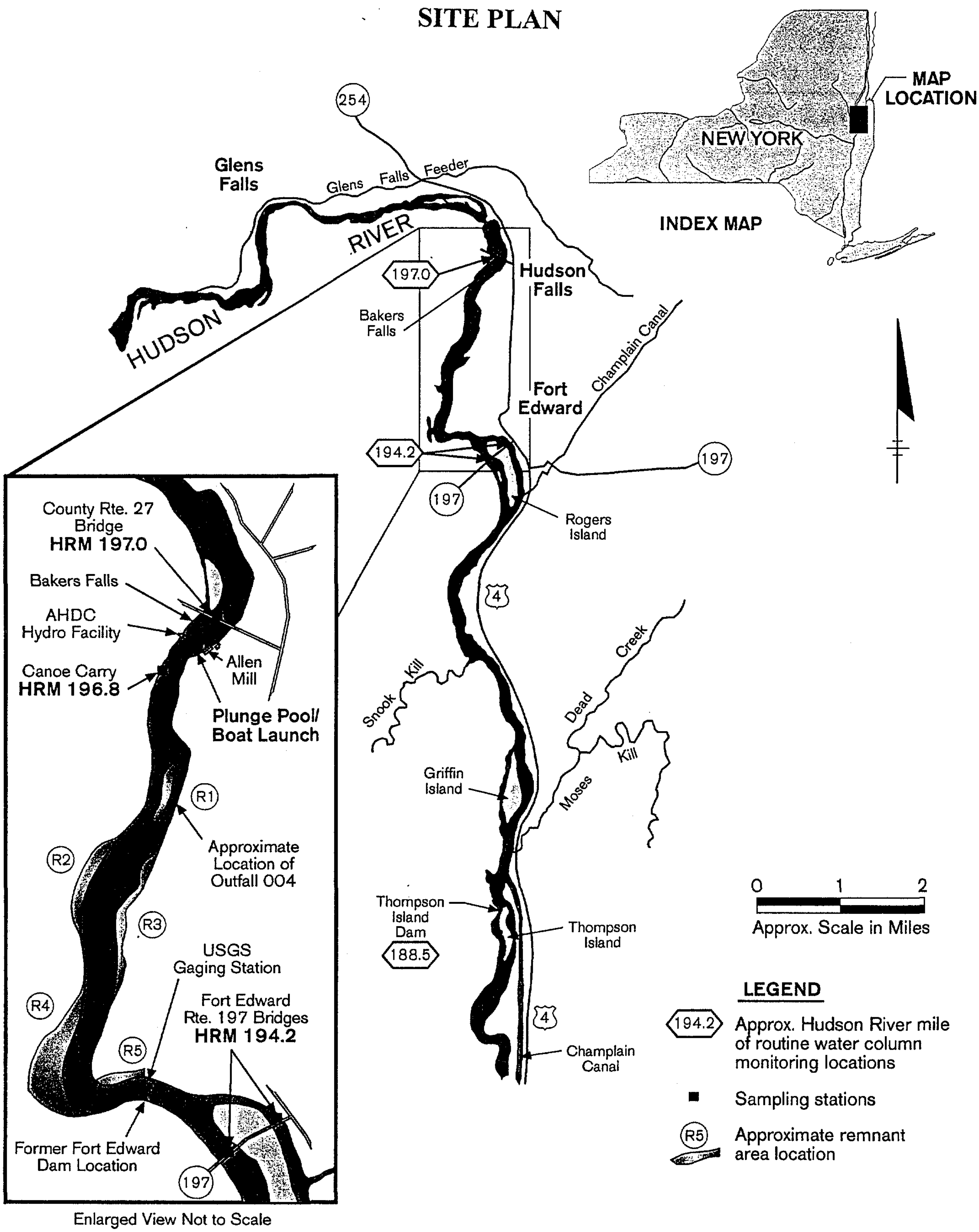
* - indicates the statistics for HRM 196.8 are based on smaller data sets than the statistics calculated for the other sampling stations. In 1992, statistics for HRM 196.8 are based on data collected from March to December. In 1996, statistics for HRM 196.8 are based on data collected from January to September.

Source: O'Brien & Gere Engineers, Inc.

FIGURE 1-1

GENERAL ELECTRIC COMPANY-HUDSON RIVER PROJECT
POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM

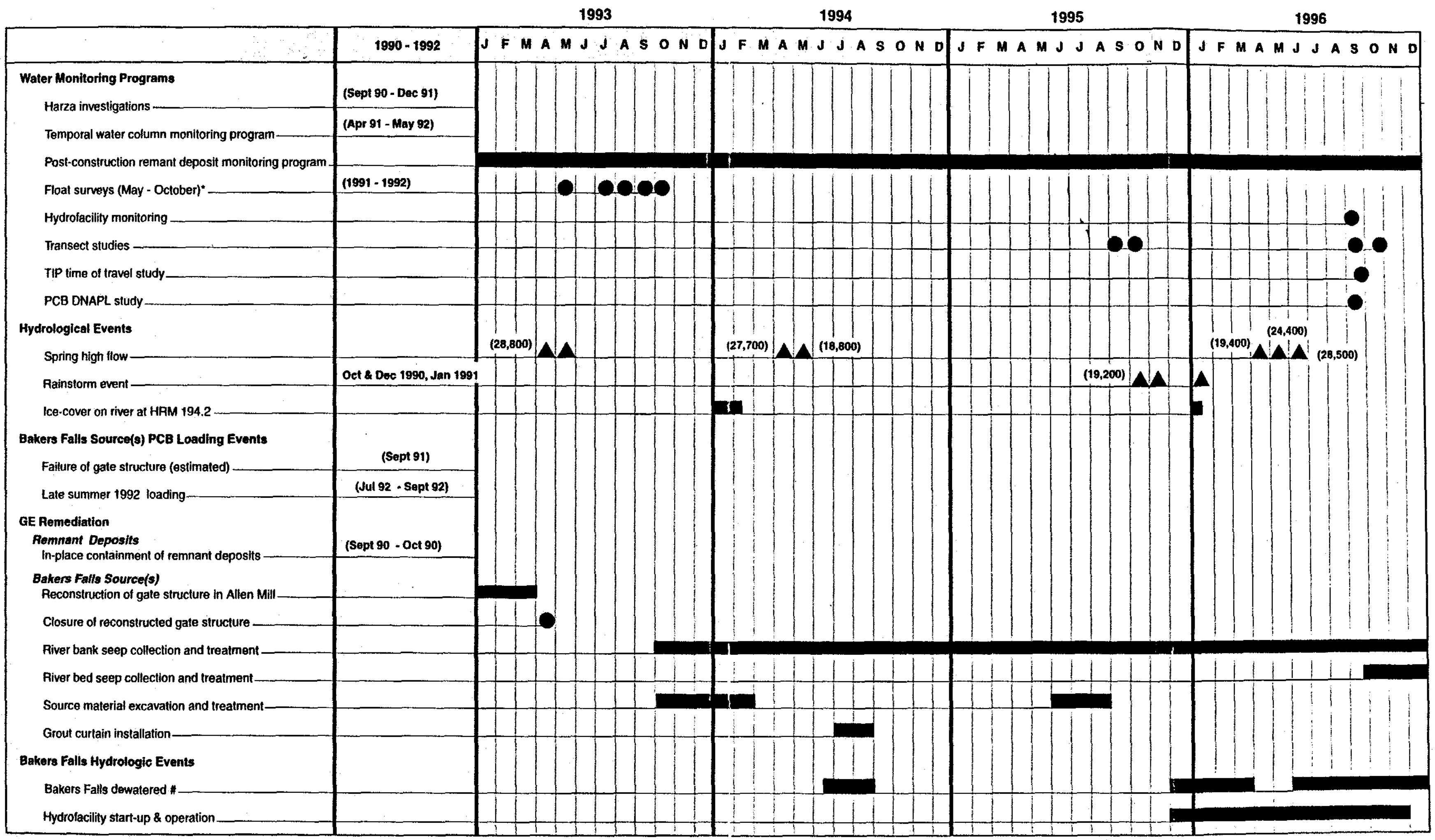
SITE PLAN



REVISED 02/24/97 612.225-001

Figure 1-2
General Electric Company
1996 Post-Construction Remnant Deposit Monitoring Program

HUDSON RIVER EVENTS TIMELINE



Note:

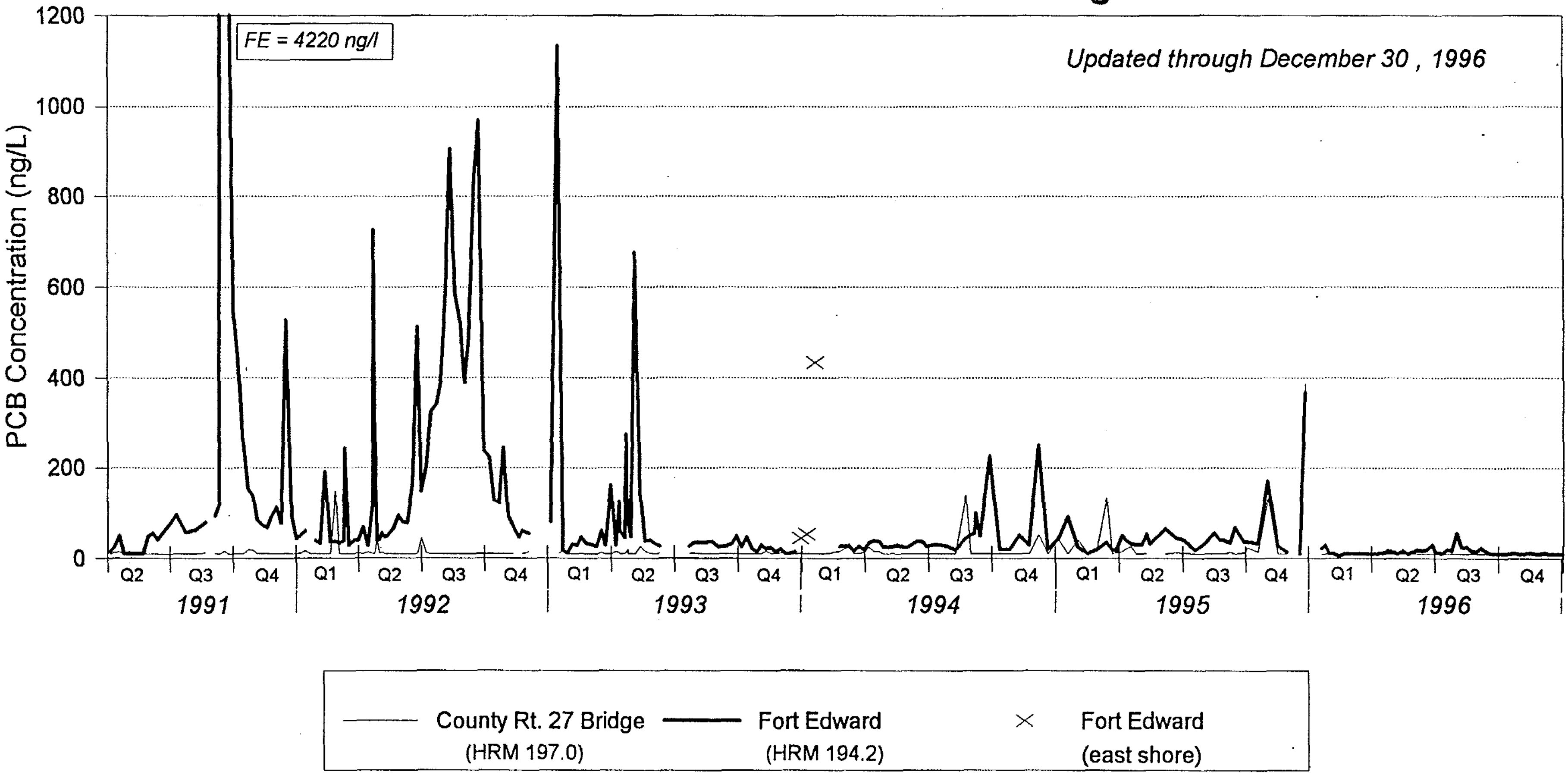
High flow events with mean daily flows greater than 12,000 cfs are indicated by ▲. For events with flows greater than 18,000 cfs, approximate peak mean daily flows are provided in parentheses ( ).
Final USGS flow data are presented through September 1995, from October 1995 through December 1996 final USGS data have not been published and provisional data are presented.
* Float surveys were conducted for both the temporal water column and post construction remnant deposit monitoring programs.
# Falls typically dewatered but intermittent flow over dam occurs.

O'Brien & Gere Engineers, Inc.

B81BA.Fh5/clm/051397

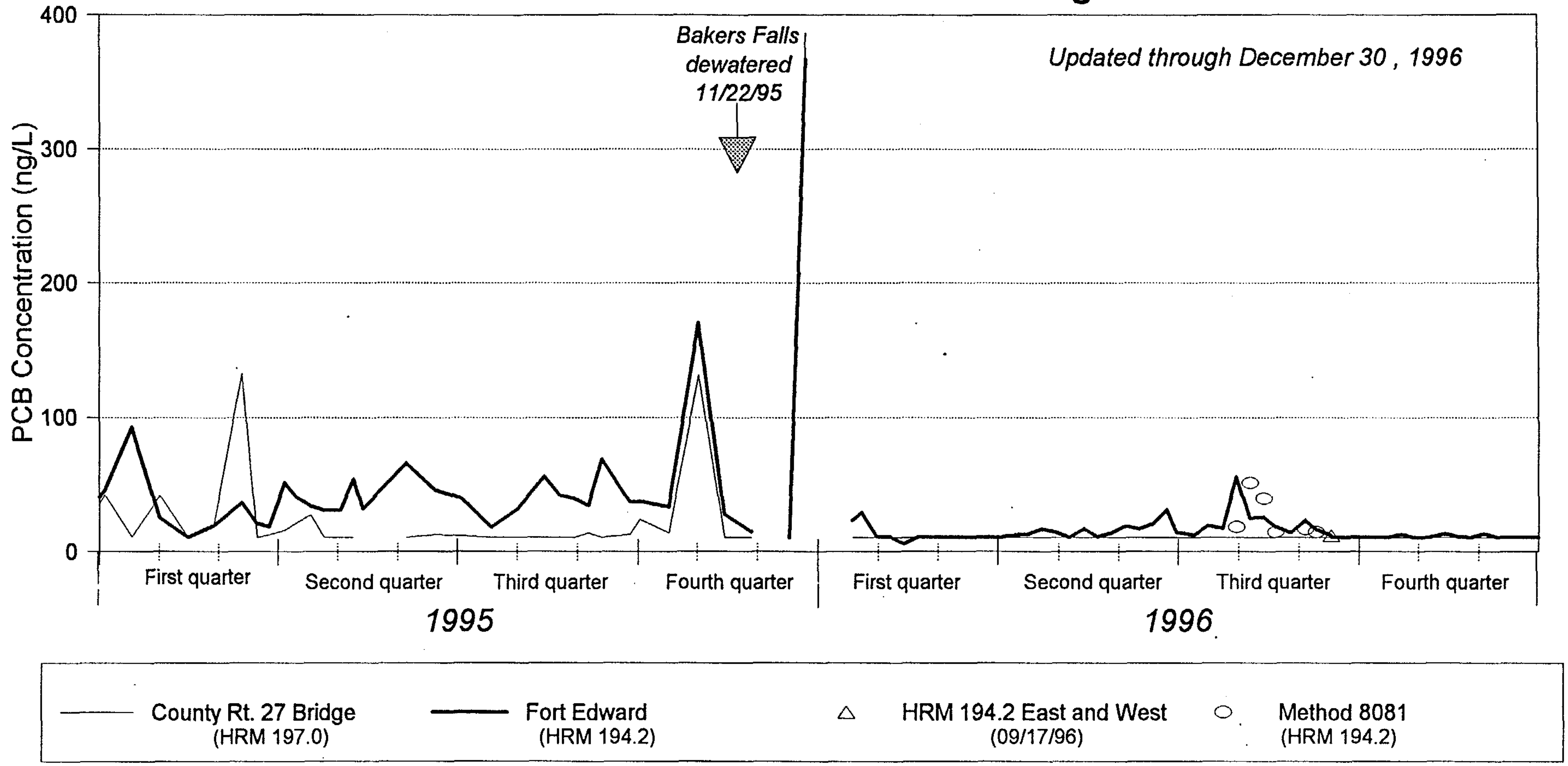
321701

Figure 1-3
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
1991 to 1996 PCB Water Column Monitoring Results



Note: "X" indicates sample collected from the eastern shoreline of HRM 194.2 due to ice cover on the river. Data represents results of Method NEA608CAP analysis. MDL = 11 ng/l, PQL = 44 ng/l, Q = yearly quarter. PCB data has been adjusted for analytical biases.

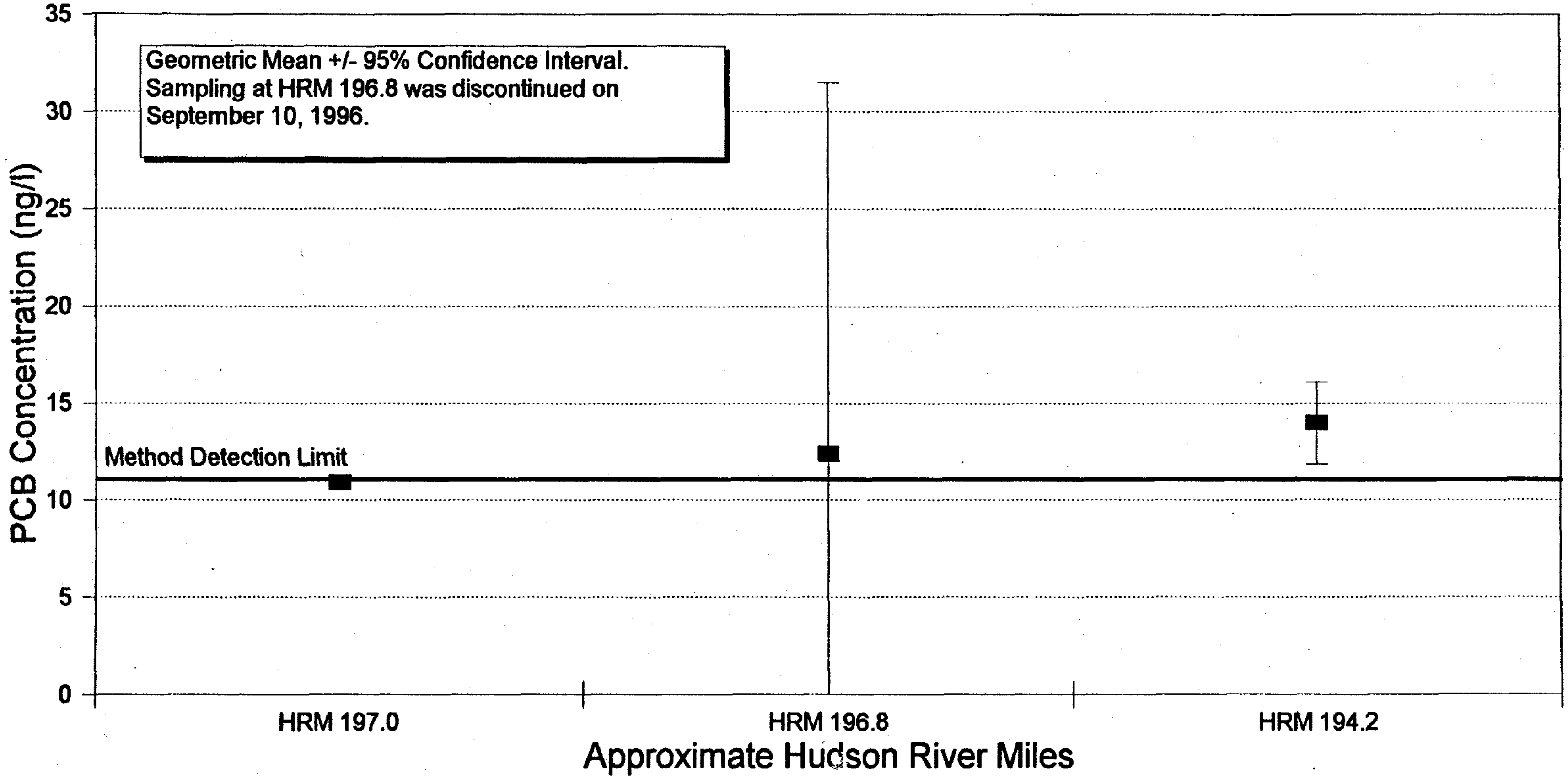
Figure 1-4
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
1995 to 1996 PCB Water Column Monitoring Results



Note: Triangle indicates average of west and east channel samples from HRM 194.2 collected during transect study (09/17/96). Data represents results of Method NEA608CAP analysis, except where circles indicate results from Method 8081 analyses. MDL = 11 ng/l, PQL = 44 ng/l. Method NEA608CAP PCB data has been corrected for analytical biases.

321703

Figure 3-1
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
Statistical Comparison of 1996 PCB Data by Sample Location

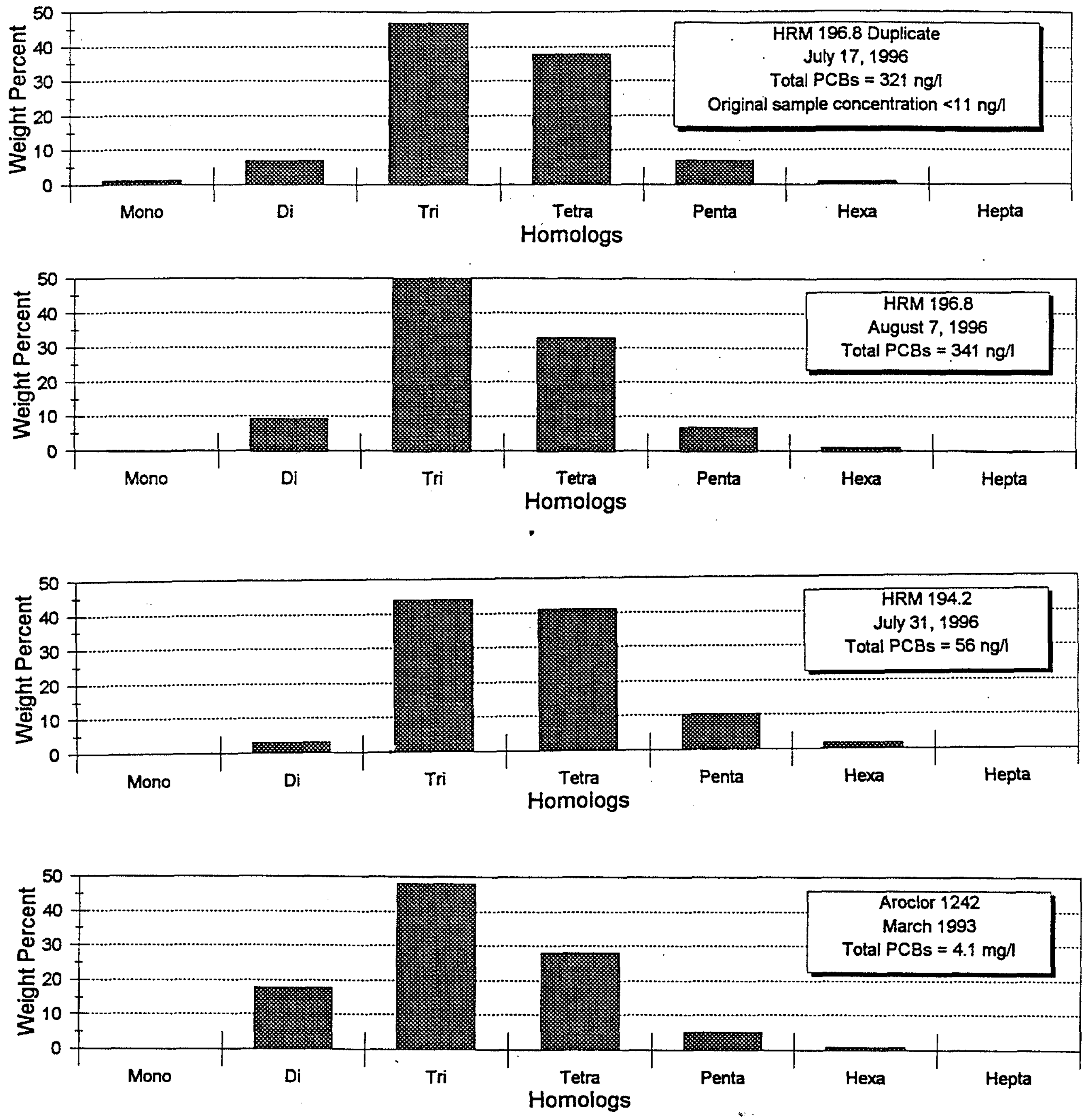


Note: Statistics were calculated using PCB analytical results from Method NEA608CAP. Method Detection Limit = 11 ng/l; Practical Quantitation Limit = 44 ng/l. For PCB results reported below the detection limit, a value below the detection limit (10.9 ng/l) was used to calculate the statistics. Samples collected between January 19 and December 30, 1996. Data have been corrected for analytical bias.

321704

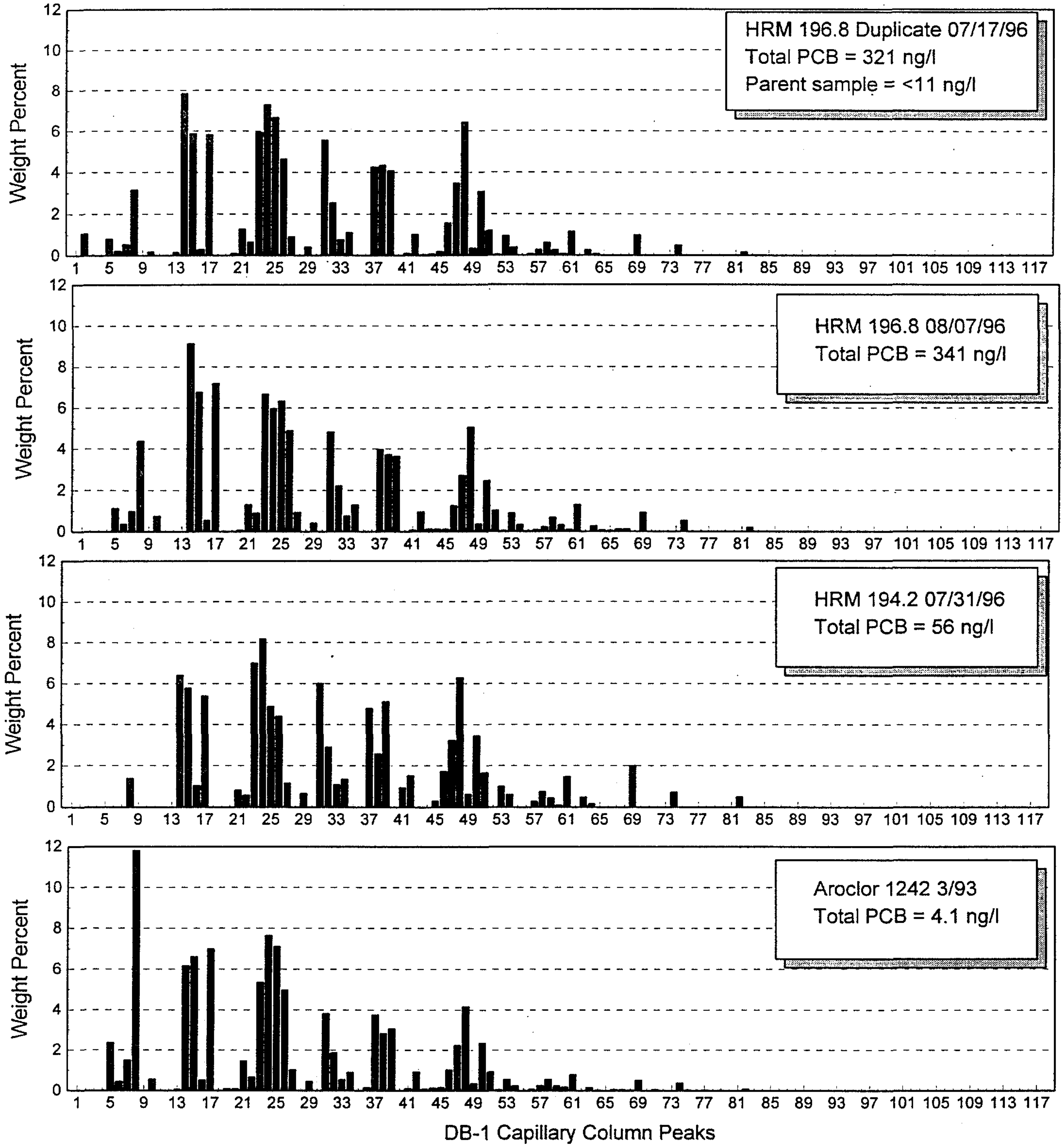
Figure 3-2

General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
Water Column Homolog Distributions



Note: Homolog distributions are presented for total PCB concentrations greater than the Practical Quantitation Limit (44 ng/l) for the sampling period 01/19/96 to 12/30/96. The Aroclor 1242 distribution was obtained from NEA Laboratories (3/93) and is presented for reference purposes. Data have been corrected for analytical bias.

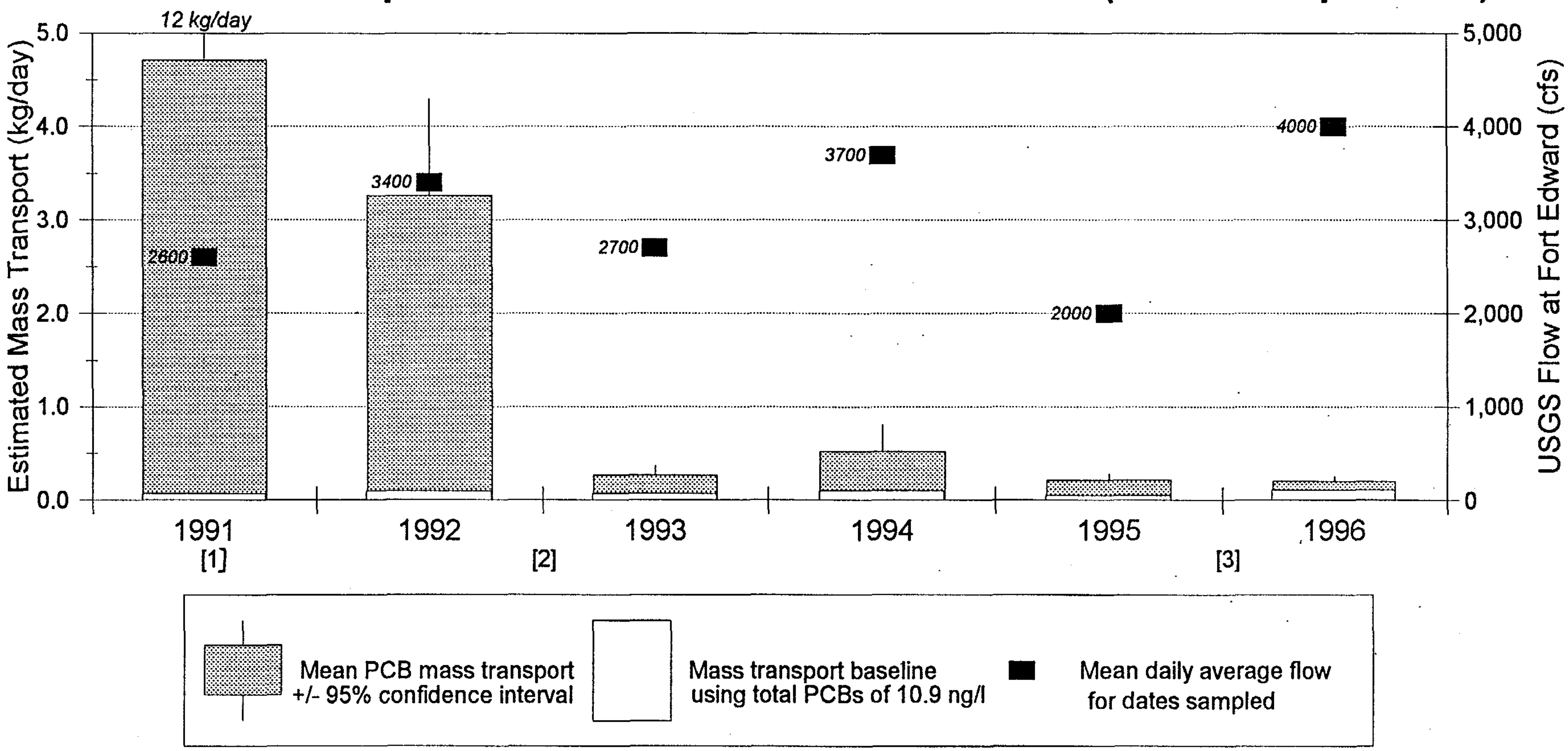
Figure 3-3
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
Congener Distributions - HRM 196.8 and HRM 194.2



Note: Data have been adjusted for analytical bias. Congener distributions are presented for sample results with total PCB concentrations greater than the practical quantitation limit (44 ng/l).

321706

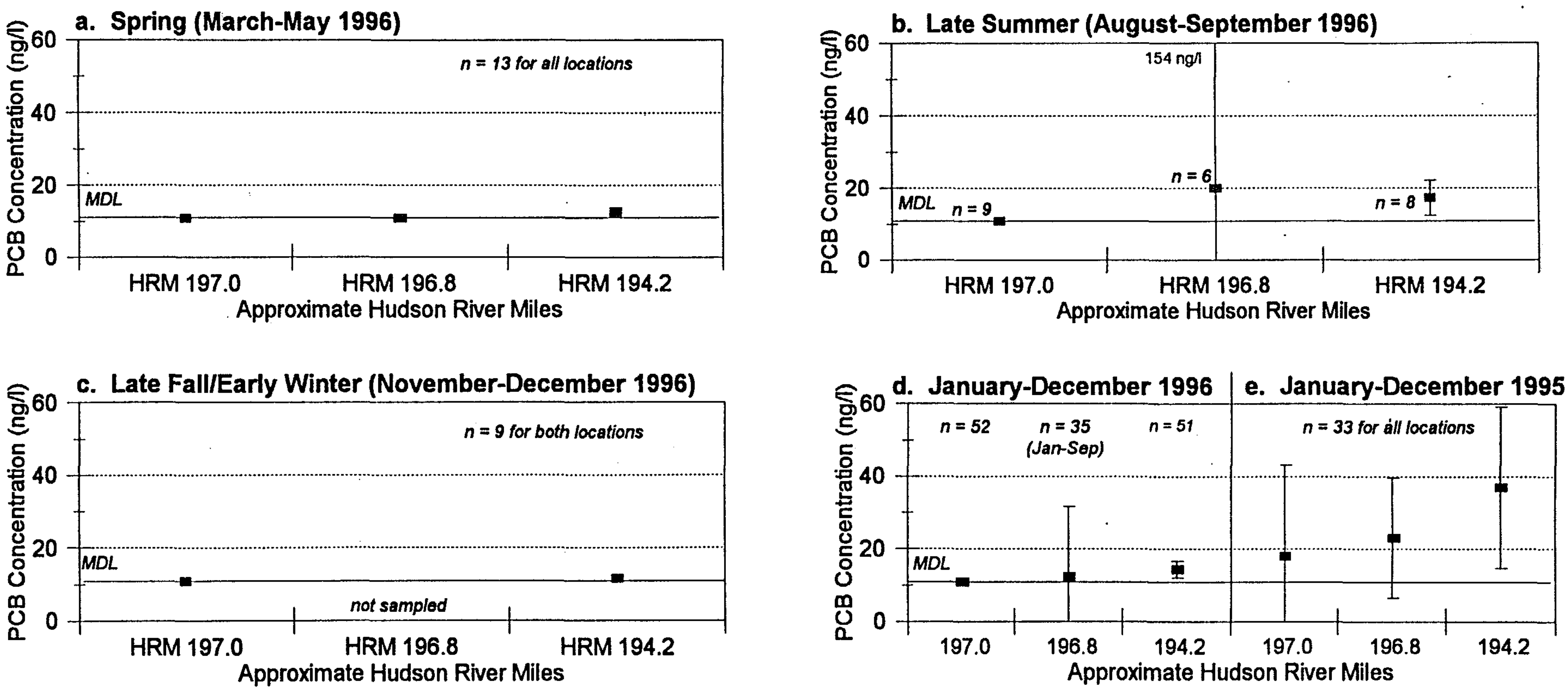
Figure 4-1
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
PCB Mass Transport at HRM 194.2 Summer Low Flow (June to September)



Note: Mass transport is calculated as PCB concentrations (ng/l) times USGS daily average flow (cfs) times a conversion factor. Mass transport is presented as the average for the summer low flow sampling period for each year. USGS flow data was measured at the Fort Edward gaging station. USGS published flow values were averaged for the summer low flow sampling period for each year. Data qualified with "R" using data validation criteria are not included in statistics. PCB concentrations were obtained from Method NEA608CAP analyses corrected for analytical bias. Baseline values were calculated using total PCB concentration of 10.9 ng/l. Baseline PCB mass transport is indicated by the unshaded portion of each bar. [1] indicates inferred collapse of the Allen Mill gate (9/91). [2] indicates implementation of source control measures (winter 1992-1993). [3] indicates initiation of hydrofacility operations at Bakers Falls which have changed the hydrology of the river in the vicinity of Bakers Falls (12/95).

321707

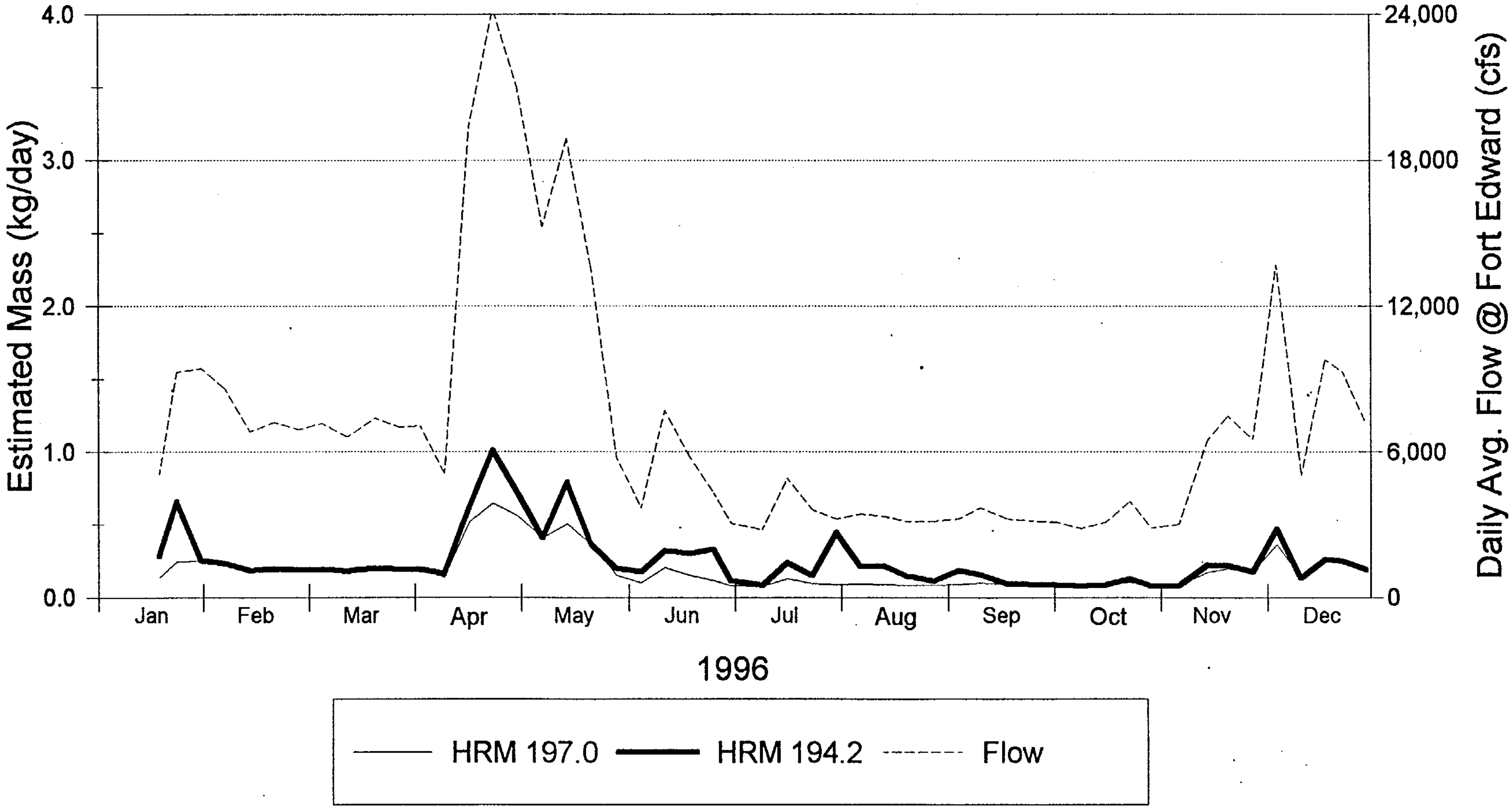
Figure 4-2
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
PCB Geometric Mean +/- 95% Confidence Interval for Selected Time Periods



Notes: Statistics were calculated using PCB analytical results from Method NEA608CAP. Data have been corrected for analytical bias. Method Detection Limit (MDL) = 11 ng/l; Practical Quantitation Limit = 44 ng/l. For values below the MDL, a value of 10.9 ng/l was used to calculate statistics.

321708

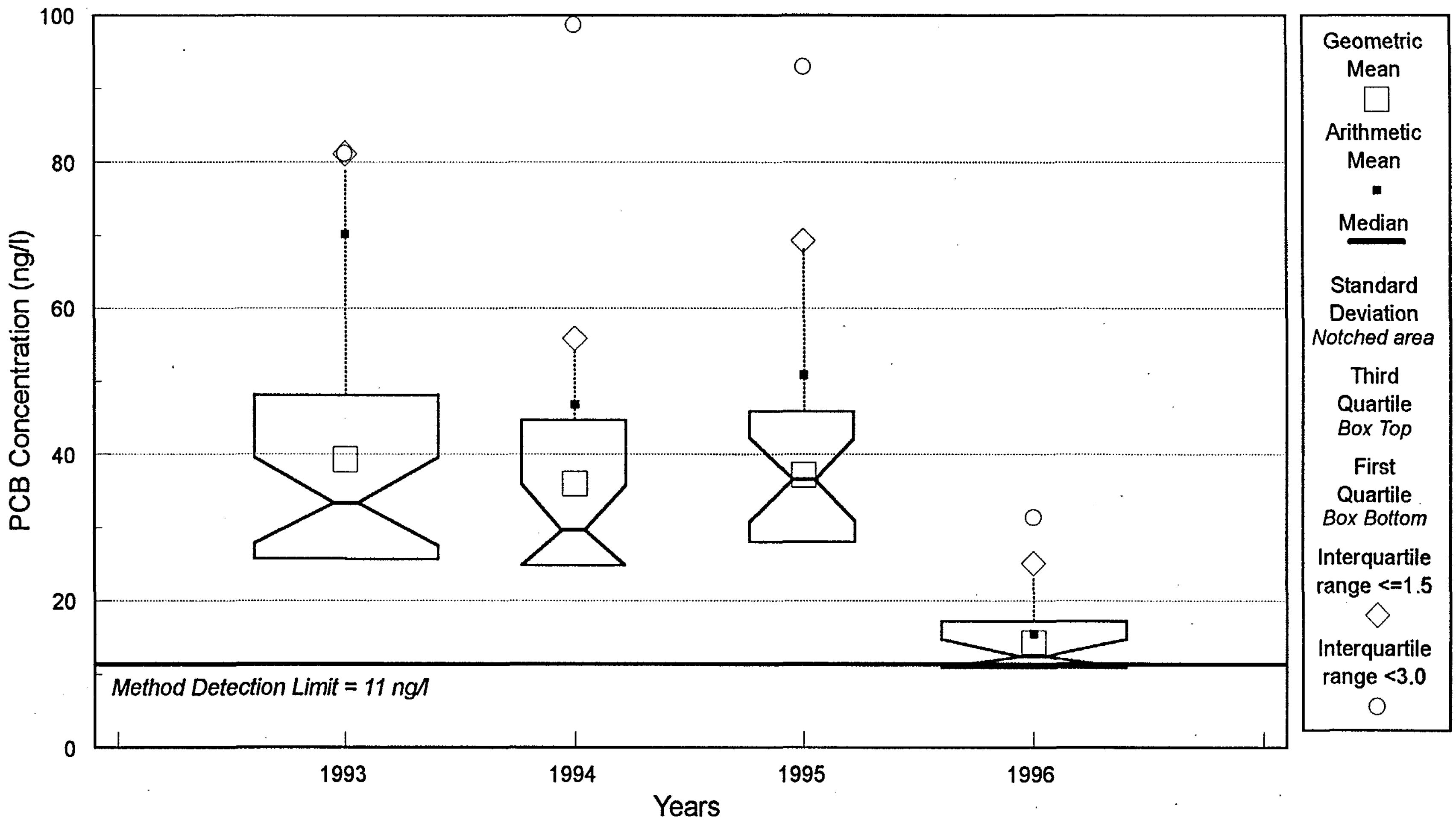
Figure 4-3
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
Estimated Daily Water Column PCB Mass Transport in Remnant Region



Note: PCB data obtained from Method NEA608CAP. Data have been corrected for analytical bias. USGS flow data are preliminary (01/30/97). Estimated daily mass transport based on weekly PCRDMP PCB data and USGS daily average flow at the Fort Edward gaging station for the date sampled. For sample dates between 5/15/97 and 6/5/97, the sum of flows measured at two gaging stations upstream of Fort Edward have been used due to problems with the Fort Edward data (see Appendix D). For samples collected at the same station within the same week, mass transport data were averaged together for one weekly value. For PCB values less than the Method Detection Limit (11 ng/l), a value of 10.9 ng/l was used to calculate mass transport. HRM 197.0 was less than the detection limit throughout 1996. The mass transport at HRM 197.0 therefore represents the lowest mass, or baseline, evaluated by this approach.

321709

Figure 4-4
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
Box Plot Statistical Analysis of Total PCB Concentrations at HRM 194.2: 1993-1996

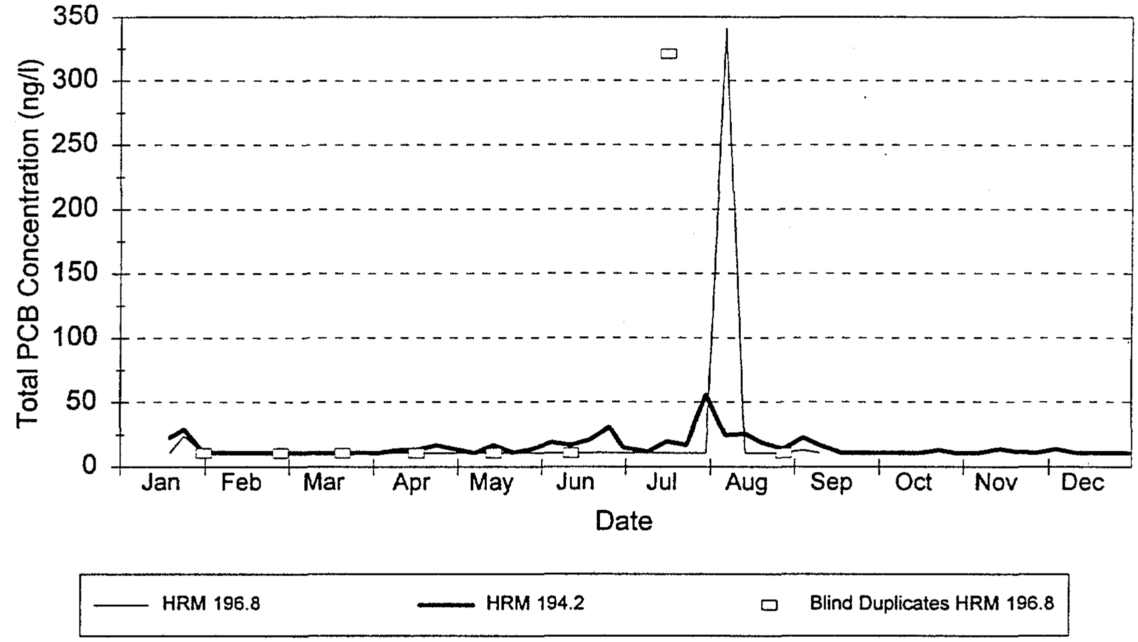


321710

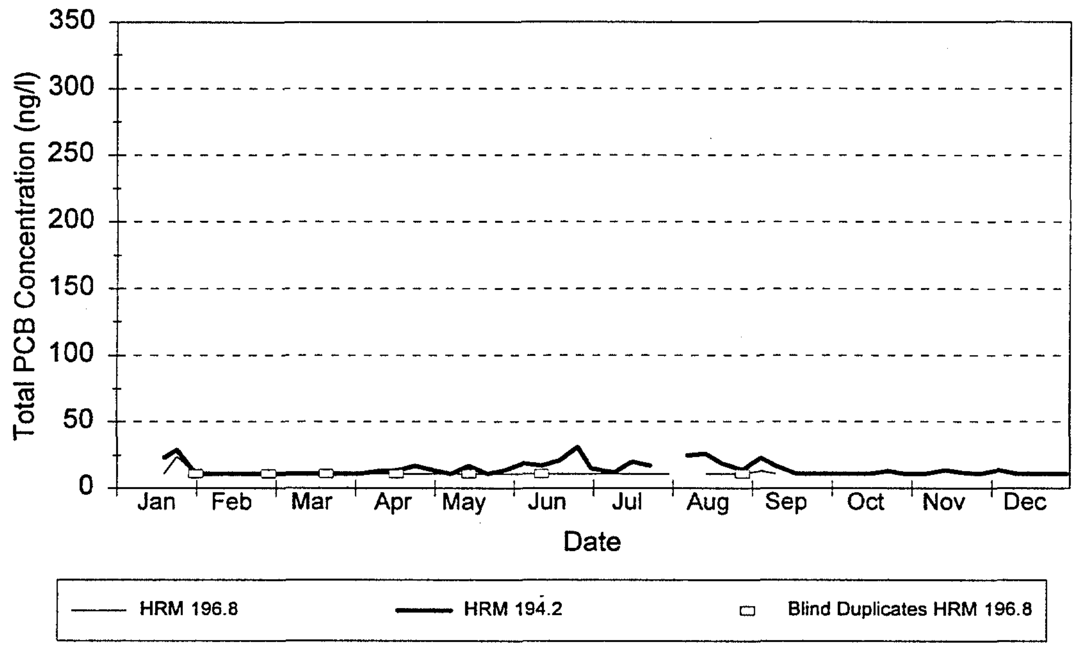
Note: Statistics were calculated using analytical bias corrected PCB results from Method NEA608CAP. Method detection limit = 11 ng/l. Practical Quantitation limit = 44 ng/l. For values reported below the method detection limit, a value of 10.9 ng/l was used to calculate the statistics. Box plots provide a summary of seven statistical components (see legend). When the notches of any two boxes overlap vertically, the medians are not statistically different at the 95% confidence level (Reckhow and Chapra 1983).

Figure 4-5
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
Overall Trends Analysis

A. Raw PCB data (Method NEA608CAP).

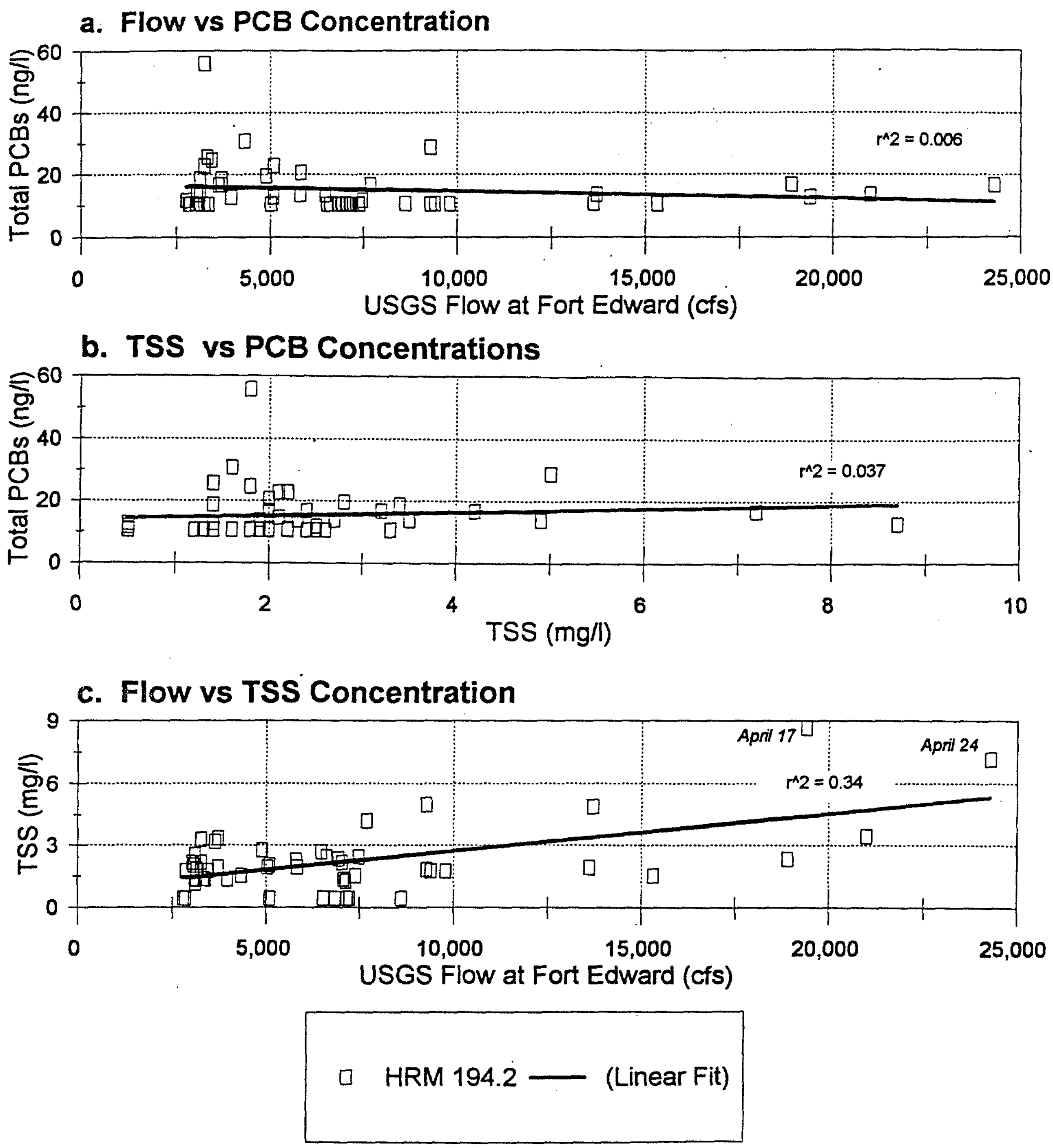


B. Trend analysis.



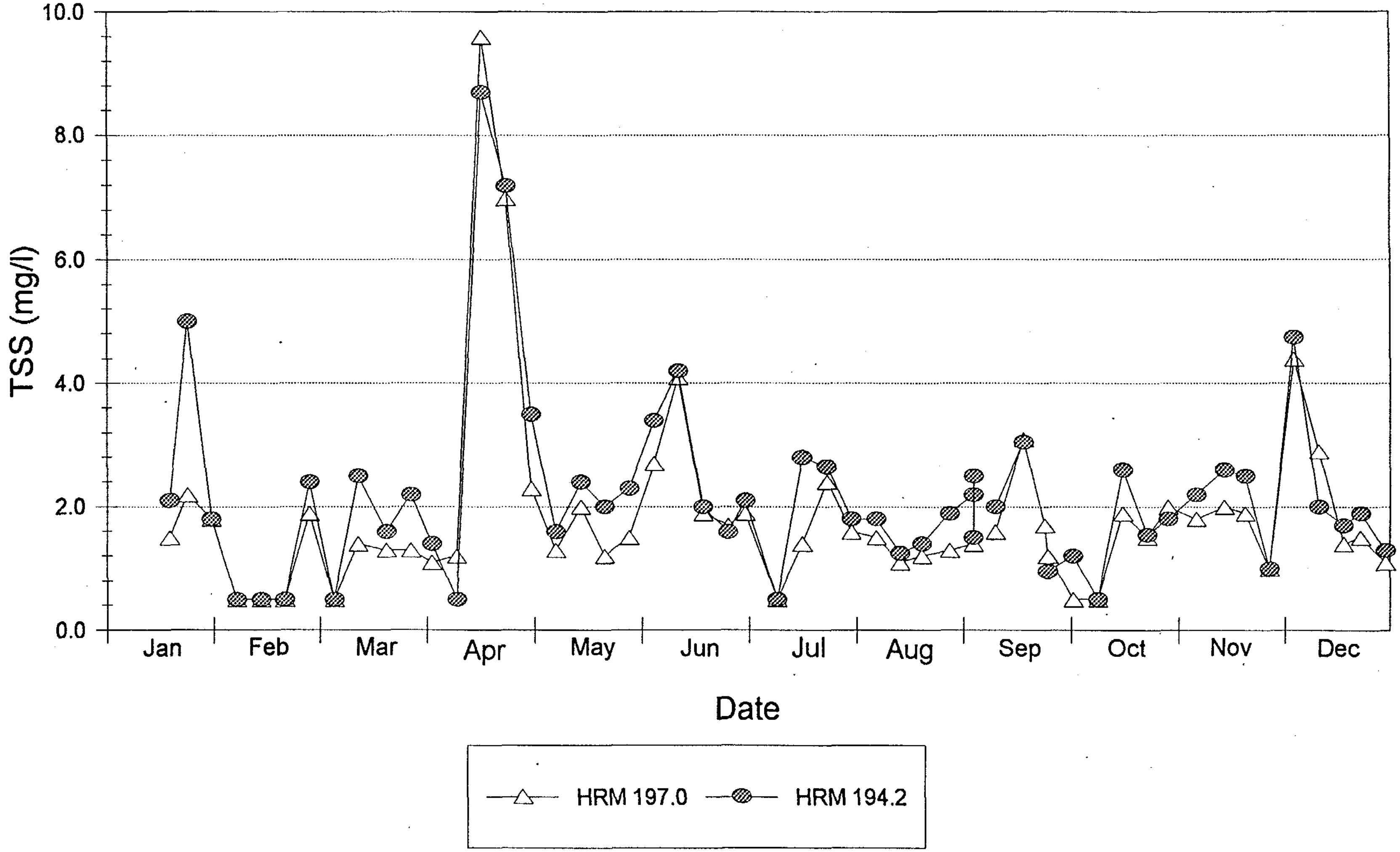
Notes:
Sampling at HRM 196.8 was discontinued as of September 10, 1996.
Method Detection Limit (MDL) = 11 ng/l, Practical Quantitation Limit = 44 ng/l.
Total PCB concentrations less than the MDL are shown as 10.9 ng/l.
Data have been corrected for analytical bias.

Figure 4-6
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
Comparison of Flow, PCB, and TSS Data at HRM 194.2



Note: Provisional flow data provided by USGS. Flows for the period between 05/15/96 and 06/05/96 are presented as the sum of flows measured at two stations upstream of Fort Edward (Appendix D). PCBs analyzed by method NEA608CAP. Data have been corrected for analytical bias. For PCB and TSS data less than the method detection limits, a value of one-half the detection limit is presented.

Figure 4-7
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
1996 Water Column TSS Concentrations



Notes: TSS analyzed by USEPA Method 160.2. Sample and duplicate results are averaged together. TSS concentrations reported below the detection limit (1.0 mg/l) are reported as one-half the detection limit (0.5 mg/l)

APPENDIX A

Evaluation of PCB sources using capillary column congener data

Appendix A. Evaluation of PCB sources using capillary column congener data

Analysis of PCBs using a capillary column analytical method has provided valuable information for "fingerprinting" potential PCB sources in the upper Hudson River based on characterization of PCB composition. This appendix provides the background of PCB source identification presented in previous PCRDMP reports (O'Brien & Gere 1996a, 1995a, 1994a, 1993a) as outlined below.

- PCB chemistry
- PCB capillary column analytical method
  - gas chromatography
  - identification of PCB congeners
- Method detection limit studies
  - Total PCB method detection limits
  - Congener method detection limits
- Evaluation of PCB composition
  - Evaluation of homolog and congener distributions
  - detection limits for evaluating PCB composition in Hudson River samples
- Source identification techniques
  - PCB composition of Aroclor standards
  - PCB composition of potential sources to the Hudson River
  - Comparison of water column PCB composition with potential sources
- PCB dynamics in the remnant deposit region of the upper Hudson River.

PCB chemistry

PCBs are a class of chlorinated, aromatic hydrocarbons consisting of two bonded six-carbon rings (biphenyl molecule) to which one or more chlorines are bonded at ten available sites. PCBs with the same number of chlorines on a biphenyl molecule are referred to as *homologs*. Members of the same homolog group are *isomers*. For example, 2-chlorobiphenyl and 6-chlorobiphenyl are monochlorobiphenyl isomers. That is, each molecule contains one chlorine bonded to different positions on the biphenyl molecule. The isomers in all of the homologs are generically referred to as *congeners*. There are a total of 209 possible PCB congeners.

PCBs are also identified by the position of the chlorine atoms relative to the carbon-carbon bond. *Ortho* substituted PCBs are those having one or more chlorine atoms attached to the available sites closest to the carbon-carbon bond. *Meta* substitution refers to chlorine occupation of the second available sites from the carbon-carbon bond in both the clockwise and counter clockwise direction. A *para* substituted PCB contains a chlorine atom at the site opposite the carbon-carbon bond on either of the six carbon rings.

PCBs were sold in the United States as commercial mixtures under the trade name *Aroclors*. Specific Aroclor mixtures contain characteristic PCB homolog and congener distributions (Table A-1). These characteristic distributions are useful in source identification by providing a "fingerprint", or signature, of PCBs originating from potential sources.

PCBs exposed in the environment can be altered, changing the signature of the original mixture. Environmental alteration of PCBs may occur due to several environmental processes:

- Weathering occurs as volatilization, solubilization, or photolysis. Volatilization and solubilization result in preferential losses of lightly chlorinated PCBs (mono- and dichlorobiphenyls). These losses are recognized by elevated weight percent composition of higher chlorinated PCBs compared to commercial mixtures. In contrast, photolysis results in dechlorination of more highly chlorinated PCBs (Brown et al. 1987a,b).

- Reductive dechlorination results in loss of heavily chlorinated *meta* and *para* substituted PCBs (Abramowicz 1990; Brown et al. 1987a,b).

- Biodegradation results in loss of lightly chlorinated PCBs which is recognized by specific peak losses which can be attributed to known processes. Losses can occur at a greater extent than would be expected due to volatilization and solubilization or photolysis (Abramowicz 1990; Brown et al. 1987a,b).

The cumulative effects of these processes result in distinct PCB signatures, which differ from the original commercial Aroclor mixtures.

Analysis of PCBs by capillary column method

Analysis of PCBs by capillary column method provides advanced quantification of PCBs in environmental matrices (Figure A-1). The level of congener resolution provides sufficient information to characterize the signature of PCBs and facilitate source identification. This analysis is performed by Northeast Analytical, Inc. (NEA) using Method NEA608-CAP.

Recent research identified analytical biases in the quantification of PCB congener data generated by Method NEA608CAP (HydroQual 1997). These analytical biases resulted from error in the original calibration of the PCB standard used in the NEA608CAP (calibration error), and from coeluting mixed peak deconvolution assumptions used for Hudson River samples (coelution error). Calibration error and coelution error correction factors were developed to adjust the PCB data for the analytical biases inherent in Method NEA608CAP (HydroQual 1997). These correction factors have been applied to PCB analytical data collected from the Hudson River (O'Brien & Gere 1997a).

Gas chromatography.
The gas chromatography instrumentation used to analyze samples for PCBs consisted of a Varian Model 3400 Gas Chromatograph (GC) equipped with capillary on-column injection, temperature programmable oven, Model 8000 automatic sampler, and fast time constant electron capture detector (ECD). A data system (Dynamic Solutions, Maxima Work station) for chromatographic operations and integration of detector signal was interfaced to the GC. Output from the GC system was processed into a real time chromatogram and a sample specific report that included peak identification, retention time, peak name, integrated peak area, amount of solution, homolog concentrations, and sample amount. The data packages include PCB chromatograms and congener reports for each sample (Appendix F). Each package includes a separate quality assurance/quality control (QA/QC) data summary report, detailing QA/QC data for spikes, USEPA check samples, duplicates, and method blanks.

Identification of PCB congeners.
Extensive research has been performed to identify the PCB congeners that correspond to each of the 118 peaks eluted on the DB-1 capillary column utilized in this method (Figure A-2). Several peaks contain two or three congeners that coelute as a single peak. In standard PCB mixtures (*e.g.* Aroclors), the amount of each congener in coeluting peaks has been analyzed (NEA 1990). In environmentally altered PCBs, the relative proportions of

congeners in a given peak may be different from the standards. However, this information is sufficient to allow reliable calculation of total PCB concentrations and PCB homolog distributions. In addition, key congeners (or congener groups) can be tracked, allowing evaluation of PCB sources in the river which are characterized using the same technique. Further details on the analytical method are provided in the QAPP (O'Brien & Gere 1992).

Recent research identified analytical biases in the quantification of PCB congener data generated by Method NEA608CAP (HydroQual 1997; Frame *et al* 1996). These analytical biases resulted from error in the original calibration of the PCB standard used in the NEA608CAP (calibration error), and from coeluting mixed peak deconvolution assumptions used for Hudson River samples (coelution error). Calibration error and coelution error correction factors were developed to adjust the PCB data for the analytical biases inherent in Method NEA608CAP (HydroQual 1997). These correction factors have been applied to PCB analytical data collected from the Hudson River prior to September 1, 1997 (O'Brien & Gere 1997). Since September 1, 1997, NEA has corrected the calibration standard used in Method NEA608CAP, and coelution error correction factors are subsequently applied to the laboratory PCB data results obtained from Hudson River samples (O'Brien & Gere 1997).

Method detection limit studies - Method NEA608-CAP

Method detection limit studies describe the limitations of the analytical method in evaluating PCB quantification and composition. Both total PCB and congener PCB method detection limit studies for the method NEA608-CAP have been performed using organic-free laboratory reagent water. The method detection limit studies were performed before analytical biases were corrected.

Total PCB method detection limit study.
A method detection limit study was conducted by NEA to evaluate the lowest detectable total PCBs concentration that could be reliably achieved in one-liter water samples collected from the Hudson River (O'Brien & Gere 1993b). The method detection limit study was performed using organic-free water samples spiked with PCBs in accordance with 40 CFR Part 136. The method detection limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero. The MDL is estimated from analysis of a sample in a given matrix containing the analyte. A practical quantitation limit (PQL) was derived

from the method detection limit. The PQL is defined as the lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operations.

The results of the method detection limit study indicated an average method detection limit value of 7.7 ng/l. The laboratory elevated the method detection limit for reporting purposes to 11 ng/l to account for potential matrix interferences within Hudson River water. The PQL, based on this method detection limit, was set at 44 ng/l. In samples collected for the PCRDMP, concentrations of PCBs which are between the method detection limit and PQL (from 11 to 44 ng/l) are considered estimates and results are reported with a "P" qualifier. The homolog and congener distributions may be less accurate at these low levels due to decreased sensitivity of lower chlorinated congeners close to the detection limit, as discussed below.

Congener specific method detection limit study.
A separate method detection limit study was conducted to evaluate the detection limits of 115 individual and coeluting congeners detected by the DB-1 capillary column (O'Brien & Gere 1995a, Figure A-3). A comparison of the mean method detection limits for the homologs indicates that the method detection limit for monochlorobiphenyl is approximately five times higher than the mean method detection limits for the other homologs (Figure A-4). The lowest homolog method detection limits were observed for penta- and hexachlorobiphenyls. These differences are due to the sensitivity of the ECD which responds to the presence of chlorine. As a result, higher chlorinated congeners are detected at lower concentrations than lower chlorinated congeners. At concentrations above the PQL these sensitivity differences are negligible.

The results of the congener specific method detection limit study have important consequences for the detection of signature patterns of PCBs at low concentrations. As the concentration of samples approach the method detection limits of individual congeners it is anticipated that the signature would become distorted. For example, an Aroclor 1242 signature would appear to contain higher weight percents of penta- and hexachlorobiphenyls due to the inability to detect the lower chlorinated congeners. Likewise, low concentrations of environmentally altered samples containing elevated weight percents of monochlorobiphenyl would not be detected thereby misrepresenting the actual signature of the PCBs present.

Results of the congener specific method detection limit study indicate that the utility of capillary column analysis is not realized at PCB concentrations near the method detection limit. Therefore, interpretation of capillary column data should include recognition of these limitations and interpretations should be restricted to concentrations where signature recognition is possible. The PQL of 44 ng/l established for total PCB quantitation appears technically justifiable as a limit for signature recognition, as well.

Evaluation of PCB composition in Hudson River water samples

The PCB composition of Hudson River water samples was evaluated using a three step approach:

- To evaluate the original composition of water column PCBs, the composition of PCBs in water column upstream and downstream of the remnant deposits were compared to those of commercial Aroclor mixtures.
- The composition of PCBs of potential source materials in the remnant deposit region of the river were identified and compared with commercial Aroclors.
- Water column PCB composition was compared to potential PCB source materials

Evaluation of homolog and congener data was restricted to samples with concentrations greater than the PQL (44 ng/l) due to uncertainties in pattern recognition at lower concentrations. The results of low concentration PCRDMP water column data collected from 1992 through 1996 are consistent with the results of the congener method detection limit study, discussed above. The congener distributions of low concentration water column samples, below the PQL of 44 ng/1, become distorted and appear to contain higher weight percent composition of higher chlorinated congeners than samples with higher total PCB concentrations (O'Brien & Gere 1993a, 1994a, 1995a, 1996a). Monochlorobiphenyls were not detected in total PCB concentrations near the PQL (Figure A-4). Thus, increases in weight percent composition of tri- and tetrachlorobiphenyls at concentrations below the PQL are believed to be an artifact of analytical sensitivity differences.

PCB composition of Hudson River water compared to commercial Aroclor mixtures.
Characteristic homolog and congener distributions were identified for commercial Aroclor mixtures of PCBs (Figure A-5). Aroclor 1242 is distinguished by the presence of primarily tri- and tetrachlorobiphenyls. The

PCB composition of water column samples collected at Fort Edward (HRM 194.2) generally resembles unaltered Aroclor 1242. The composition of PCBs has been consistent both upstream and downstream of the remnant deposits (O'Brien & Gere 1995a).

PCB composition of potential sources in the remnant deposit region of the Hudson River.

The composition of PCBs was evaluated by comparing homolog and congener distributions of water column samples with those of potential source materials from Queensbury, the Bakers Falls source(s), remnant deposits, and former outfall 004. PCB compositions of these potential PCB sources were evaluated for evidence of changes in composition due to exposure of PCBs to the environment including site-specific physical and chemical processes (weathering), and biological processes (aerobic biodegradation and anaerobic dechlorination). Therefore, changes in PCB composition as evident in homolog and congener distributions were used to characterize different PCB sources.

Source upstream of the background sampling station (HRM 197.0). A recent investigation of sediment in the vicinity of Queensbury identified a composition consisting of altered Aroclor 1242 (O'Brien & Gere 1995c). Queensbury data were used as reference for the background monitoring station (HRM197.0), but the typical absence of detectable PCBs in the water column at this station indicate that this was a minor PCB source in the remnant deposit region of the river. PCB composition of this source has not been evaluated further.

Source(s) upstream of the remnant deposits. Remedial investigation of the Bakers Falls source(s) in 1993 identified the PCB composition of source materials as predominantly unaltered Aroclor 1242 (O'Brien & Gere 1994a,b). Data collected from the sampling station upstream of the remnant deposits (HRM 196.8) indicate that the Bakers Falls source(s) consists predominantly of Aroclor 1242 that has not been altered or degraded by environmental processes. This is unusual because it is common for PCB homolog and congener distributions to change when exposed to the environment over extended periods, due to weathering and bioalteration. Therefore, the similarity of PCBs in samples collected near Bakers Falls to that of unaltered Aroclor 1242 is significant because it allows the "fingerprinting" of the PCBs in the river originating from this source (O'Brien & Gere 1993b).

The remnant deposits. Historic PCB composition data, although limited, identified PCBs in remnant deposits as an altered Aroclor 1242 pattern (Canonie Environmental 1990) likely due to environmental weathering and bioalteration. The remnant deposits were buried sediment in the river until the removal of the Fort Edward dam in 1973, hence, these PCBs show evidence of environmental weathering and bioalteration as observed in other Hudson River sediments. Unfortunately, detailed PCB composition data for the remnant deposits is not available since characterization conducted in association with the remnant deposits containment consisted of low-resolution packed column gas chromatography instead of high-resolution capillary column gas chromatography. Therefore, PCB concentrations were reported as Aroclors rather than congeners.

Former outfall 004. Sediment investigations in the vicinity of former outfall 004 identified a range of PCB compositions consisting of mixtures of Aroclor 1242 and 1248 or 1254 (Dames & Moore 1994; O'Brien & Gere 1995b). Evaporated or leached Aroclor 1242 can be difficult to distinguish from Aroclor 1248 (Brown and Abramowicz 1996). The mixture identified at former outfall 004 differs from the principal PCB composition found in the water column, suggesting that the former outfall 004 remnant deposit is not supplying significant PCB load to the river. It is difficult to quantify the PCB contribution to the water column from the former outfall 004 area. PCBs at this site are believed to be altered Aroclor 1242 and 1254 (Brown *et al* 1987a,b)

Comparison of PCRDMP data with potential sources materials.
Homolog distributions of water column samples collected for the PCRDMP were similar to Aroclor 1242 (primarily tri- and tetra-chlorobiphenyls), from Bakers Falls to the sampling station downstream of the remnant deposits. The overall consistency of homolog and congener distributions between the sampling stations upstream and downstream of the remnant deposits suggests that a single type of PCB source in the river, located upstream of the remnant deposits, is the primary source of PCB in this reach of the river.

Monitoring conducted by others (Tofflemire 1984; Harza 1992a,b) prior to 1992 had inferred the presence of a PCB source upstream of the remnant deposits. Following the 1992 post-construction monitoring period, the presence of the source was confirmed from results of congener PCB analyses which identified the water column PCBs as an unaltered Aroclor 1242 pattern. The unaltered Aroclor 1242 pattern in the vicinity of the remnant deposits corresponded with patterns found in samples from the Bakers Falls source(s) area.

Water column homolog and congener distributions of samples collected at the Fort Edward sampling station (HRM 194.2) were consistent between 1992 and 1996, resembling an unaltered Aroclor 1242 pattern. Water column congener results have been in contrast to those anticipated if the remnant deposits had been the primary contributor of PCBs to the water column. Historic samples identified the PCBs buried in upper river sediments to contain primarily mono- and dichlorobiphenyls (O'Brien & Gere 1991, 1993a) characteristic of biological alteration. Such alteration results in selective *meta* and *para* dechlorination producing a unique composition with elevated *ortho* substituted congeners which is not found in commercial mixtures (Brown et al. 1987a; Brown et al. 1987b; Brown et al. 1984).

While these data alone are insufficient to conclusively determine the PCB composition of the remnant deposits, they do show alteration patterns of PCBs from the remnant deposits that are inconsistent with the unaltered PCB composition found in the water column (O'Brien & Gere 1993a). If the remnant deposits were actively contributing PCBs to the water column, PCB congener patterns through this region of the river should resemble that found in the remnant deposits. As such, the remnant deposits do not appear to be a significant source of PCBs observed in the water column.

PCB Dynamics in the remnant deposits region of the upper Hudson River

Consistent increases in PCB concentrations have been observed between sampling stations upstream and downstream of the remnant deposits (HRM 196.8 and HRM 194.2, respectively [reach 9]). PCRDMP monitoring conducted from 1992 through 1995 indicated PCB concentrations downstream of the remnant deposits (HRM 194.2) were approximately two times higher than the concentrations upstream (HRM 196.8; O'Brien & Gere 1996a). In 1995, geometric means for these two stations were 35 and 20 ng/l, respectively (O'Brien & Gere 1996a). This simple evaluation of the monitoring data could be interpreted as an indication that the remnant deposits are a significant source of PCBs to the Hudson River. However, as discussed below, a review of the complete data set does not support such an interpretation. Due to concerns for the representativeness of data collected at the HRM 196.8 sampling station, sampling was discontinued at this station in September 1996, following approval by USEPA (1996).

Little or no changes in PCB composition occur as water flows through reach 9. PCBs in the water column at the upstream and downstream stations in reach 9 have nearly identical composition that is similar to that of Aroclor 1242 (O'Brien & Gere 1996a). PCB composition data from the remnant deposit sediments are different from water column data in that the PCBs have been dechlorinated, although composition data are limited. If the remnant deposits were responsible for the observed concentration increase, then a noticeable shift in PCB composition would be expected to occur as the river passed by the remnant deposits. This shift does not occur (O'Brien & Gere 1996a).

Upstream and downstream loadings in reach 9 appear correlated. The apparent PCB mass loading to the river between HRM 196.8 and HRM 194.2 (*e.g.*, the remnant deposits including outfall 004 area) varied as the mass loading from upstream of the monitoring point HRM 196.8 varied (between HRM 197.0 and 196.8). Generally, as upstream source loading increases, the apparent loading from the remnant deposits increased (O'Brien & Gere 1994a, 1995a).

Given the current understanding of PCB loading from the upstream sources, it is not clear physically why increases in PCB inputs in the area of the remnant deposits occurred at the same time increases at the upstream sources occurred. These sources would be expected to behave independently. Instead, the observed dependent loading suggested that source(s) upstream of the remnant deposits were responsible for PCB loading observed at both locations. The increase observed between HRM 196.8 and HRM 194.2 likely reflected underestimation of the mass loading at HRM 196.8 rather than loading originating from the remnant deposits. Such underestimation may be caused by incomplete mixing of the PCBs over the river cross-section and the manner of sampling (O'Brien & Gere 1995a, 1996b).

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Table A-1. *Homolog composition of commercial PCB Aroclors*

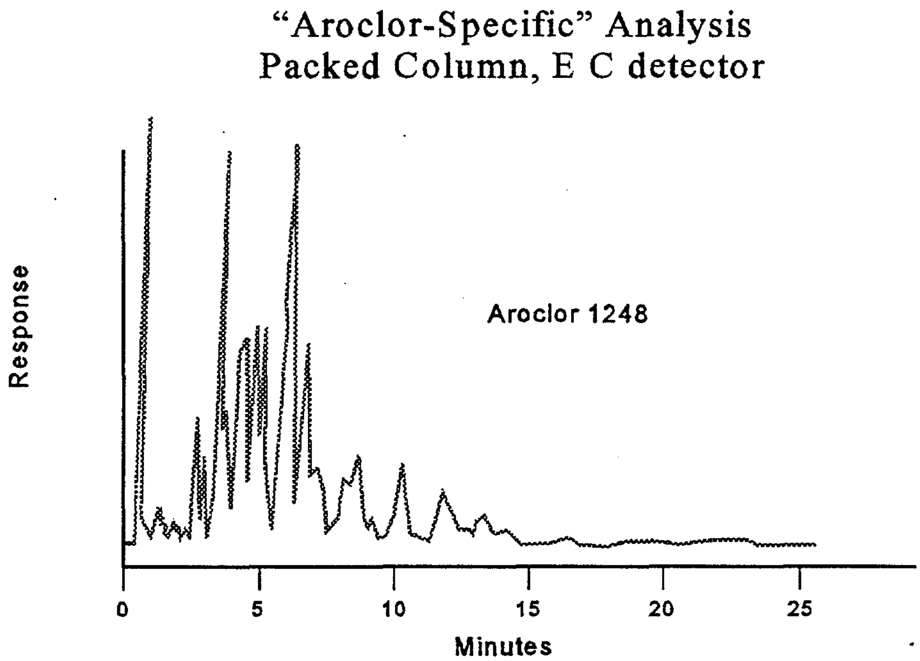
Homolog	# Cl	Aroclor Homolog Distribution (weight percent)						
		1016	1221	1232	1242	1248	1254	1260
Biphenyl	0	-	-	-	-	-	-	-
Mono-CB	1	0.6	51.4	27.2	-	-	-	-
Di-CB	2	22.3	39.8	30.6	17.7	1.3	0.4	-
Tri-CB	3	54.5	6.5	24.2	48.0	23.6	1.8	0.04
Tetra-CB	4	22.3	1.8	14.2	28.1	54.4	19.2	2.3
Penta-CB	5	0.3	0.3	3.1	5.2	15.9	50.4	12.1
Hexa-CB	6	-	0.1	0.6	0.95	3.9	24.4	36.7
Hepta-CB	7	-	0.05	0.1	0.02	0.9	3.6	39.0
Octa-CB	8	-	-	0.02	-	0.1	0.2	9.5
Nona-CB	9	-	-	-	-	-	0.01	0.4
Deca-CB	10	-	-	-	-	-	-	-

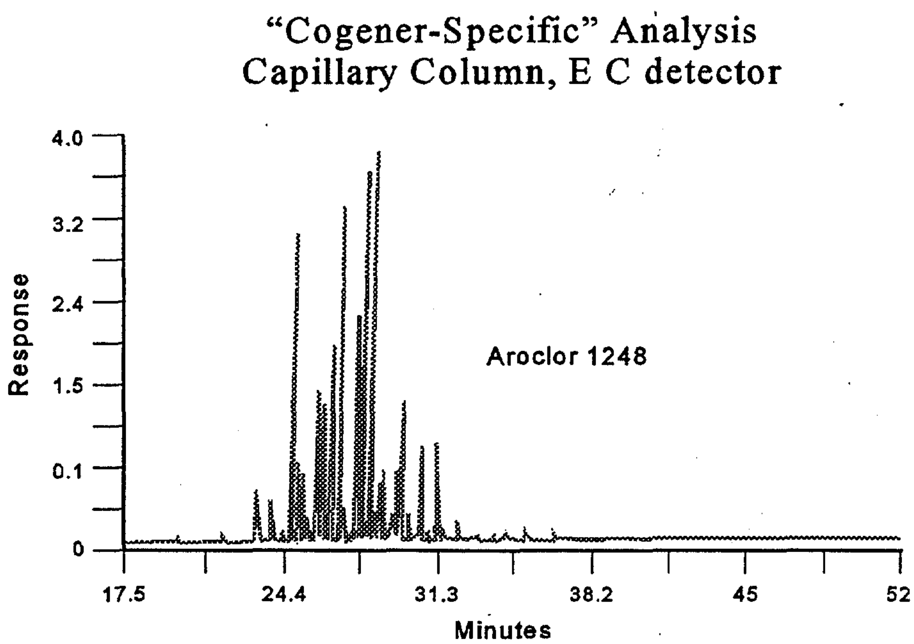
Note: CB= Chlorobiphenyl; Cl = chlorine

Homolog distributions obtained by Method NEA608CAP analysis (March 1993). Data have been corrected for calibration bias.

Source: Northeast Analytical, Inc.

Figure A-1



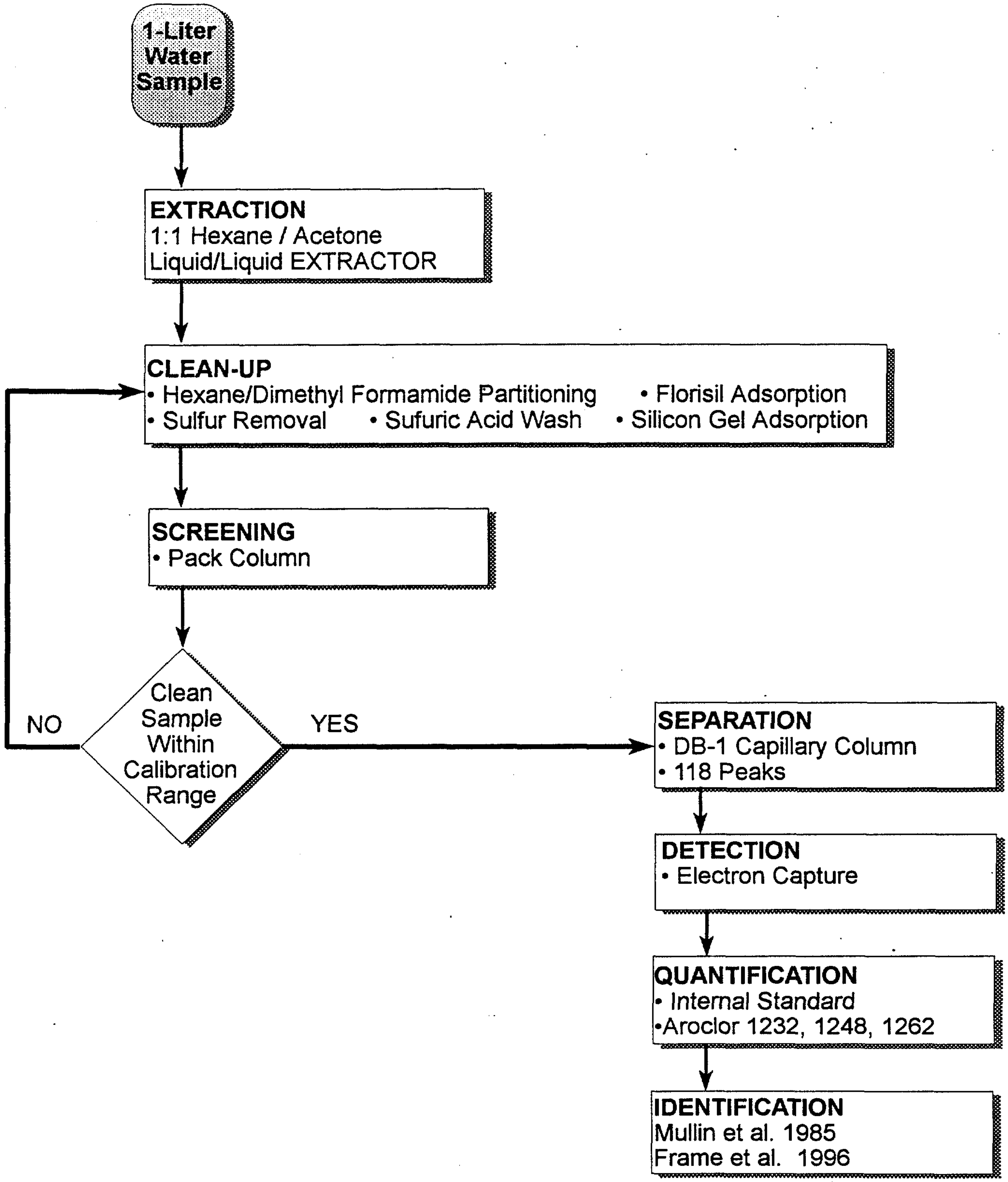


Gas chromatograms of Aroclor 1248 using packed column and capillary column separation.

i:52/0612225/5_/96/append/figure3.wpg

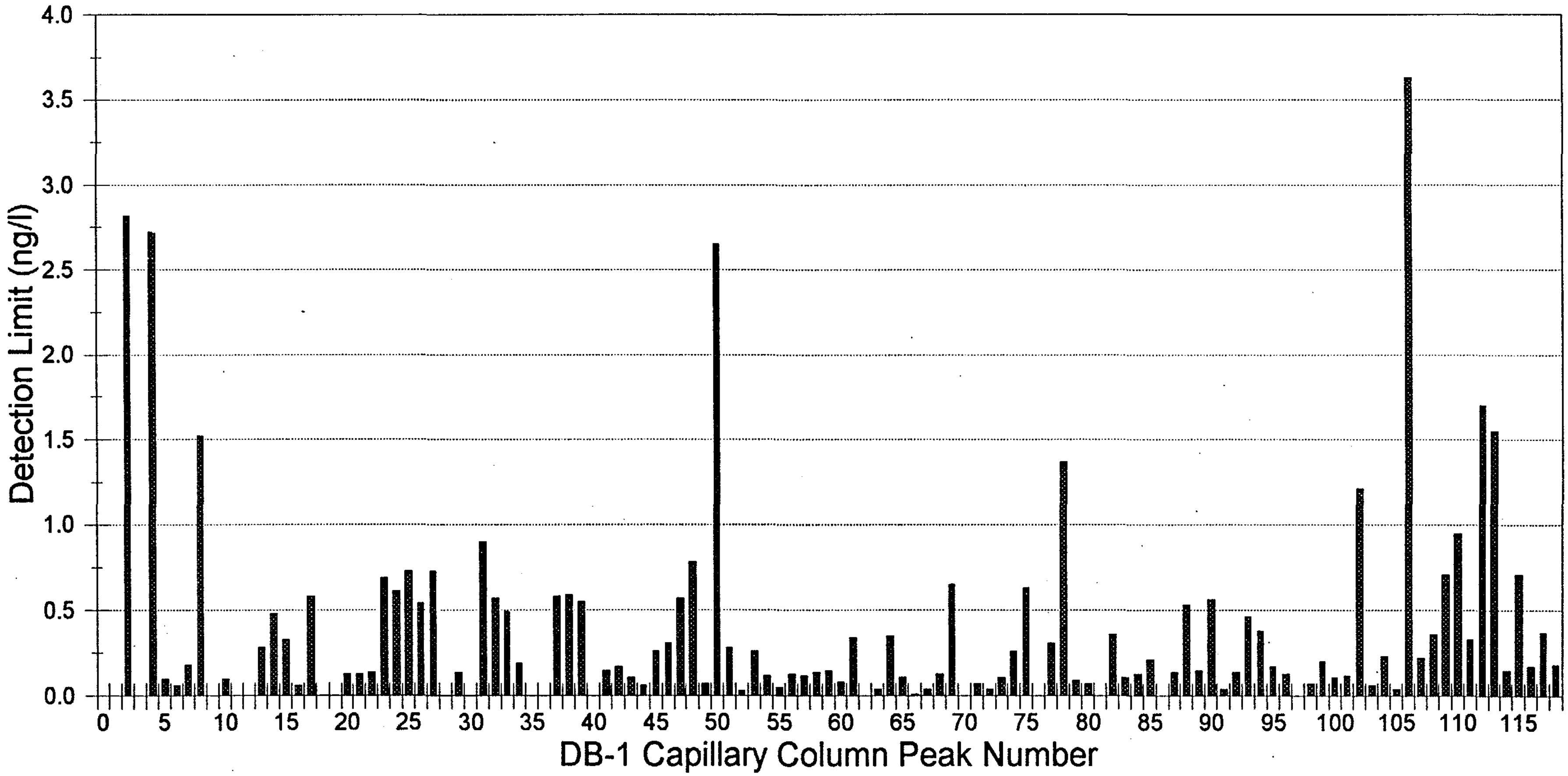
Figure A-2

PCB Analysis Scheme: Modification of U.S. EPA Green Bay Mass Balance Methodology



i:52/0612225/5_/96/append/fig_a2.wpg

Figure A-3
Congener Method Detection Limit Study
Northeast Analytical, Inc.



Method: NEA608CAP
Compound: PCB Congeners
Matrix: Water
Extraction: Separatory Funnel
Spike Conc: 156.7 to 6268 ng/l (Total PCB)

Analysis: Green Bay Analysis Internal standard calibration
Instrument: GC-1 (Varian Model 3400)
Column: J&W Scientific; DB-1, 30 meter length, 0.25 micron phase, o.25 mm I.D.
Detector: Electron Capture

Source: Northeast Analytical, Inc 9/93

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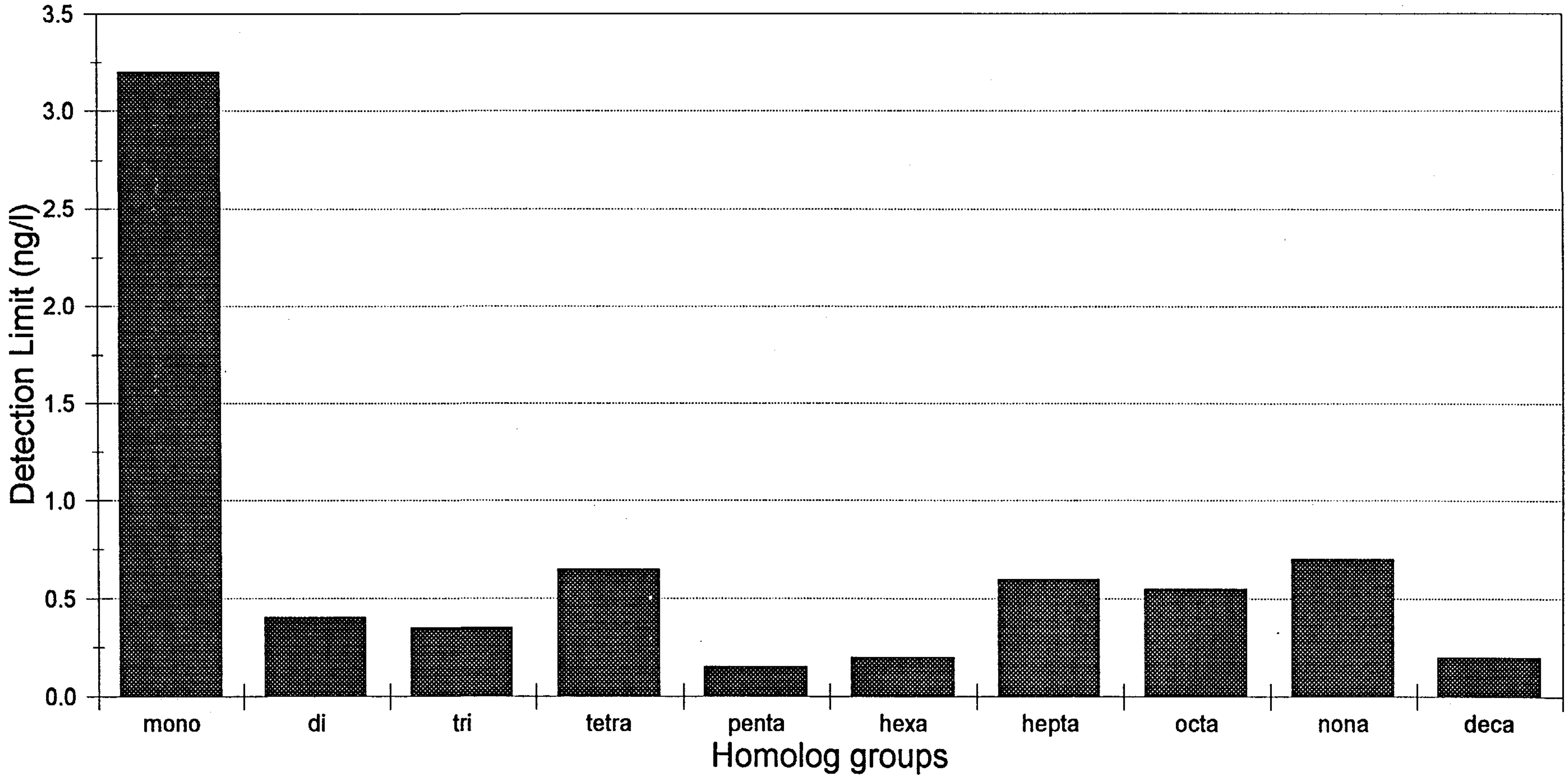
Figure A-4
Mean Homolog Detection Limits
Northeast Analytical, Inc.



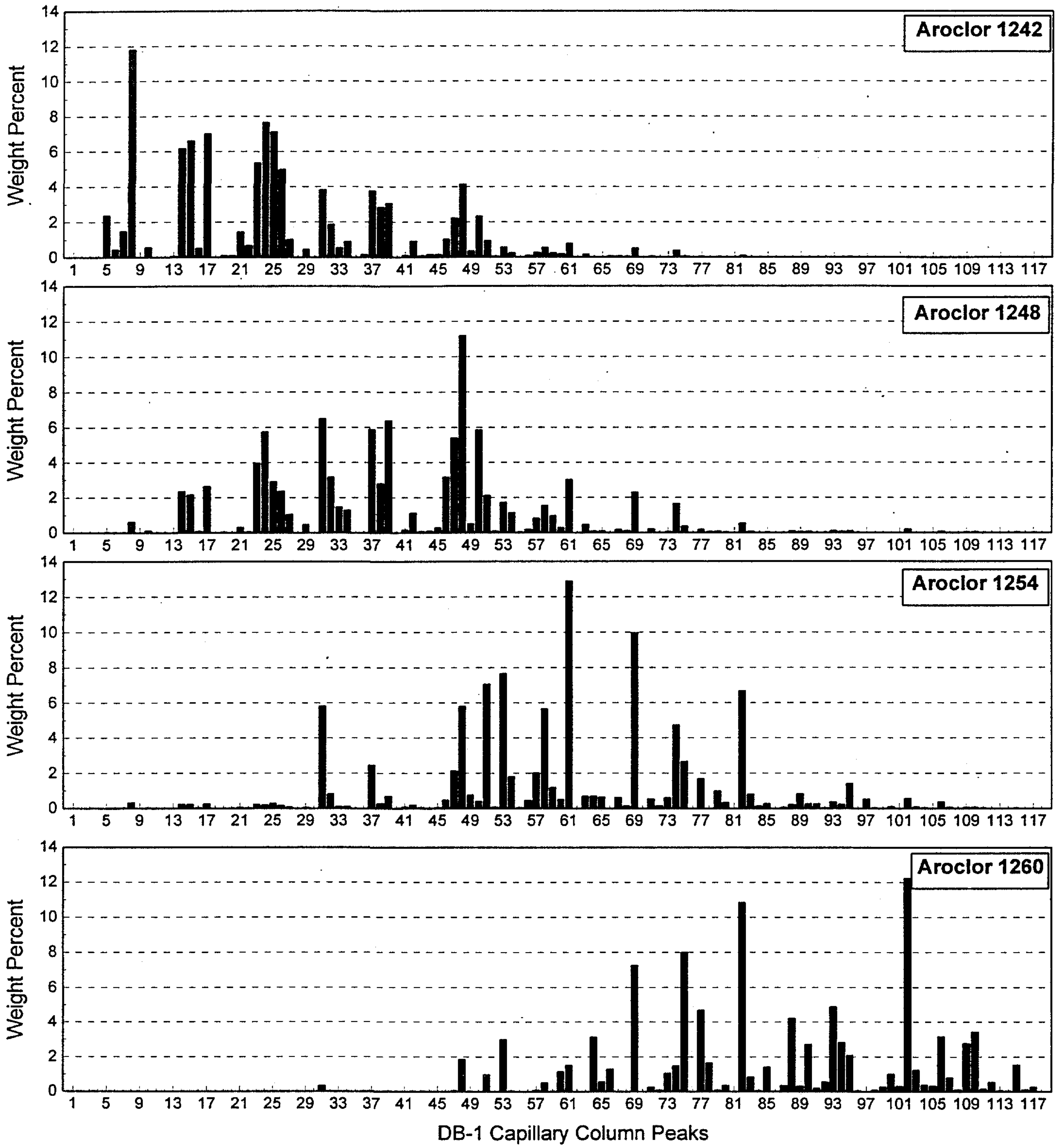
Method: NEA608CAP
Compound: PCB Congeners
Matrix: Water
Extraction: Separatory Funnel
Spike Conc: 156.7 to 6268 ng/l (Total PCB)

Analysis: Green Bay Analysis Internal standard calibration
Instrument: GC-1 (Varian Model 3400)
Column: J&W Scientific; DB-1, 30 meter length, 0.25 micron phase, o.25 mm I.D.
Detector: Electron Capture

Source: Northeast Analytical, Inc 9/93

Figure A-5

General Electric Company - Hudson River Project
Post-Construction Remnant Deposit Monitoring
Congener Distributions - Aroclor Standards



Note: Data have been adjusted for analytical bias.

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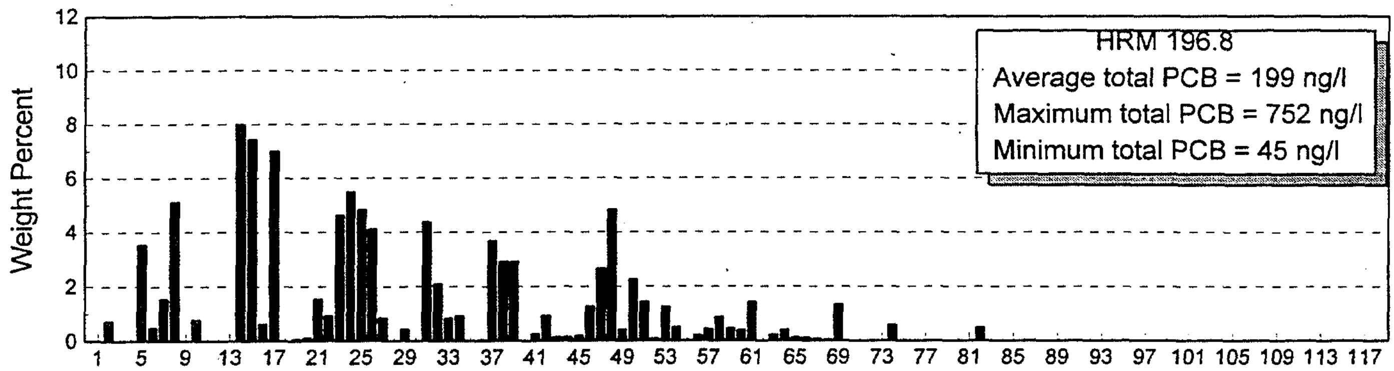
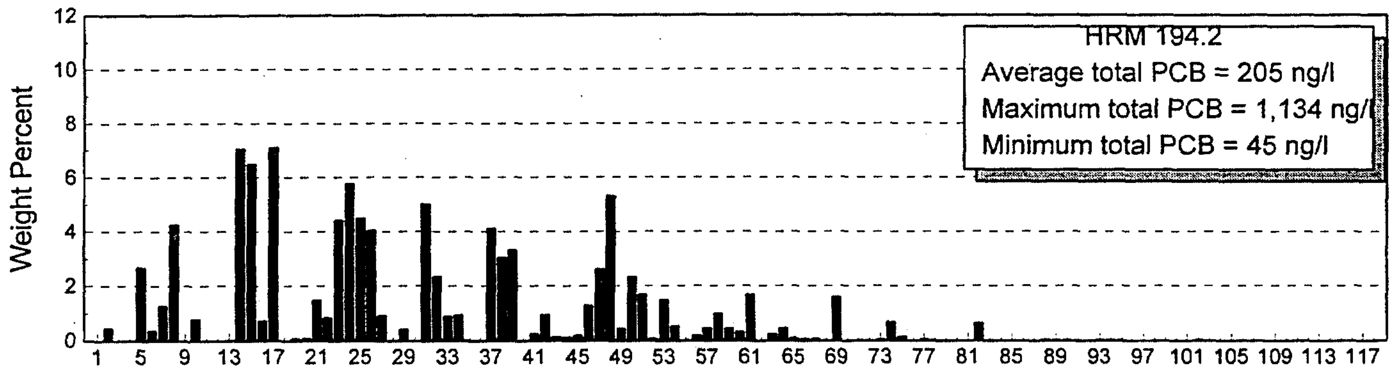
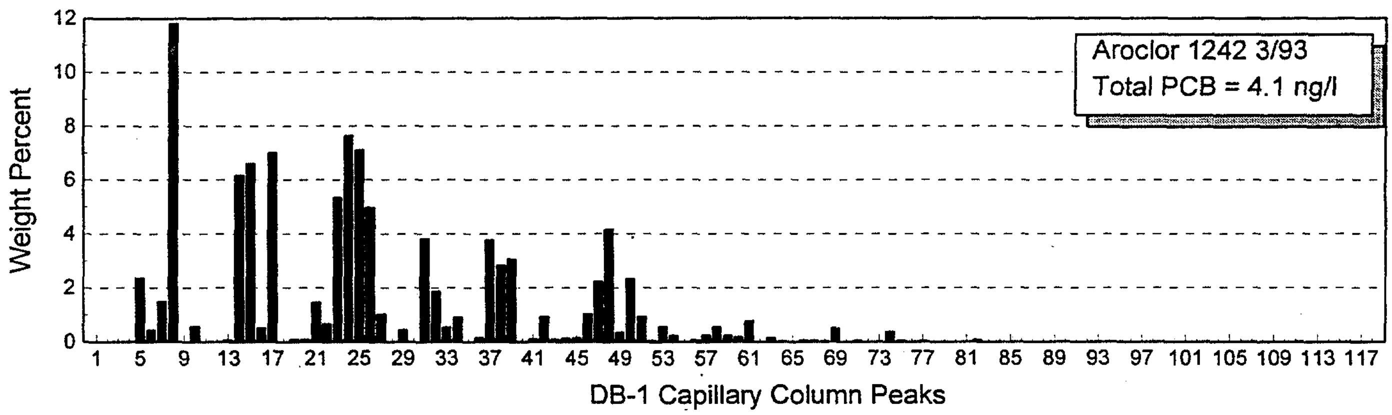
Figure A-6
General Electric Company - Hudson River Project
1992-1996 Post-Construction Remnant Deposit Monitoring
Average Congener Distributions - HRM 196.8 and HRM 194.2







Note: Data were collected between March 1992 and September 1996, and were averaged together to obtain the congener weight percent distributions presented. Data have been adjusted for analytical bias. Congener distributions are presented for sample results with total PCB concentrations greater than the practical quantitation limit (44 ng/l).

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APPENDIX B

Additional water column data collected in 1996

Appendix B. Additional Hudson River water column data collected in 1996

Additional water column data were collected during 1996 to provide information in support of PCRDMP objectives. This appendix provides a synopsis of the purpose, methods, and results/discussion of these additional investigations. The organization of this appendix is outlined below.

- PCB concentrations at the base of Bakers Falls
- Hydrofacility maintenance operations
- Fort Edward (FED) transect study
- PCB concentrations in Thompson Island Pool

In addition, water column data generated by different PCB analytical methods were compared to evaluate data collected from different sources.

PCB concentrations at the base of Bakers Falls

Samples were collected at the base of Bakers Falls to identify potential source(s) of water column PCBs in the vicinity of the Bakers Falls.

Methods and materials

Two locations were sampled by Dames & Moore at the base of Bakers Falls consisting of plunge pool and boat launch samples (Figure B-1). Plunge pool samples were collected for 29 rounds of sampling conducted from July 10, 1996 through December 11, 1996. Boat launch samples were collected for four rounds of sampling conducted from December 11 through 30, 1996. Plunge pool and boat launch samples were collected as grab samples approximately two to three feet from the river bed. Sampling was performed according to site specific health & safety and work plans (Dames & Moore 1996a,b).

Samples were analyzed for total PCBs by Method NEA608CAP (NEA 1990), and total suspended solids (TSS) by USEPA Method 160.2 (USEPA 1983).

Results and discussion

PCB concentrations at the plunge pool ranged from < 11 to 1,453 ng/l, and at the boat launch PCB concentrations ranged from 18 to 121 ng/l (Table B-1, Figure B-2; General Electric 1996). The variability of PCB concentrations detected in the plunge pool water decreased to between 12 ng/l and 34 ng/l following initiation of river bed seep collection in the plunge pool on September 24, 1996 (Figure B-2). Data collected from the plunge pool and boat launch on the same day suggest that results from these two sampling stations are not directly comparable. PCB concentrations at the base of Bakers Falls (plunge pool and boat launch) were statistically higher than water column PCB concentrations detected at HRM 194.2 (Figure B-3).

TSS concentrations at the plunge pool ranged from less than 1.0 to 14 mg/l and at the boat launch TSS concentrations ranged from less than 1.0 to 1.8 mg/l (Table B-1; General Electric 1996).

Data collected at the plunge pool and boat launch are useful for characterizing the composition of PCB source(s) in this region of the river. The PCB composition of samples collected at the base of Bakers Falls resembled an unaltered Aroclor 1242 with some minor variation in congener composition (Figures B-4 through B-7). The similarity of PCB composition in samples collected near Bakers Falls to unaltered Aroclor 1242 allows the "fingerprinting" of PCBs in the river originating from this source (Appendix A). These data are consistent with previous data collected in the vicinity of the Bakers Falls source(s) (O'Brien & Gere 1996), indicating that the Bakers Falls source(s) continue to contribute PCBs to the water column.

Data collected at the plunge pool and boat launch are not sufficient to estimate PCB mass loading from the Bakers Falls source(s) directly. The data is an inaccurate representation of PCB mass loading from the source area due to sampling limitations. Specifically, the intermittent flows over the falls during low flow due to hydrofacility operation (discussed in Section B.2) complicate interpretation of PCB loading. Also, the proximity of the sampling location to the source(s) area limits the potential for complete mixing of PCBs migrating from the source(s) in this region of the river. These interferences reduce the accuracy of the data representing loading from the source area. Similar limitations were observed with samples collected at HRM 196.8 in previous years (Appendix A). As such, the data collected at the plunge pool and boat launch are not considered representative of overall water column PCB concentrations in the river and not useful for estimating PCB loading from the source(s) accurately.

Hydrofacility maintenance operations

Samples were collected to evaluate the potential impact of hydrofacility maintenance operations on water column PCB transport in the vicinity of Bakers Falls. The results of these sampling activities are described in detail below.

Methods and materials

Hydrofacility operations divert flow around Bakers Falls, discharging water along the west shore of the river below the falls (Figure B-1). As a consequence of hydrofacility water use, Bakers Falls is typically dewatered during low flow periods. However, routine maintenance of facility debris collection screens interrupts hydrofacility operations and causes water to flow over the falls for approximately ½ hour at 3 to 4 day intervals during low flow periods. Additional maintenance is required during spring high flow periods and the fall (AHDC 1996).

Samples were collected on September 4, 1996, from three sampling stations (HRM 197.0, HRM 194.2, and HRM 188.5) to represent water parcels flowing down the river before, during and after completion of maintenance operations. Timing of sample collection was based on time of travel calculations using real-time river stage discharge readings obtained from the USGS Fort Edward gaging station. Inaccurate instantaneous flows were obtained due to partial equipment failure at the USGS gaging station during sampling. Therefore, samples collected at HRM 188.5 did not match the intended parcels of water. Instead, rounds 1 and 2 represent before hydro facility maintenance operations and round 3 represents during hydro facility maintenance operations.

Samples collected at HRM 197.0 and HRM 194.2 were analyzed for PCBs by USEPA Method 8081 (USEPA 1986) and samples collected at HRM 188.5 were analyzed for PCBs by Method NEA608CAP (NEA 1990). Samples from the three locations were also analyzed for TSS by USEPA Method 160.2 (USEPA 1983).

Results and discussion

Concentrations increased following initiation of hydrofacility operations and inundation of Bakers Falls (Table B-2). Highly variable flows during hydro facility operation monitoring complicate further interpretation of data (Appendix C, Figure C-45).

Method 8081 analytical results identified the PCB composition as an Aroclor 1242 for samples collected at Plunge Pool and HRM 194.2 (Table B-1). Altered Aroclor 1242 PCB composition was identified in samples collected at HRM 188.5 (Table B-3).

Additional evaluation of the potential impact of hydrofacility maintenance operations on water column PCB transport in the vicinity of Bakers Falls is scheduled for 1997 (O'Brien & Gere 1997).

Fort Edward (FED) transect study

The FED transect sampling was conducted as a component of the *Hudson River PCB DNAPL Transport and Water Column Monitoring Study - Sampling and Analysis Plan* (HydroQual and O'Brien & Gere 1996). The FED transect study was conducted on September 17, 1996 to evaluate the representativeness of data collected from PCRDMP sampling stations and to refine the estimates of PCB transport through the remnant deposit region.

Methods and materials

The FED transect consisted of six sampling stations located downstream of the remnant deposits, approximately 1500 feet upstream of the routine Fort Edward sampling station at HRM 194.2 (Figure B-8). Temporal composite samples were collected at the six stations of the FED transect over an 8-hour sampling period. During the same 8-hour sampling period hourly, vertically integrated composites were collected separately from the east and west river channels at the routine Fort Edward sampling station (HRM 194.2). Samples were collected at the FED transect and HRM 194.2 sampling locations to represent the same parcel of water as it traveled downstream. Sampling was based on time of travel estimates.

Samples were collected according to the work plan submitted to USEPA and NYSDEC in August 1996 (HydroQual and O'Brien & Gere 1996). Procedures contained in the work plan were consistent with the sampling and analysis plan prepared for the PCRDMP (O'Brien & Gere 1992a,b,c; 1995; 1996). Transect samples were analyzed for PCBs by Method NEA608-CAP (NEA 1990) and TSS by USEPA Method 160.2 (USEPA 1983).

Results and discussion

PCB concentrations at the FED transect were at or less than the method detection limit (11 ng/l) at five of the six sampling stations (Table B-4). PCB results from the sample and blind duplicate collected at the sixth sampling station, located near the east shore, averaged 16 ng/l. TSS concentrations across the transect ranged from less than 1.0 mg/l to 1.3 mg/l. The average PCB concentration of eight hourly composites collected from the east channel at HRM 194.2 was 15 ng/l. Samples from the west channel at HRM 194.2 averaged 11 ng/l. TSS averaged less than 1.0 mg/l in the west channel, and 2.2 mg/l in the east channel.

The PCB composition of the FED transect samples resemble an unaltered Aroclor 1242 (Table B-5). Detailed evaluation of PCB composition using homolog and congener distributions is not possible due to total PCB concentrations that are below the practical quantitation limit (PQL = 44 ng/l). Detection limit differences of individual congeners reduces the reliability of PCB composition evaluations at total PCB concentrations less than the PQL (Appendix A).

Results of this transect sampling event indicated that mean PCB concentrations (Table B-4) and flow weighted mass transport estimates were approximately equivalent at the routine monitoring station and the transect. The transect sampling data are considered to provide a more detailed evaluation of water column PCB concentrations downstream of the remnant deposits than the PCRDMP data due to the more intensive sampling involved. The results of this transect event confirm that sampling at HRM 194.2 was representative of mean PCB concentrations in the river during the low flow conditions sampled.

PCB concentrations in Thompson Island Pool

Samples were collected weekly at Thompson Island Dam (HRM 188.5) to evaluate the water column concentrations of PCBs in Thompson Island Pool, the first pooled area downstream of the remnant deposits. Additional studies conducted in 1996 investigated the representativeness of data collected at the weekly sampling station (TIP transect sampling) and potential source(s) of anomalous PCB loading in Thompson Island Pool (TIP time of travel surveys; O'Brien & Gere 1998).

Methods and materials

Samples were collected at the west dam abutment of the west channel at Thompson Island Dam (HRM 188.5) along with each round of PCRDMP sampling conducted in 1996 (Figure B-8). In addition, two rounds each of transect sampling and time of travel surveys were conducted in 1996, as described in the *1996-1997 Thompson Island Pool Studies Data Summary Report* (O'Brien & Gere 1998).

Sample collection at the HRM 188.5 sampling station was conducted according to the methods described in the PCRDMP field sampling plan and addendum, QAPP, and health and safety plan (O'Brien & Gere 1992a,b, c; 1996). Samples were analyzed for total PCBs by Method NEA608CAP (NEA 1990) and for TSS by USEPA Method 160.2 (USEPA 1983).

Results and discussion

PCB concentrations

PCB concentrations in surface water samples collected at Thompson Island Dam during 1996 ranged from 13 to 271 ng/l (Table B-1, Figures B-9 and B-10). Seasonal trends occur in Thompson Island Pool water column PCB concentrations. In 1996, water column concentrations during winter decreased to near the detection limit with occasional increases occurring during spring high flow period (Figure B-11). Elevated concentrations of PCBs occurred during the summer low flow period followed by decreased water column concentrations in the fall (Figures B-10 and B-11). Results of transect sampling exposed uncertainties in the accuracy of data collected at Thompson Island Dam for representing water column PCB concentration discharge from the pool (O'Brien & Gere 1998).

Results of 1996 surface water sampling in Thompson Island Pool are consistent with previous monitoring that identified anomalous loading of PCBs to this region of the river (Table B-1, Figures B-10 and B-11). Similar patterns have been observed between 1993 and 1995 (Figures B-9 and B-10). Decreases in surface water concentrations have occurred since the 1991 loading event attributed to the Bakers Falls source(s) and subsequent remediation of the source(s) in 1993 (Figure B-12, Appendix A, HydroQual, Inc. 1995). Remediation of the Bakers Falls source(s) is ongoing (Dames & Moore 1997a,b).

PCB mass transport

Qualitative evaluation of PCB mass transport at HRM 188.5 during the summer low flow period shows a decrease in 1995 and 1996 in water column PCBs from that measured in previous years (Figure B-13). However, an increase in annual mass transport of PCBs in 1996 from 1995 is attributed to the higher average flow in 1996 since PCB concentrations in 1996 had actually decreased from the PCB concentrations observed in 1995 (Figure B-13).

Mass transport estimates comparing data collected at the routine monitoring station with data collected at the TIP transect indicated that data collected at the routine monitoring station were approximately 75% higher (O'Brien & Gere 1998). These results were unexpected since sampling was performed based on time of travel to sample the same parcel of water as it traveled downstream. The reasons for the observed differences are unclear. Results of the transect sampling events suggest that mean PCB concentrations and mass transport estimates may be biased high at the routine monitoring station compared to overall mass loading from Thompson Island Pool. Additional investigations were conducted in 1997 to evaluate this phenomenon further (O'Brien & Gere 1998). In October 1997, a water column monitoring station located in the west channel, approximately 200 feet downstream of the dam, was added to the weekly monitoring program (General Electric 1997).

Comparison of PCB, TSS, and flow results

TSS concentrations ranged from less than 1.0 to 14 mg/l (Table B-1, General Electric 1996). TSS concentrations measured at the HRM 188.5 sampling station are generally higher than concentrations measured upstream at HRM 194.2 (Table B-1). Two tributaries, Snook Kill and Moses Kill, are sources of TSS loading to the Thompson Island Pool, particularly during localized runoff events. An investigation of TSS increases in the Thompson Island Pool was conducted in 1997 (O'Brien & Gere 1998).

Flow and TSS monitoring at HRM 188.5 did not provide evidence of increased PCB concentrations due to bed scouring in the Thompson Island Pool region of the river. Under such circumstances it is anticipated that elevated PCB concentrations would be correlated with elevated TSS and/or flow. Correlations of PCBs with these parameters are not evident from the results of sampling at HRM 188.5 (Figure B-14). However, a moderate correlation of flow and TSS (r^2 = 0.37) was observed similar to the correlation observed at Fort Edward (Section 4.5). Tributary sediment loading may be responsible for TSS increases observed (Figure B-14).

PCB composition
PCB composition observed in 1996 generally resembled altered Aroclor 1242[1] (Table B-1 and Figures B-15 and B-16). However, during periods of high flow the PCB composition temporarily shifts to resemble a mixture of altered and unaltered Aroclor 1242. The unaltered fraction is similar to the PCB composition of the Bakers Falls source(s) These observations are consistent with trends observed in previous years since the September 1991 PCB loading event (HydroQual, Inc. 1995). The typical altered Aroclor 1242 pattern observed in Thompson Island Pool consists of increased mono- and di-chlorinated congeners, with a decreased higher-chlorinated congeners compared to a commercial Aroclor 1242 mixture (Appendix A). At high flows, the composition shift increases the proportion of more highly chlorinated congeners such as those found in Aroclor 1242 (HydroQual, Inc. 1995).

Evaluation of samples analyzed for PCBs by different analytical methods

Water column data generated by different PCB analytical methods were examined to evaluate the comparability of the data.

Methods and materials
Seven rounds of split samples collected at sampling stations HRM 197.0, HRM 194.2, and HRM 188.5 were analyzed by capillary column NEA608CAP (NEA 1990) as required by the PCRDMP and also by USEPA Method 8081 (USEPA 1986). The results of these analyses provide an opportunity to evaluate PCB analytical data obtained by two sampling methods.

Results and discussion
Results of split sample analyses indicated that total PCB concentrations from both methods were comparable for PCB compositions that resembled unaltered Aroclor 1242 such as those typically found in the remnant deposit

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[1] Detailed evaluation of PCB composition is limited to PCB concentrations greater than the PQL (44 ng/l) due to uncertainties in pattern recognition at lower concentrations (Appendix A).

region of the river (Table B-6). Although the data are within quality control criteria for comparability, subtle differences may exist that could impact data uses such a comparability of mass estimates from different analytical methods.

In contrast, results of split samples with PCB compositions resembling altered Aroclor 1242 demonstrated that samples analyzed by Method 8081 (Table B-6) were biased high. This difference is due to limitations of Method 8081, which uses reference peaks of commercial Aroclor mixtures. The reference peaks may be altered in environmental samples leading to PCB quantification inaccuracies.

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Appendix B - Tables

Table B-1. *1996 PCRDMP data including Plunge Pool/Boat Launch and Thompson Island Dam data(1).*

Date Collected	Location (2)	Comments	Instant. Flow (3) (cfs)	Daily Flow (3) (cfs)	Temp. (Celsius)	TSS (mg/l)	Total PCB (ng/l)	Homolog Distribution (weight percent) Mono	Di	Tri	Tetra	Penta	Hexa	Hepta
19-Jan-96	HRM 197.0	-	5,200	5,080	3	1.5	<11	-	-	-	-	-	-	-
	HRM 196.8	-				2.1	<11	-	-	-	-	-	-	-
	HRM 194.2	P				2.1	23	0.0	16.3	32.3	31.4	16.8	3.2	0.0
	HRM 188.5	P				2.3	30	11.0	37.8	28.0	15.4	6.3	1.5	0.0
	HRM 197.0	BD				1.8	<11	-	-	-	-	-	-	-
24-Jan-96	HRM 197.0	UJ	10,700	8,550	2	2.2	<11	-	-	-	-	-	-	-
	HRM 196.8	P,J				20	24	0.0	5.4	31.6	46.8	13.6	2.6	0.0
	HRM 194.2	P,J				5.0	29	0.0	2.9	29.7	38.9	21.8	6.7	0.0
	HRM 188.5	J				5.1	232	1.4	14.0	44.9	30.5	7.4	1.8	0.0
	HRM 188.5	BD,P,J				5.4	27	0.0	34.2	31.3	25.2	7.6	1.8	0.0
	HRM 188.5	Archive,P,R				-	25	0.0	26.3	38.2	24.8	8.7	2.1	0.0
31-Jan-96	HRM 197.0	-	11,600	8,660	0	1.8	<11	-	-	-	-	-	-	-
	HRM 196.8	-				1.3	<11	-	-	-	-	-	-	-
	HRM 194.2	P				1.8	11	0.0	18.6	29.3	25.3	20.5	6.2	0.0
	HRM 188.5	P				1.7	26	11.8	26.6	29.4	26.5	5.5	0.3	0.0
	HRM 196.8	BD				2.2	<11	-	-	-	-	-	-	-
07-Feb-96	HRM 197.0	-	8,600	7,790	0	<1.0	<11	-	-	-	-	-	-	-
	HRM 196.8	-				<1.0	<11	-	-	-	-	-	-	-
	HRM 194.2	P				<1.0	11	0.0	8.6	30.4	37.1	19.1	4.8	0.0
	HRM 188.5	P				<1.0	13	0.0	23.8	34.7	24.8	13.2	3.5	0.0
	HRM 188.5	BD,P				<1.0	13	0.0	25.2	34.2	24.3	12.8	3.5	0.0
14-Feb-96	HRM 197.0	-	5,100	6,000	0	<1.0	<11	-	-	-	-	-	-	-
	HRM 196.8	-				<1.0	<11	-	-	-	-	-	-	-
	HRM 194.2	-				<1.0	<11	-	-	-	-	-	-	-
	HRM 188.5	P				<1.0	17	6.3	29.6	31.5	20.9	9.4	2.3	0.0
	HRM 194.2	BD				<1.0	<11	-	-	-	-	-	-	-
21-Feb-96	HRM 197.0	-	6,400	6,310	2	<1.0	<11	-	-	-	-	-	-	-
	HRM 196.8	-				<1.0	<11	-	-	-	-	-	-	-
	HRM 194.2	UJ				<1.0	<11	-	-	-	-	-	-	-
	HRM 188.5	P				2.6	34	7.2	24.2	35.9	22.2	8.7	1.8	0.0
	HRM 197.0	BD				<1.0	<11	-	-	-	-	-	-	-

Table B-1. *1996 PCRDMP data including Plunge Pool/Boat Launch and Thompson Island Dam data(1).*

Date Collected	Location (2)	Comments	Instant. Flow (3) (cfs)	Daily Flow (3) (cfs)	Temp. (Celsius)	TSS (mg/l)	Total PCB (ng/l)	Homolog Distribution (weight percent) Mono	Di	Tri	Tetra	Penta	Hexa	Hepta
28-Feb-96	HRM 197.0	-	7,100	5,980	2	1.9	<11	-	-	-	-	-	-	-
	HRM 196.8	-				2.2	<11	-	-	-	-	-	-	-
	HRM 194.2	-				2.4	<11	-	-	-	-	-	-	-
	HRM 188.5	P				3.4	24	0.0	27.6	28.4	26.6	11.7	5.7	0.0
	HRM 196.8	BD				1.9	<11	-	-	-	-	-	-	-
06-Mar-96	HRM 197.0	-	5,900	6,160	1	<1.0	<11	-	-	-	-	-	-	-
	HRM 196.8	-				<1.0	<11	-	-	-	-	-	-	-
	HRM 194.2	-				<1.0	<11	-	-	-	-	-	-	-
	HRM 188.5	-				11	143	5.6	24.9	33.2	26.0	8.4	1.9	0.0
	HRM 194.2	BD				<1.0	<11	-	-	-	-	-	-	-
13-Mar-96	HRM 197.0	-	6,200	5,590	2	1.4	<11	-	-	-	-	-	-	-
	HRM 196.8	-				1.4	<11	-	-	-	-	-	-	-
	HRM 194.2	-				2.5	<11	-	-	-	-	-	-	-
	HRM 188.5	P				2.3	19	18.1	17.5	34.4	17.7	9.7	2.7	0.0
	HRM 197.0	BD				1.6	<11	-	-	-	-	-	-	-
21-Mar-96	HRM 197.0	UJ	6,600	6,330	3	1.3	<11	-	-	-	-	-	-	-
	HRM 196.8	UJ				1.4	<11	-	-	-	-	-	-	-
	HRM 194.2	UJ				1.6	<11	-	-	-	-	-	-	-
	HRM 188.5	P,J				4.4	18	0.0	31.4	33.2	21.4	12.2	1.9	0.0
	HRM 196.8	BD,UJ				1.2	<11	-	-	-	-	-	-	-
28-Mar-96	HRM 197.0	UJ	6,700	5,990	5	1.3	<11	-	-	-	-	-	-	-
	HRM 196.8	UJ				1.8	<11	-	-	-	-	-	-	-
	HRM 194.2	P,UJ				2.2	11	0.0	25.9	29.6	23.7	16.2	4.6	0.0
	HRM 188.5	P,J				2.3	29	35.6	30.2	23.2	9.5	1.4	0.0	0.0
	HRM 194.2	BD,P,UJ				2.1	12	0.0	22.9	27.3	25.9	19.1	4.9	0.0
03-Apr-96	HRM 197.0	-	7,400	6,020	7	1.1	<11	-	-	-	-	-	-	-
	HRM 196.8	-				<1.0	<11	-	-	-	-	-	-	-
	HRM 194.2	-				1.4	<11	-	-	-	-	-	-	-
	HRM 188.5	P				1.8	17	0.0	26.9	38.9	23.0	9.5	1.7	0.0
	HRM 188.5	BD,P				1.2	17	0.0	27.4	36.0	26.2	8.8	1.6	0.0
10-Apr-96	HRM 197.0	-	5,600	4,220	6	1.2	<11	-	-	-	-	-	-	-
	HRM 196.8	UJ				1.1	<11	-	-	-	-	-	-	-
	HRM 194.2	P,J				<1.0	13	0.0	5.8	24.7	44.8	21.4	3.4	0.0
	HRM 188.5	J				2.5	60	1.8	18.9	35.6	30.7	10.0	3.0	0.0
	HRM 197.0	BD				1.1	<11	-	-	-	-	-	-	-

Table B-1. *1996 PCRDMP data including Plunge Pool/Boat Launch and Thompson Island Dam data(1).*

Date Collected	Location (2)	Comments	Instant. Flow (3) (cfs)	Daily Flow (3) (cfs)	Temp. (Celsius)	TSS (mg/l)	Total PCB (ng/l)	Homolog Distribution (weight percent) Mono	Di	Tri	Tetra	Penta	Hexa	Hepta
17-Apr-96	HRM 197.0	-	19,300	18,700	6	9.6	<11	-	-	-	-	-	-	-
	HRM 196.8	-				11.0	<11	-	-	-	-	-	-	-
	HRM 194.2	P				8.7	13	0.0	5.6	41.8	31.7	17.4	3.5	0.0
	HRM 188.5	-				20.0	62	7.4	22.5	33.8	26.0	9.2	1.1	0.0
	HRM 196.8	BD				12.0	<11	-	-	-	-	-	-	-
24-Apr-96	HRM 197.0	-	24,200	23,400	9	7.0	<11	-	-	-	-	-	-	-
	HRM 196.8	-				12.0	<11	-	-	-	-	-	-	-
	HRM 194.2	P				7.2	17	0.0	4.9	40.9	38.3	13.6	2.3	0.0
	HRM 188.5	-				13.0	115	7.6	17.6	36.0	32.3	5.5	1.1	0.0
	HRM 194.2	BD,P				7.0	18	0.0	5.0	40.4	38.2	13.8	2.5	0.0
01-May-96	HRM 197.0	-	21,600	20,100	10	2.3	<11	-	-	-	-	-	-	-
	HRM 196.8	-				3.9	<11	-	-	-	-	-	-	-
	HRM 194.2	P				3.5	14	0.0	19.4	35.3	28.8	14.2	2.4	0.0
	HRM 188.5	-				5.3	56	6.3	27.9	34.1	22.8	7.5	1.5	0.0
	HRM 188.5	BD				5.6	56	6.3	27.1	33.9	23.3	7.9	1.5	0.0
08-May-96	HRM 197.0	-	15,600	13,500	11	1.3	<11	-	-	-	-	-	-	-
	HRM 196.8	-				1.9	<11	-	-	-	-	-	-	-
	HRM 194.2	-				1.6	<11	-	-	-	-	-	-	-
	HRM 188.5	-				2.1	46	8.7	34.7	29.6	19.2	6.3	1.4	0.0
	HRM 197.0	BD				1.7	<11	-	-	-	-	-	-	-
15-May-96	HRM 197.0	-	-	19,900	12	2.0	<11	-	-	-	-	-	-	-
	HRM 196.8	-				2.8	<11	-	-	-	-	-	-	-
	HRM 194.2	P				2.4	17	0.0	13.3	40.4	31.3	12.2	2.8	0.0
	HRM 188.5	P				3.1	21	0.0	10.1	41.2	35.7	11.4	1.6	0.0
	HRM 196.8	BD				2.9	<11	-	-	-	-	-	-	-
22-May-96	HRM 197.0	-	-	13,300	16	1.2	<11	-	-	-	-	-	-	-
	HRM 196.8	-				2.0	<11	-	-	-	-	-	-	-
	HRM 194.2	-				2.0	<11	-	-	-	-	-	-	-
	HRM 188.5	-				2.4	67	11.8	36.2	29.2	16.6	5.4	0.8	0.0
	HRM 194.2	BD				1.9	<11	-	-	-	-	-	-	-
29-May-96	HRM 197.0	-	-	7,000e	15	1.5	<11	-	-	-	-	-	-	-
	HRM 196.8	-				1.6	<11	-	-	-	-	-	-	-
	HRM 194.2	P				2.3	14	0.0	15.0	32.9	37.3	11.7	3.1	0.0
	HRM 188.5	-				2.2	132	14.0	35.9	27.6	16.7	4.9	1.0	0.0
	HRM 188.5	BD				2.1	129	14.4	34.9	27.4	17.2	5.0	1.1	0.0

Table B-1. *1996 PCRDMP data including Plunge Pool/Boat Launch and Thompson Island Dam data(1).*

Date Collected	Location (2)	Comments	Instant. Flow (3) (cfs)	Daily Flow (3) (cfs)	Temp. (Celsius)	TSS (mg/l)	Total PCB (ng/l)	Homolog Distribution (weight percent)						
								Mono	Di	Tri	Tetra	Penta	Hexa	Hepta
05-Jun-96	HRM 197.0	-	-	4,100e	20	2.7	<11	-	-	-	-	-	-	-
	HRM 196.8	-				2.9	<11	-	-	-	-	-	-	-
	HRM 194.2	P				3.4	19	0.0	17.7	30.4	32.1	16.2	3.6	0.0
	HRM 188.5	-				4.8	271	15.3	34.6	27.9	15.8	5.4	1.0	0.0
	HRM 197.0	BD				2.3	<11	-	-	-	-	-	-	-
12-Jun-96	HRM 197.0	-	9,000	7,850	21	4.1	<11	-	-	-	-	-	-	-
	HRM 196.8	-				4.0	<11	-	-	-	-	-	-	-
	HRM 194.2	P				4.2	17	0.0	18.7	32.1	28.9	17.3	3.0	0.0
	HRM 188.5	-				4.7	131	14.0	31.7	30.9	16.3	5.4	1.7	0.0
	HRM 196.8	BD				3.9	<11	-	-	-	-	-	-	-
19-Jun-96	HRM 197.0	-	5,600	5,930	22	1.9	<11	-	-	-	-	-	-	-
	HRM 196.8	-				2.1	<11	-	-	-	-	-	-	-
	HRM 194.2	P				2.0	21	0.0	22.2	39.9	24.0	11.8	2.1	0.0
	HRM 188.5	-				3.3	163	15.4	32.9	29.8	15.4	5.1	1.3	0.0
	HRM 194.2	BD,P				1.9	20	0.0	22.6	41.7	23.8	9.8	2.2	0.0
26-Jun-96	HRM 197.0	-	3,900	4,470	21	1.7	<11	-	-	-	-	-	-	-
	HRM 196.8	-				2.7	<11	-	-	-	-	-	-	-
	HRM 194.2	P				1.6	31	0.0	12.8	47.0	28.3	10.0	1.8	0.0
	HRM 188.5	-				2.7	232	14.5	29.1	31.4	17.8	5.9	1.2	0.0
	HRM 188.5	BD				NC	223	14.6	28.8	30.6	18.5	6.2	1.3	0.0
01-Jul-96	HRM 197.0	UJ	2,500	3,190	23	1.9	<11	-	-	-	-	-	-	-
	HRM 196.8	UJ				2.4	<11	-	-	-	-	-	-	-
	HRM 194.2	P,J				2.1	15	0.0	13.9	36.0	34.1	13.2	2.8	0.0
	HRM 188.5	J				3.2	112	12.2	36.5	28.9	17.3	4.6	0.7	0.0
	HRM 197.0	BD,UJ				1.8	<11	-	-	-	-	-	-	-
10-Jul-96	HRM 197.0	UJ	2,700	2,910	23	<1.0	<11	-	-	-	-	-	-	-
	HRM 196.8	UJ				1.0	<11	-	-	-	-	-	-	-
	HRM 194.2	P,J				<1.0	12	0.0	4.0	37.6	40.8	14.6	3.0	0.0
	HRM 188.5	J				1.5	172	14.3	36.5	29.5	14.6	4.4	0.7	0.0
	HRM 188.5	BD,J				1.4	164	14.2	36.1	29.3	15.4	4.2	0.8	0.0
	Plunge Pool	DM,UJ				1.0	65	0.0	19.1	52.1	22.3	5.9	0.6	0.0
	RB 960710	DMEQBL				-	66	0.0	24.0	51.6	18.3	5.4	0.8	0.0

Table B-1. *1996 PCRDMP data including Plunge Pool/Boat Launch and Thompson Island Dam data(1).*

Date Collected	Location (2)	Comments	Instant. Flow (3) (cfs)	Daily Flow (3) (cfs)	Temp. (Celsius)	TSS (mg/l)	Total PCB (ng/l)	Homolog Distribution (weight percent) Mono	Di	Tri	Tetra	Penta	Hexa	Hepta
17-Jul-96	HRM 197.0	UJ	3,900	5,030	24	1.4	<11	-	-	-	-	-	-	-
	HRM 196.8	UJ				3.3	<11	-	-	-	-	-	-	-
	HRM 194.2	P,J				2.8	20	0.0	17.6	35.5	31.8	13.0	2.0	0.0
	HRM 188.5	J				1.9	118	18.1	35.9	26.3	14.5	4.2	1.0	0.0
	HRM 196.8	J,BD				2.3	321	1.1	6.8	46.6	37.6	6.9	1.0	0.0
	HRM 196.8	R,BD Archive				-	<11	-	-	-	-	-	-	-
	Plunge Pool	DM				5.3	878	0.0	11.0	54.2	30.3	4.0	0.5	0.0
	RB 960717	DMEQBL				-	73	0.0	26.0	49.8	16.7	5.3	2.2	0.0
24-Jul-96	HRM 197.0	-	4,700	3,770	22	2.4	<11	-	-	-	-	-	-	-
	HRM 196.8	-				2.7	<11	-	-	-	-	-	-	-
	HRM 194.2	P				3.2	17	0.0	20.5	29.4	36.1	11.6	2.5	0.0
	HRM 188.5	-				2.6	73	9.2	37.4	30.2	17.0	5.4	0.8	0.0
	HRM 194.2	BD,P				2.1	21	0.0	17.1	27.5	39.5	13.1	2.8	0.0
	Plunge Pool	DM,U				NC	46	0.0	12.1	35.7	34.8	14.2	3.1	0.0
	RB 960724	DMEQBL,P				-	36	0.0	20.5	50.5	22.3	5.7	1.0	0.0
31-Jul-96	HRM 197.0	-	3,000	3,400	22	1.6	<11	-	-	-	-	-	-	-
	HRM 196.8	-				1.8	<11	-	-	-	-	-	-	-
	HRM 194.2	-				1.8	56	0.0	3.0	44.0	41.0	10.2	1.9	0.0
	HRM 194.2	8081,P				-	26	-	-	-	-	-	-	-
	HRM 188.5	-				2.8	77	0.0	44.1	31.3	16.7	6.5	1.4	0.0
	HRM 188.5	8081,AL				-	68	-	-	-	-	-	-	-
	HRM 197.0	BD				1.6	<11	-	-	-	-	-	-	-
	Plunge Pool	DM				2.5	1,450	0.0	6.9	46.8	36.0	8.6	1.7	0.1
	Plunge Pool	DM-8081				-	462	-	-	-	-	-	-	-
	RB 960731	DMEQBL-8081,P				-	25	-	-	-	-	-	-	-
02-Aug-96	HRM 197.0	8081	3,200	3,580	NC	-	<11	-	-	-	-	-	-	-
	HRM 194.2	8081				-	<11	-	-	-	-	-	-	-
	HRM 188.5	8081,AL				-	114	-	-	-	-	-	-	-
	Plunge Pool	DM-8081				1.9	48	-	-	-	-	-	-	-
05-Aug-96	HRM 197.0	8081	3,700	3,590	NC	-	<11	-	-	-	-	-	-	-
	HRM 194.2	8081,P				-	21	-	-	-	-	-	-	-
	HRM 188.5	8081,AL				-	227	-	-	-	-	-	-	-
	Plunge Pool	DM-8081				-	312	-	-	-	-	-	-	-
	RB 960805	DMEQBL-8081,P				-	20	-	-	-	-	-	-	-
	TB 960805	DMTBL-8081,P				-	12	-	-	-	-	-	-	-

Table B-1. *1996 PCRDMP data including Plunge Pool/Boat Launch and Thompson Island Dam data(1).*

Date Collected	Location (2)	Comments	Instant. Flow (3) (cfs)	Daily Flow (3) (cfs)	Temp. (Celsius)	TSS (mg/l)	Total PCB (ng/l)	Homolog Distribution (weight percent) Mono	Di	Tri	Tetra	Penta	Hexa	Hepta
07-Aug-96	HRM 197.0	-	4,700	3,600	24	1.5	<11	-	-	-	-	-	-	-
	HRM 197.0	8081				-	<11	-	-	-	-	-	-	-
	HRM 196.8	-				2.4	341	0.0	9.2	50.0	32.8	6.9	1.2	0.0
	HRM 194.2	P				1.8	25	0.0	24.1	33.4	24.5	13.7	4.3	0.0
	HRM 194.2	8081,P				-	21	-	-	-	-	-	-	-
	HRM 188.5	-				1.5	129	11.7	39.7	29.8	14.7	3.3	0.8	0.0
	HRM 188.5	8081,AL				-	173	-	-	-	-	-	-	-
	HRM 188.5	BD				1.7	118	13.5	35.5	31.3	15.7	3.3	0.8	0.0
	Plunge Pool	-				1.5	88	0.0	10.6	46.2	34.3	7.3	1.5	0.0
	Plunge Pool	DM-8081				-	46	-	-	-	-	-	-	-
09-Aug-96	HRM 197.0	8081	3,400	3,450	24	-	<11	-	-	-	-	-	-	-
	HRM 194.2	8081				-	80	-	-	-	-	-	-	-
	HRM 188.5	8081,AL				-	137	-	-	-	-	-	-	-
	Plunge Pool	DM-8081				-	179	-	-	-	-	-	-	-
13-Aug-96	HRM 197.0	8081	2,400	2,810	23	-	<11	-	-	-	-	-	-	-
	HRM 194.2	8081				-	54	-	-	-	-	-	-	-
	HRM 188.5	8081,AL				-	145	-	-	-	-	-	-	-
	Plunge Pool	DM-8081				1.5	149	-	-	-	-	-	-	-
14-Aug-96	HRM 197.0	-	3,400	3,450	24	1.1	<11	-	-	-	-	-	-	-
	HRM 196.8	-				1.5	<11	-	-	-	-	-	-	-
	HRM 194.2	P				1.4	26	0.0	19.9	39.1	27.8	10.4	2.8	0.0
	HRM 194.2	8081,P				-	25	-	-	-	-	-	-	-
	HRM 188.5	-				1.1	85	11.4	38.8	30.6	15.4	3.1	0.7	0.0
	HRM 188.5	8081,AL				1.0	155	-	-	-	-	-	-	-
	HRM 194.2	BD, P				1.1	24	0.0	19.9	41.0	28.2	9.7	1.3	0.0
	Plunge Pool	-				1.0	103	0.0	8.3	51.6	33.6	5.4	1.1	0.0
	Plunge Pool	DM-8081				1.0	110	-	-	-	-	-	-	-
20-Aug-96	HRM 197.0	-	3,100	3,290	24	1.2	<11	-	-	-	-	-	-	-
	HRM 197.0	8081				-	<11	-	-	-	-	-	-	-
	HRM 196.8	-				1.2	<11	-	-	-	-	-	-	-
	HRM 194.2	P				1.4	19	0.0	17.2	37.5	30.5	12.3	2.5	0.0
	HRM 194.2	8081,P				-	16	-	-	-	-	-	-	-
	HRM 188.5	-				1.4	150	12.7	38.9	29.7	13.5	3.9	1.3	0.0
	HRM 188.5	8081,AL				-	176	-	-	-	-	-	-	-
	HRM 197.0	BD				1.6	<11	-	-	-	-	-	-	-
	Plunge Pool	DM-8081,P				-	35	-	-	-	-	-	-	-

Table B-1. *1996 PCRDMP data including Plunge Pool/Boat Launch and Thompson Island Dam data(1).*

Date Collected	Location (2)	Comments	Instant. Flow (3) (cfs)	Daily Flow (3) (cfs)	Temp. (Celsius)	TSS (mg/l)	Total PCB (ng/l)	Homolog Distribution (weight percent) Mono	Di	Tri	Tetra	Penta	Hexa	Hepta
22-Aug-96	HRM 197.0	8081	2,900	3,230	24	-	<11	-	-	-	-	-	-	-
	HRM 194.2	8081 ,P				-	14	-	-	-	-	-	-	-
	HRM 188.5	8081,AL				-	184	-	-	-	-	-	-	-
	Plunge Pool	DM-8081,P				1.8	23	-	-	-	-	-	-	-
28-Aug-96	HRM 197.0	-	4,000	3,280	24	1.3	<11	-	-	-	-	-	-	-
	HRM 196.8	-				2.1	<11	-	-	-	-	-	-	-
	HRM 194.2	P				1.9	14	0.0	21.8	32.3	28.7	13.8	3.4	0.0
	HRM 188.5	-				1.1	113	14.8	35.7	30.5	14.1	4.2	0.6	0.0
	HRM 196.8	BD				2.1	<11	-	-	-	-	-	-	-
	Plunge Pool	P				<1.0	12	0.0	14.8	41.9	27.5	11.4	4.4	0.0
	Plunge Pool	DM-8081				-	<11	-	-	-	-	-	-	-
04-Sep-96	HRM 197.0	-	4,000	3,400	24	1.4	<11	-	-	-	-	-	-	-
	HRM 196.8	P				2.0	13	0.0	27.9	33.0	20.6	14.0	4.5	0.0
	HRM 194.2	P				2.2	23	0.0	17.6	39.4	31.3	8.9	2.9	0.0
	HRM 188.5	-				<1.0	104	7.5	34.9	30.1	17.7	7.8	2.1	0.0
	HRM 188.5	8081,AL				-	108	-	-	-	-	-	-	-
	HRM 188.5	BD				1.2	102	8.8	36.7	30.9	17.9	5.0	0.8	0.0
	Plunge Pool	P				2.2	26	0.0	16.6	41.1	28.7	10.5	3.2	0.0
06-Sep-96	HRM 197.0	8081	2,000	3,260	24	-	<11	-	-	-	-	-	-	-
	HRM 194.2	8081				-	<11	-	-	-	-	-	-	-
	HRM 188.5	8081,AL				-	114	-	-	-	-	-	-	-
	Plunge Pool	DM-8081				1.4	<11	-	-	-	-	-	-	-
10-Sep-96	HRM 197.0	-	3,500	3,860	23	1.6	<11	-	-	-	-	-	-	-
	HRM 197.0	8081				-	<11	-	-	-	-	-	-	-
	HRM 196.8	-				2.3	<11	-	-	-	-	-	-	-
	HRM 194.2	P				2.0	17	0.0	12.2	39.0	35.7	9.5	3.6	0.0
	HRM 194.2	8081,P				-	19	-	-	-	-	-	-	-
	HRM 188.5	-				2.0	55	6.8	35.5	32.8	17.0	6.6	1.4	0.0
	HRM 188.5	8081,AL				-	91	-	-	-	-	-	-	-
	HRM 197.0	BD				1.7	<11	-	-	-	-	-	-	-
	Plunge Pool	DM				4.3	1,453	0.0	6.4	49.4	36.3	6.8	1.1	0.0
	Plunge Pool	DM-8081				-	45	-	-	-	-	-	-	-

Table B-1. *1996 PCRDMP data including Plunge Pool/Boat Launch and Thompson Island Dam data(1).*

Date Collected	Location (2)	Comments	Instant. Flow (3) (cfs)	Daily Flow (3) (cfs)	Temp. (Celsius)	TSS (mg/l)	Total PCB (ng/l)	Homolog Distribution (weight percent) Mono	Di	Tri	Tetra	Penta	Hexa	Hepta
13-Sep-96	HRM 197.0	8081	2,800	2,180		-	<11	-	-	-	-	-	-	-
	HRM 194.2	8081				-	<11	-	-	-	-	-	-	-
	HRM 188.5	8081,AL				-	125	-	-	-	-	-	-	-
	Plunge Pool	DM-8081,P				-	16	-	-	-	-	-	-	-
17-Sep-96	Plunge Pool	P	1,400	2,600	2600	2.4	37	0.0	13.6	36.1	31.8	14.3	4.3	0.0
	Plunge Pool	DM-8081,P				2.4	37	-	-	-	-	-	-	-
18-Sep-96	HRM 197.0	-	4,700	3,380	19	3.1	<11	-	-	-	-	-	-	-
	HRM 194.2	-				3.3	<11	-	-	-	-	-	-	-
	HRM 188.5	-				2.6	65	10.6	40.3	30.5	14.2	3.9	0.6	0.0
	HRM 194.2	BD				2.8	<11	-	-	-	-	-	-	-
24-Sep-96	HRM 197.0	-	2,200	3,100	17	1.7	<11	-	-	-	-	-	-	-
25-Sep-96	HRM 197.0	-	2,800	3,510	17	1.2	<11	-	-	-	-	-	-	-
	HRM 194.2	-				1.4	<11	-	-	-	-	-	-	-
	HRM 188.5	-				1.0	53	11.7	48.5	22.4	13.0	3.7	0.6	0.0
	HRM 194.2	BD				<1.0	<11	-	-	-	-	-	-	-
	Plunge Pool	DM,P				2.0	34	0.0	11.8	49.4	30.5	7.1	1.3	0.0
02-Oct-96	HRM 197.0	-	-	3,560	17	<1.0	<11	-	-	-	-	-	-	-
	HRM 194.2	-				1.2	<11	-	-	-	-	-	-	-
	HRM 188.5	-				1.1	58	0.0	67.7	19.3	9.7	2.7	0.7	0.0
	HRM 188.5	BD				1.0	55	0.0	63.2	22.4	10.2	3.5	0.8	0.0
	Plunge Pool	DM,P				<1.0	34	0.0	43.1	33.2	17.3	4.4	2.0	0.0
09-Oct-96	HRM 197.0	-	1,700	2,980	NC	<1.0	<11	-	-	-	-	-	-	-
	HRM 194.2	-				<1.0	<11	-	-	-	-	-	-	-
	HRM 188.5	-				<1.0	54	17.8	51.9	17.0	10.5	2.4	0.4	0.0
	HRM 197.0	BD				<1.0	<11	-	-	-	-	-	-	-
	Plunge Pool	DM				<1.0	<11	-	-	-	-	-	-	-
16-Oct-96	HRM 197.0	-	2,200	3,260	NC	1.9	<11	-	-	-	-	-	-	-
	HRM 194.2	-				2.6	<11	-	-	-	-	-	-	-
	HRM 188.5	-				1.4	75	30.7	42.1	16.4	7.0	3.2	0.6	0.0
	HRM 188.5	BD				1.8	79	31.1	43.5	14.4	7.0	3.4	0.6	0.0
	Plunge Pool	DM,P				2.3	27	0.0	22.5	41.0	24.5	10.3	1.8	0.0

321756

Table B-1. *1996 PCRDMP data including Plunge Pool/Boat Launch and Thompson Island Dam data(1).*

Date Collected	Location (2)	Comments	Instant. Flow (3) (cfs)	Daily Flow (3) (cfs)	Temp. (Celsius)	TSS (mg/l)	Total PCB (ng/l)	Homolog Distribution (weight percent) Mono	Di	Tri	Tetra	Penta	Hexa	Hepta
23-Oct-96	HRM 197.0	-	4,300	4,120	11	1.5	<11	-	-	-	-	-	-	-
	HRM 194.2	P				1.4	13	0.0	27.5	28.0	28.0	12.3	4.1	0.0
	HRM 188.5	-				1.7	82	31.2	40.6	15.8	7.9	3.8	0.7	0.0
	HRM 188.5	8081,AL				-	119	-	-	-	-	-	-	-
	HRM 194.2	BD,P				1.7	13	0.0	32.9	30.1	18.3	15.2	3.5	0.0
	Plunge Pool	DM,P				1.6	18	0.0	16.5	45.6	27.8	8.4	1.7	0.0
29-Oct-96	HRM 197.0	-	2,400	3,000	11	2.0	<11	-	-	-	-	-	-	-
	HRM 194.2	-				1.8	<11	-	-	-	-	-	-	-
	HRM 188.5	-				2.9	123	21.3	38.2	22.4	12.4	5.1	0.6	0.0
	HRM 188.5	BD				2.8	125	20.1	40.8	21.3	12.2	5.0	0.7	0.0
	Plunge Pool	DM,P				1.9	19	15.4	36.8	28.4	15.7	3.8	0.0	0.0
06-Nov-96	HRM 197.0	-	1,300	3,160	9	1.8	<11	-	-	-	-	-	-	-
	HRM 194.2	-				2.2	<11	-	-	-	-	-	-	-
	HRM 188.5	-				2.1	62	30.1	42.0	15.4	7.4	4.7	0.5	0.0
	HRM 194.2	BD				2.1	<11	-	-	-	-	-	-	-
	Plunge Pool	DM,P				2.0	18	0.0	16.8	39.9	25.1	15.6	2.6	0.0
14-Nov-96	HRM 197.0	-	7,700	6,590	4	2.0	<11	-	-	-	-	-	-	-
	HRM 194.2	P				2.7	14	0.0	8.8	39.2	32.0	16.9	3.1	0.0
	HRM 188.5	P				2.9	43	16.1	35.3	25.8	13.8	7.9	1.1	0.0
	HRM 194.2	BD,P				2.5	14	0.0	7.8	37.9	32.3	18.1	4.0	0.0
	Plunge Pool	DM,P				2.2	18	0.0	7.8	37.7	26.9	24.1	3.6	0.0
20-Nov-96	HRM 197.0	-	7,600	7,580	5	1.9	<11	-	-	-	-	-	-	-
	HRM 194.2	P				2.5	12	0.0	20.5	30.2	22.9	23.4	3.0	0.0
	HRM 188.5	P				4.3	26	0.0	43.7	24.2	15.5	13.8	2.9	0.0
	HRM 188.5	BD,P				4.7	25	0.0	44.8	23.3	15.7	14.1	2.2	0.0
	Plunge Pool	DM,P				1.6	18	0.0	14.7	43.3	25.2	14.1	2.7	0.0
27-Nov-96	HRM 197.0	-	6,900	6,610	2	1.0	<11	-	-	-	-	-	-	-
	HRM 194.2	-				<1.0	<11	-	-	-	-	-	-	-
	HRM 188.5	P				4.0	44	15.3	33.7	26.5	15.6	7.5	1.5	0.0
	HRM 194.2	BD				1.0	<11	-	-	-	-	-	-	-
	Plunge Pool	DM,P				<1.0	12	0.0	25.1	38.2	19.5	13.5	3.8	0.0

321757

Table B-1. *1996 PCRDMP data including Plunge Pool/Boat Launch and Thompson Island Dam data(1).*

Date Collected	Location (2)	Comments	Instant. Flow (3) (cfs)	Daily Flow (3) (cfs)	Temp. (Celsius)	TSS (mg/l)	Total PCB (ng/l)	Homolog Distribution (weight percent) Mono	Di	Tri	Tetra	Penta	Hexa	Hepta
04-Dec-96	HRM 197.0	-	14,200	14,200	6	4.4	<11	-	-	-	-	-	-	-
	HRM 194.2	P				4.9	14	0.0	4.6	41.0	38.7	13.8	2.0	0.0
	HRM 188.5	P				6.7	23	0.0	25.4	40.2	19.1	12.9	2.4	0.0
	HRM 194.2	BD				4.6	<11	-	-	-	-	-	-	-
11-Dec-96	HRM 197.0	-	5,000	5,170	4	2.9	<11	-	-	-	-	-	-	-
	HRM 194.2	-				2.0	<11	-	-	-	-	-	-	-
	HRM 188.5	P				2.7	22	0.0	45.6	27.6	15.5	9.6	1.8	0.0
	HRM 188.5	BD,P				2.8	22	0.0	45.2	26.3	15.1	11.3	2.1	0.0
	Plunge Pool	DM,P				2.1	13	0.0	11.3	38.7	27.9	18.6	3.6	0.0
	Boat Launch	DM				1.8	121	0.0	18.0	47.3	28.6	5.4	0.8	0.0
18-Dec-96	HRM 197.0	-	9,900	10,100	5	1.4	<11	-	-	-	-	-	-	-
	HRM 194.2	-				1.8	<11	-	-	-	-	-	-	-
	HRM 188.5	P				2.2	20	0.0	4[illegible].7	24.9	17.9	13.3	2.2	0.0
	HRM 194.2	BD,P				1.6	<11	-		-	-	-	-	-
	Boat Launch	DM,P				1.6	18	0.0	10.5	53.4	28.1	8.0	0.0	0.0
23-Dec-96	HRM 197.0	-	9,300	9,510	1	1.5	<11	-	-	-	-	-	-	-
	HRM 194.2	-				1.9	<11	-	-	-	-	-	-	-
	HRM 188.5	P				2.3	15	0.0	38.2	27.7	17.8	12.7	3.7	0.0
	HRM 188.5	BD,P				2.3	15	0.0	34.6	28.5	20.4	13.1	3.3	0.0
	Boat Launch	DM,P				1.1	25	0.0	19.6	46.2	22.7	9.6	1.9	0.0
30-Dec-96	HRM 197.0	-	7,500	7,290	1	1.1	<11	-	-	-	-	-	-	-
	HRM 194.2	-				1.3	<11	-	-	-	-	-	-	-
	HRM 188.5	P				4.7	16	0.0	41.1	27.4	19.7	9.4	2.4	0.0
	HRM 194.2	BD				1.3	<11	-	-	-	-	-	-	-
	Boat Launch	DM,P				<1.0	35	0.0	9.0	44.2	37.0	8.5	1.4	0.0

Notes:

(1) Samples analyzed by capillary column using NEA Method 608CAP, except as noted. Samples analyzed by USEPA Method 8081 indicated by "8081". NEA Method 608CAP data have been corrected for analytical bias.

(2) HRM = Approximate Hudson River mile; HRM 0.0 is located at the Battery in New York City. Samples from location HRM 194.2 are a composite of west and east channels. Plunge Pool samples are collected from the plunge pool at Bakers Falls (approximate HRM 196.9). Boat Launch sample is collected near River Point 4A, off the northwest corner of the old Niagara Mohawk building (approximate HRM 196.9).

(3) River flows are presented as mean daily discharge and instantaneous unit discharge for each round of sampling. Mean daily flow data are published values, and unit discharge vlaues are preliminary from the Fort Edward gaging station (unit discharges last updated 01/10/97). Instantaneous flows correspond to flows recorded by the USGS during sampling at HRM 194.2; "e" designation indicates the value is estimated.

Table B-1. *1996 PCRDMP data including Plunge Pool/Boat Launch and Thompson Island Dam data(1).*

Notes: (cont.)

AL = Samples analyzed for total PCB by Method 8081 are reported as Aroclor 1242 except as noted by "AL" indicating altered PCB composition detected and quantified using Aroclors 1242 and 1221 for reference. Method 8081 is unable to quantify some altered congeners.

Archive = Archived samples collected on 1/24/96 and 7/17/96 were extracted outside of holding time (R; 2/19/96 and 8/06/96, respectively) and analyzed to verify results of original and duplicate analysis.

BD = Blind Duplicate - a field PCB duplicate sample submitted to the laboratory without identification of field location.

P = Practical quantitation limit (PQL) note for PCB values between <11 and 44 ng/l.

DM = Samples collected by Dames and Moore personnel.

DMEQBL = Equipment blank collected by Dames and Moore personnel. Only equipment blanks with PCB detected above the method detection limit are presented.

DMTBL = Trip blank collected by Dames and Moore personnel. Only trip blanks with PCB detected above the method detection limit are presented.

J = Sample results approximate due to excursions from data validation criteria.

UJ = Detection limit approximate due to excursions from data validation criteria.

NC = Not collected

- Homolog groups octa-, nona- and deca-chlorinated biphenyls were not detected.

Source: O'Brien & Gere Engineers, Inc.

Table B-2. *Instantaneous flow readings and analytical results - Hydrofacility operations monitoring (September 4, 1996)*

	Before				During				After			
Instantaneous Flow at USGS Fort Edward gaging station (cfs):	3,900				4,700				4,000			
Description	no flow over dam				inundation of falls following initiation of hydrofacility maintenance operations				intermittent flow over dam following completion of hydro-facility maintenance operations			
Analytical results (2, 3, 4)	**Sampling**	**PCBs (ng/l)**		**TSS**	**Sampling**	**PCBs (ng/l)**		**TSS**	**Sampling**	**PCBs (ng/l)**		**TSS**
Sampling Station (5)	**Time**	**8081**	**608CAP**	**(mg/l)**	**Time**	**8081**	**608CAP**	**(mg/l)**	**Time**	**8081**	**608CAP**	**(mg/l)**
HRM 197.0	08:20	<11 (<11)	-	1.3	10:20	<11	-	<1.1	12:20	<11	<11	1.4
Plunge Pool	08:37	14	-	1.6	10:15	23	-	3.4	12:20	26	26	2.2
HRM 196.8	-	-	-	-	-	-	-	-	12:45	-	13	2.0
HRM 194.2	09:25	15	-	1.5	11:55	42 (36)	-	2.5	13:50	23	24	2.2
HRM 188.5 W	17:10	-	51	1.2	-	-	-	-	-	-	-	-
	20:30	-	115	3.7	-	-	-	-	-	-	-	-
	22:30	-	118	1.4	-	-	-	-	-	-	-	-
PCRDMP HRM 188.5 W	14:20	108A	104 (102)	<1.0 (1.2)	-	-	-	-	-	-	-	-

Notes:

(1) USGS adjusted flows are preliminary unit values at the time sampling occurred at the HRM 194.2 sampling station.

(2) PCBs were analyzed by two methods: USEPA Method 8081 (8081) and capillary column method NEA608CAP (608CAP). Method NEA608CAP data have been corrected for analytical bias.

(3) Duplicate results are presented in parentheses ( ).

(4) A = altered PCB composition. Samples analyzed by Method 8081 are reported as Aroclor 1242 except as noted by "A" indicating altered PCB composition detected and quantified using Aroclor 1221 and Aroclor 1242 reference peaks. Method 8081 is unable to quantify some altered congeners.

(5) HRM = approximate Hudson River mile; HRM 0.0 is located at the Battery in New York City. Samples from location HRM 194.2 are a composite of west and east channels.

Source: O'Brien & Gere Engineers, Inc.

Table B-3. *September 4, 1996 hydrofacility monitoring PCB homolog distributions, including total PCB and TSS results.*

Location (1)	Sampling Time	Comments	TSS (mg/l)	Total PCB (2) (ng/l)	Homolog Distribution (weight percent) mono	di	tri	tetra	penta	hexa	hepta
PCRDMP											
HRM 197.0	12:20	-	1.4	<11	-	-	-	-	-	-	-
Plunge Pool	12:20	DM, P	2.2	26	0.0	16.6	41.1	28.7	10.5	3.2	0.0
HRM 196.8	12:45	-	2.0	13	0.0	27.9	33.0	20.6	14.0	4.5	0.0
HRM 194.2	13:50	P	2.2	24	0.0	17.6	39.4	31.3	8.9	2.9	0.0
HRM 188.5W	14:20		<1.0	104	7.5	34.9	30.1	17.7	7.8	2.1	0.0
HRM 188.5W Dup.	14:20	BD	1.2	102	8.8	36.7	30.9	17.9	5.0	0.8	0.0
HYDROFACILITY MONITORING											
HRM 188.5W Before	17:10	P	1.2	51	0.0	24.3	42.0	23.9	8.5	1.4	0.0
HRM 188.5W Before	20:30	-	3.7	115	10.0	37.9	31.2	15.1	5.1	0.8	0.0
HRM 188.5W During	22:30	-	1.4	118	11.1	37.3	31.1	15.0	4.7	0.7	0.0

Notes:

(1) HRM = approximate Hudson River mile; HRM 0.0 is located at the Battery in New York City. Samples from location HRM 194.2 are a composite of west and east channels. Plunge Pool samples are collected from the plunge pool at Bakers Falls (approximate HRM 196.9).

(2) Samples analyzed for PCBs by capillary column using NEA Method 608CAP. Data have been corrected for analytical bias.

P = Practical quantitation limit (PQL) note for PCB values between 11 and 44 ng/l.

BD = Blind Duplicate - a field PCB duplicate sample submitted to the laboratory without identification of field location.

PCRDMP = Post-Construction Remnant Deposit Monitoring Program

DM = Sample collected by Dames and Moore personnel.

- Before, During and After indicate time of travel estimated samples from before, during and after flow was observed spilling over Bakers Falls dam. River flow is diverted from the hydrofacility during routine maintenance, diverting flow over the dam.
- Homolog groups octa-, nona- and deca-chlorinated biphenyls were not detected.

Source: O'Brien & Gere Engineers, Inc.

Table B-4. FED transect data with averages of temporal sampling and PCRDMP data: Water Column Monitoring Study Transect Sampling.

Sampling station	Remnant Deposits Region 09/17/96 Time	PCBs	TSS
	HRM 194.2W*		
Temporal Average	11:35-18:30	11	0.9
	FED Transect		
1 (west shore)	10:30-17:30	<11	<1.0
2	10:41-17:34	<11	1.1
3	10:51-17:37	11	1.0
4	10:56-17:40	<11	1.1
5	10:59-17:43	<11	1.1
6 (east shore)	11:03-17:46	15 (16)	1.1 (1.3)
	HRM 194.2E*		
Temporal Average	11:15-18:40	15	2.2

Flow at the USGS Ft. Edward gaging station = 1,400 cfs

Notes:

Samples were analyzed for total PCB by Method NEA608CAP and are reported in ng/l. Data have been corrected for analytical bias. Samples were analyzed for TSS by Method 160.2 and are reported in mg/l.

For concentrations less than the detection limit, a value less than the detection limit (10.9 ng/l) was used to calculate the average.

Results of duplicate analyses are in parentheses ( ).

Transect FED was re-established at the approximate locations used in the 1995 River Monitoring Test. Transect FED was located approximately 1,500 feet upstream of the routine Fort Edward sampling location (HRM 194.2).

September 17 transect sampling consisted of hourly sampling conducted over 8-hour sampling periods: HRM 194.2E and HRM 194.2W PCB and TSS data are results of vertically integrated temporal composite sampling; FED transect PCB and TSS data are results of composite sampling consisting of surface and deep aliquots.

The asterisk (*) indicates that PCB and TSS concentrations presented for the location noted are averages of temporally discrete samples.

Flow data is presented based on estimated time of travel from the USGS gaging station at Fort Edward; flow data for temporal composite samples is presented as the average of the provisional instantaneous flows corresponding to the sampling period. Flow is approximated.

Source: O'Brien & Gere Engineers, Inc.

Table B-5. *Fort Edward sampling station evlaluation - PCB monitoring results, with TSS results and PCB homolog distributions.*

Date Collected	Location (1)	Comments	TSS (mg/l)	Total PCB (2) (ng/l)	Homolog Distribution (weight percent) mono	di	tri	tetra	penta	hexa	hepta
09/17/96	HRM 197.0-1	-	1.6	<11	-	-	-	-	-	-	-
	HRM 197.0-2	-	2.0	<11	-	-	-	-	-	-	-
	HRM 197.0-3	-	1.7	<11	-	-	-	-	-	-	-
	HRM 197.0-4	-	1.6	<11	-	-	-	-	-	-	-
	HRM 197.0-5	-	1.5	<11	-	-	-	-	-	-	-
	HRM 197.0-6	-	1.7	<11	-	-	-	-	-	-	-
	HRM 197.0-7	-	1.5	<11	-	-	-	-	-	-	-
	HRM 197.0-8	-	1.7	12	0.0	29.8	32.0	18.7	16.2	3.3	0.0
	HRM 194.2W-1	-	<1.0	<11	-	-	-	-	-	-	-
	HRM 194.2W-2	-	<1.0	<11	-	-	-	-	-	-	-
	HRM 194.2W-3	-	<1.0	<11	-	-	-	-	-	-	-
	HRM 194.2W-4	-	1.2	<11	-	-	-	-	-	-	-
	HRM 194.2W-5	-	1.1	11	0.0	17.4	37.5	23.2	17.5	4.4	0.0
	HRM 194.2W-6	-	1.1	11	0.0	22.9	39.8	23.3	11.1	2.9	0.0
	HRM 194.2W-7	-	<1.0	<11	-	-	-	-	-	-	-
	HRM 194.2W-8	-	1.5	<11	-	-	-	-	-	-	-
	FED 1	-	<1.0	<11	-	-	-	-	-	-	-
	FED 2	-	1.1	<11	-	-	-	-	-	-	-
	FED 3	-	1.0	11	0.0	11.9	42.4	30.1	13.0	2.6	0.0
	FED 4	-	1.1	<11	-	-	-	-	-	-	-
	FED 5	-	1.1	<11	-	-	-	-	-	-	-
	FED 6	P	1.1	15	0.0	15.8	40.2	31.2	9.9	2.8	0.0
	FED 6 Dup	BD, P	1.3	16	0.0	17.8	43.8	26.4	10.6	1.4	0.0
	HRM 194.2E-1	-	2.3	11	0.0	22.7	29.7	25.2	17.2	5.3	0.0
	HRM 194.2E-2	P	2.7	14	0.0	21.1	30.2	29.5	15.3	4.0	0.0
	HRM 194.2E-3	P	2.5	14	0.0	19.1	37.1	26.9	11.4	5.5	0.0
	HRM 194.2E-4	P	2.6	14	0.0	26.7	33.6	22.6	13.5	3.6	0.0
	HRM 194.2E-4 Dup	BD, P	1.9	16	0.0	21.2	41.4	24.7	11.4	1.3	0.0
	HRM 194.2E-5	P	2.1	12	0.0	21.5	37.5	28.7	10.3	2.1	0.0
	HRM 194.2E-6	P	2.5	15	0.0	17.6	47.0	26.1	7.7	1.6	0.0
	HRM 194.2E-7	P	1.8	19	0.0	17.1	44.2	27.4	9.1	2.3	0.0
	HRM 194.2E-8	P	1.7	18	0.0	15.1	43.6	29.2	10.2	1.9	0.0

Notes:

(1) FED = Fort Edward Transect. E = East channel or shoreline station. W = West channel or shoreline station. HRM = approximate Hudson River mile; HRM 0.0 is located at the Battery in New York City.

(2) Samples analyzed for PCBs by capillary column using NEA Method 608CAP. Data have been corrected for analytical bias.

P = Practical quantitation limit (PQL) note for PCB values between 11 and 44 ng/l.

BD = Blind duplicate sample

\- Homolog groups octa-, nona- and deca-chlorinated biphenyls were not detected.

Source: O'Brien & Gere Engineers, Inc.

Table B-6. *Hudson River Water Column PCBs, comparison of two analytical methods (1)*

Date Collected	USGS Flow (3) Daily average (cfs)	Temp. @ HRM 194.2 (celcius)	HRM 197.0(2) Total PCBs (ng/l) (4) NEA608CAP	HRM 197.0(2) Total PCBs (ng/l) (4) 8081	HRM 197.0(2) Com. (5)	HRM 194.2(2) Total PCBs (ng/l) (4) NEA608CAP	HRM 194.2(2) Total PCBs (ng/l) (4) 8081	HRM 194.2(2) Com. (5)	HRM 188.5(2) Total PCBs (ng/l) (4) NEA608CAP	HRM 188.5(2) Total PCBs (ng/l) (4) 8081	HRM 188.5(2) Com. (5)
31-Jul-96	3,400	22	-	-	-	56	26	-	77	68	AL
07-Aug-96	3,600	24	<11	<11	-	25	21	P	129 (118)	173	AL
14-Aug-96	3,500	24	-	-	-	26 (24)	25	P	85	155	AL
20-Aug-96	3,300	24	<11 (<11)	<11	-	19	16	P	150	176	AL
04-Sep-96	3,400	24	<11	<11	(A)	24	23	P,(A)	104 (102)	108	AL
10-Sep-96	3,900	23	<11 (<11)	<11	-	17	19	P	55	91	P, AL
23-Oct-96	2,900	11	-	-	-	-	-	-	82	119	AL

Notes:

(1) Split samples analyzed by capillary column Method NEA608CAP and by USEPA Method 8081. Method NEA608CAP data have been corrected for analytical bias.

(2) HRM = Approximate Hudson River mile; HRM 0.0 is located at the Battery in New York City. Samples from location HRM 194.2 are a composite of west and east channels.

(3) Daily average flows presented were measured at the USGS Fort Edward gaging station. Flow data from July through September are values published by the USGS. Daily average flow for October was obtained from preliminary data provided by the USGS (01/16/98).

(4) Parentheses indicate results of duplicate analysis.

(5) Com = Comments include clarifications of methods and qualifiers:

P = Practical quantitation limit (PQL) note for PCB values between <11 ng/l and 44 ng/l.

(A) = Samples collected on September 4 as part of the hydrofacility monitoring program, where "A" indicates the "After" condition (see Appendix B).

AL = Samples analyzed by Method 8081 are reported as Aroclor 1242 except as noted by "AL" indicating altered PCB composition detected and quantified using Aroclors 1242 and 1221 for reference. Method 8081 is unable to quantify some altered congeners.

Source: O'Brien & Gere Engineers, Inc.

321764

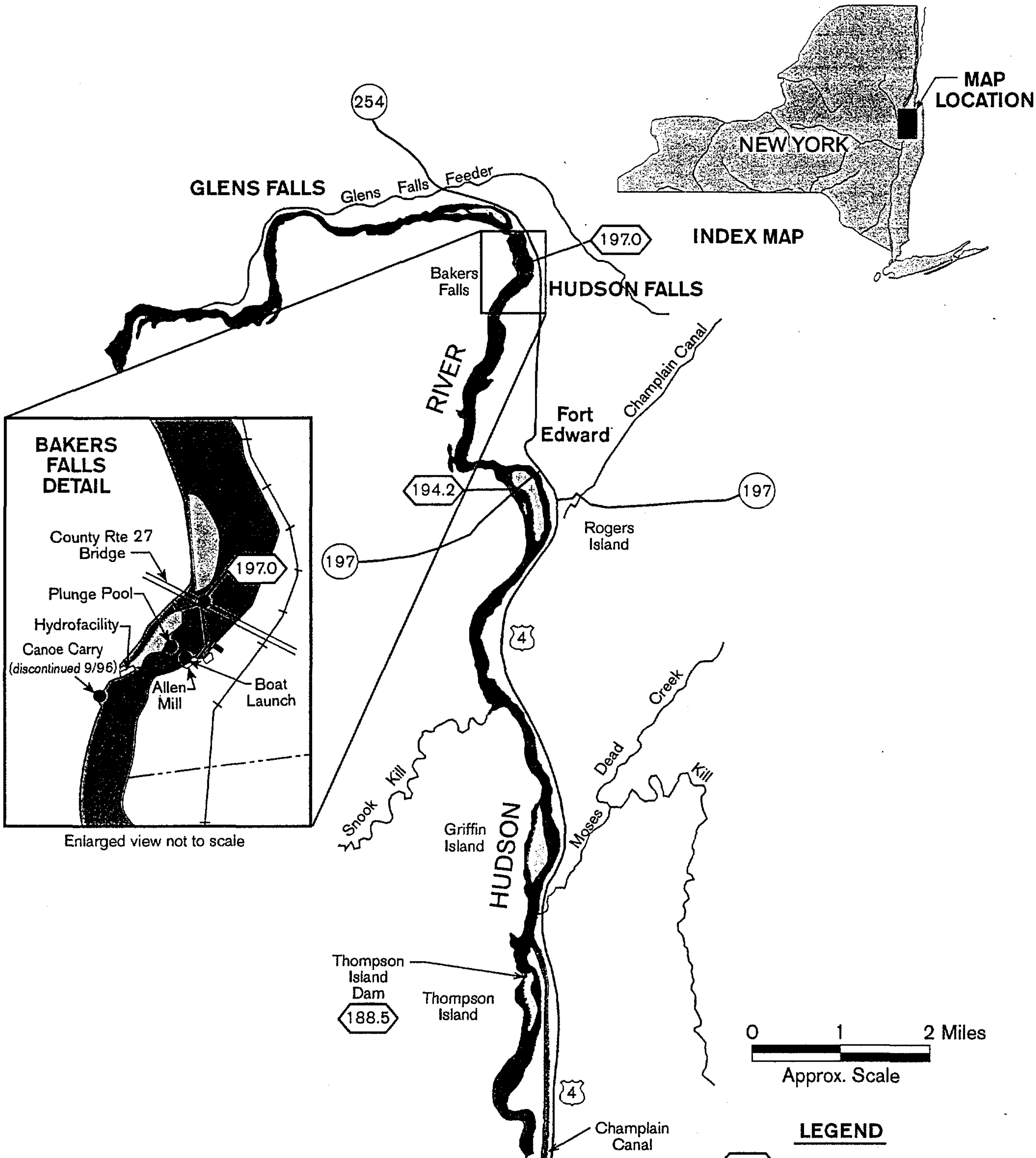
Appendix B -Figures

DIV 26 GEMINI MAC REPORT GRAPHICS /GEHUDSON Fig.B-1

FIGURE B-1

GENERAL ELECTRIC COMPANY-HUDSON RIVER PROJECT
1997 WATER COLUMN MONITORING STUDY

Water Column Sampling Locations Upstream of Remnant Deposits



LEGEND

194.2 Approx. River Mile at Routine Water Column Monitoring Stations

● Routine Water Column Monitoring Stations

O'BRIEN & GERE ENGINEERS, INC.

321767

Figure Adapted From map by Hydroqual

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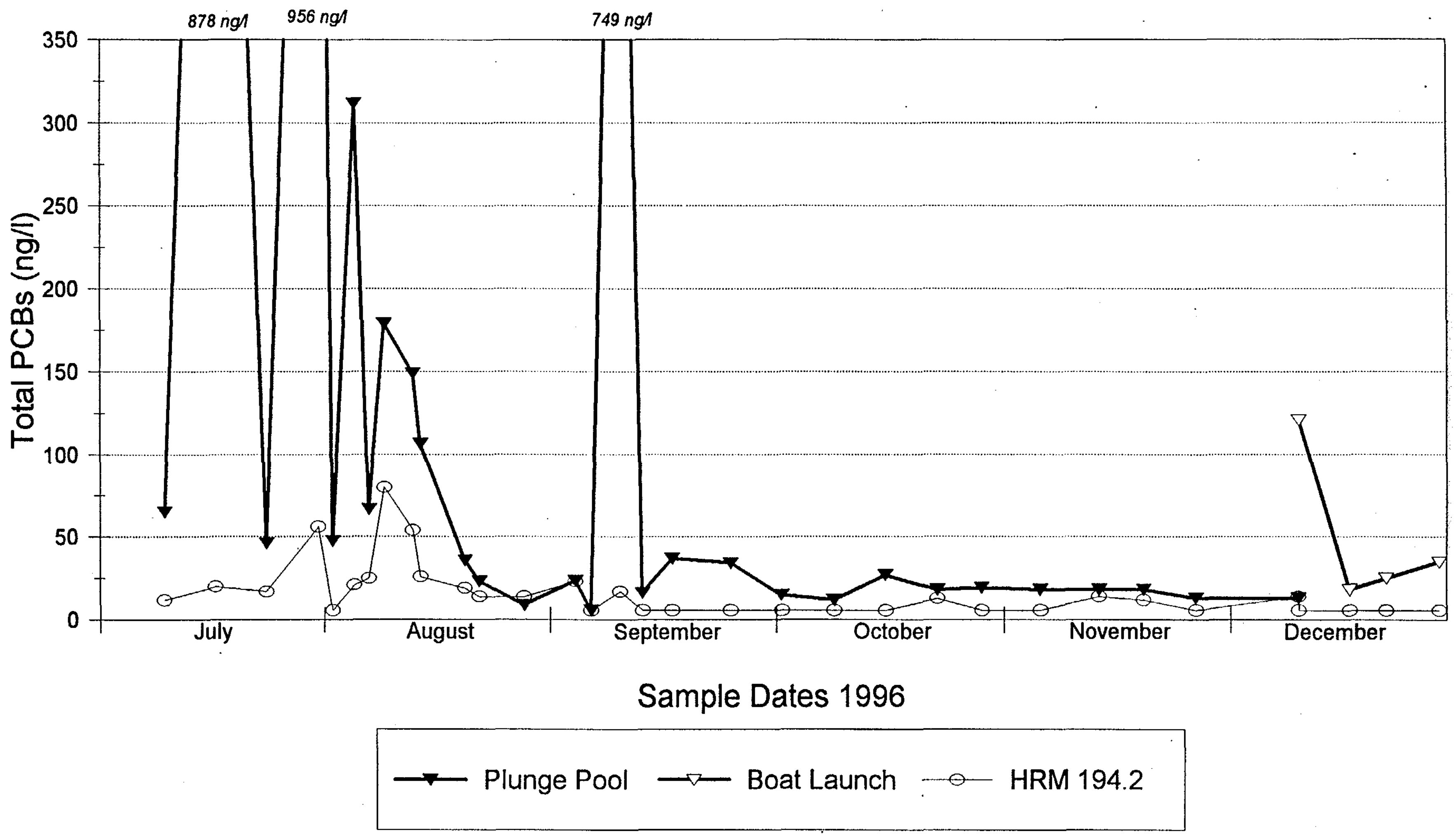
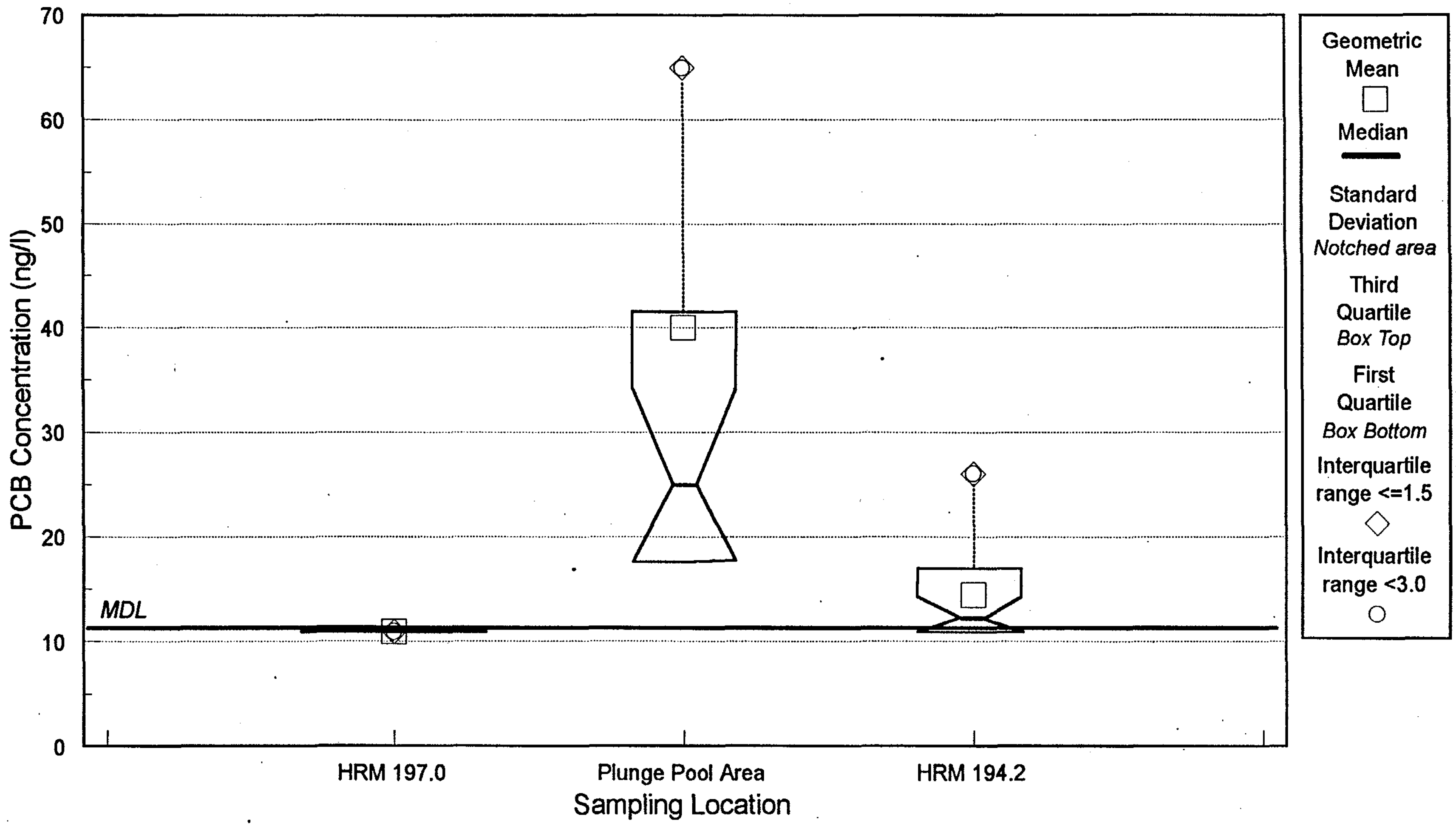
Figure B-2
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
Plunge Pool and HRM 194.2 Total PCB Concentrations



Note: Plunge Pool and HRM 194.2 data include Method 8081 analytical results. When analytical results for Method 8081 and Method NEA608CAP are available for the same sample date, the results are averaged together for one daily value. Boat Launch consists of only NEA608CAP analytical results. Method NEA608CAP data have been corrected for analytical bias.

Figure B-3
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
Box Plot Statistical Analysis of Total PCB Concentrations at 07/10/96 - 12/30/96



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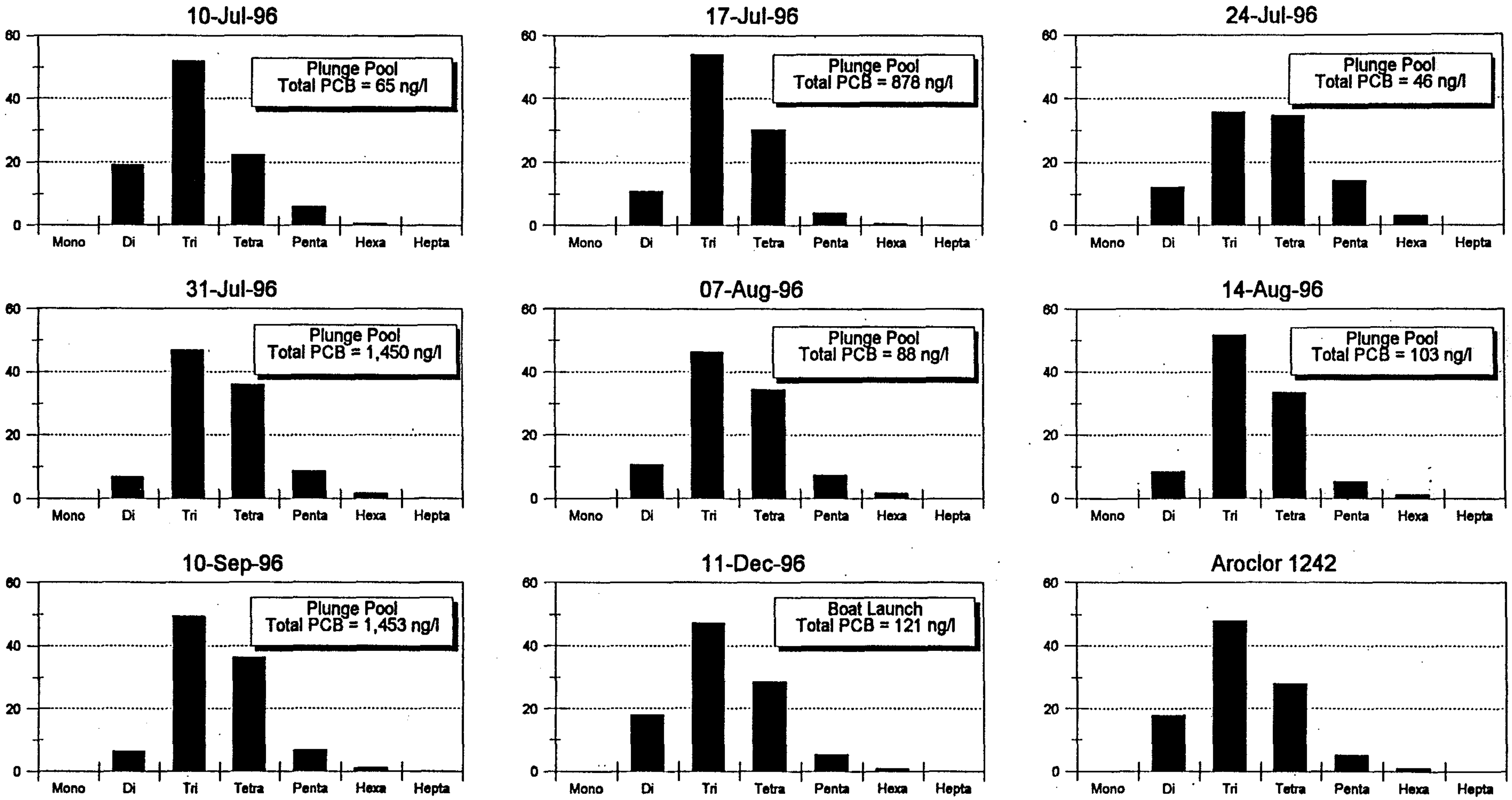
Note: Statistics were calculated using analytical bias corrected PCB results from Method NEA608CAP. Method detection limit (MDL) = 11 ng/l. Practical Quantitation limit = 44 ng/l. For values reported below the method detection limit, a value of 10.9 ng/l was used to calculate the statistics. Box plots provide a summary of seven statistical components (see legend). When the notches of any two boxes overlap vertically, the medians are not statistically different at the 95% confidence level (Reckhow and Chapra 1983).

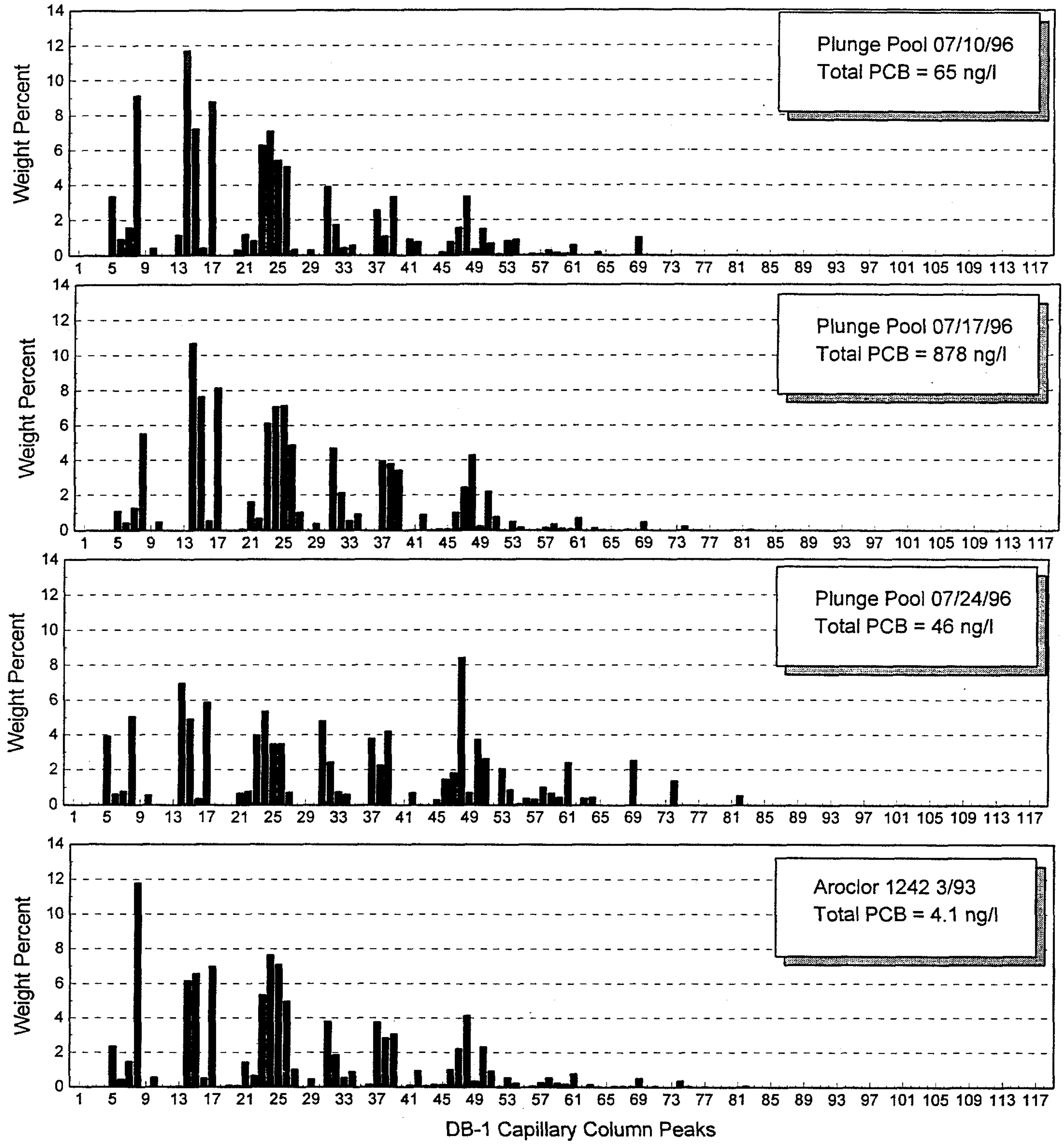
Figure B-4
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
Homolog Distributions - Base of Bakers Falls



Note: Homolog distributions are presented for samples with total PCB analytical results greater than the practical quantitation limit (44 ng/l). PCBs analyzed by Method NEA608CAP. Data have been corrected for analytical bias.

321770

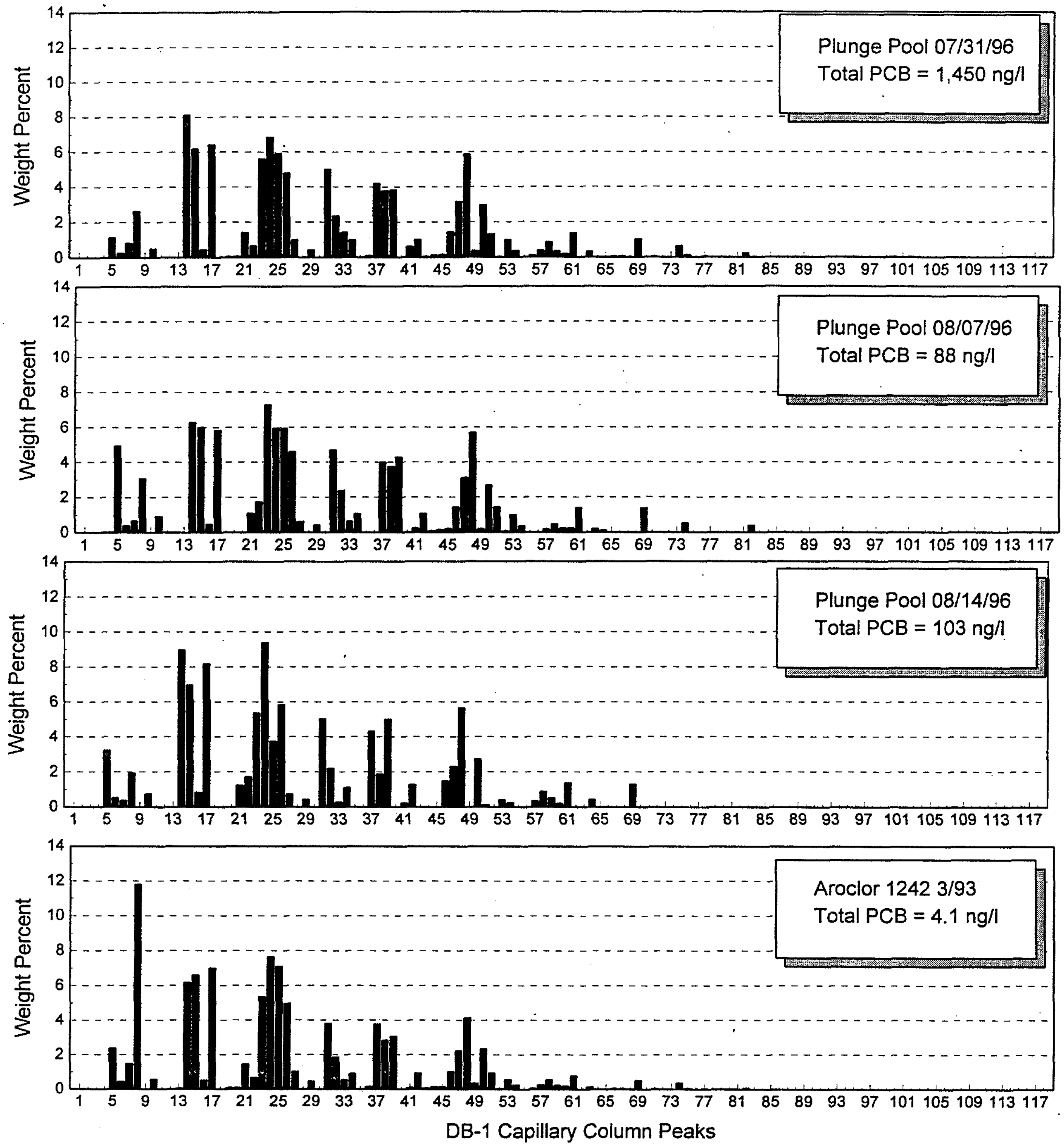
Figure B-5
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
Congener Distributions - Base of Bakers Falls



Note: Data have been adjusted for analytical bias. Congener distributions are presented for sample results with total PCB concentrations greater than the practical quantitation limit (44 ng/l).

321771

Figure B-6
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
Congener Distributions - Base of Bakers Falls



Note: Data have been adjusted for analytical bias. Congener distributions are presented for sample results with total PCB concentrations greater than the practical quantitation limit (44 ng/l).

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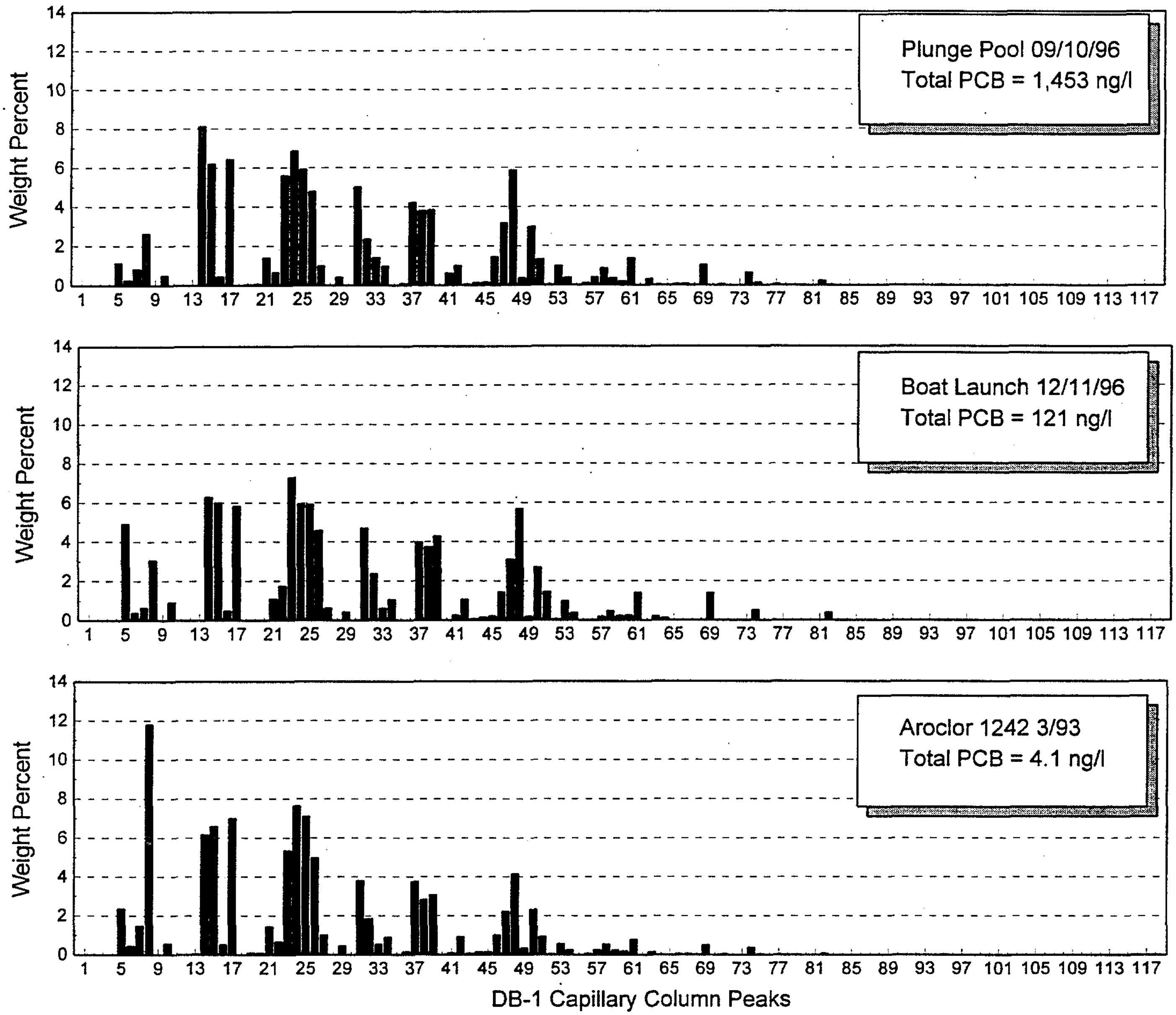
Figure B-7
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
Congener Distributions - Base of Bakers Falls



Note: Data have been adjusted for analytical bias. Congener distributions are presented for sample results with total PCB concentrations greater than the practical quantitation limit (44 ng/l).

321773

Figure B-8

GENERAL ELECTRIC COMPANY-HUDSON RIVER PROJECT
WATER COLUMN MONITORING STUDY

TRANSECT SAMPLING STUDY WATER COLUMN SAMPLING LOCATIONS

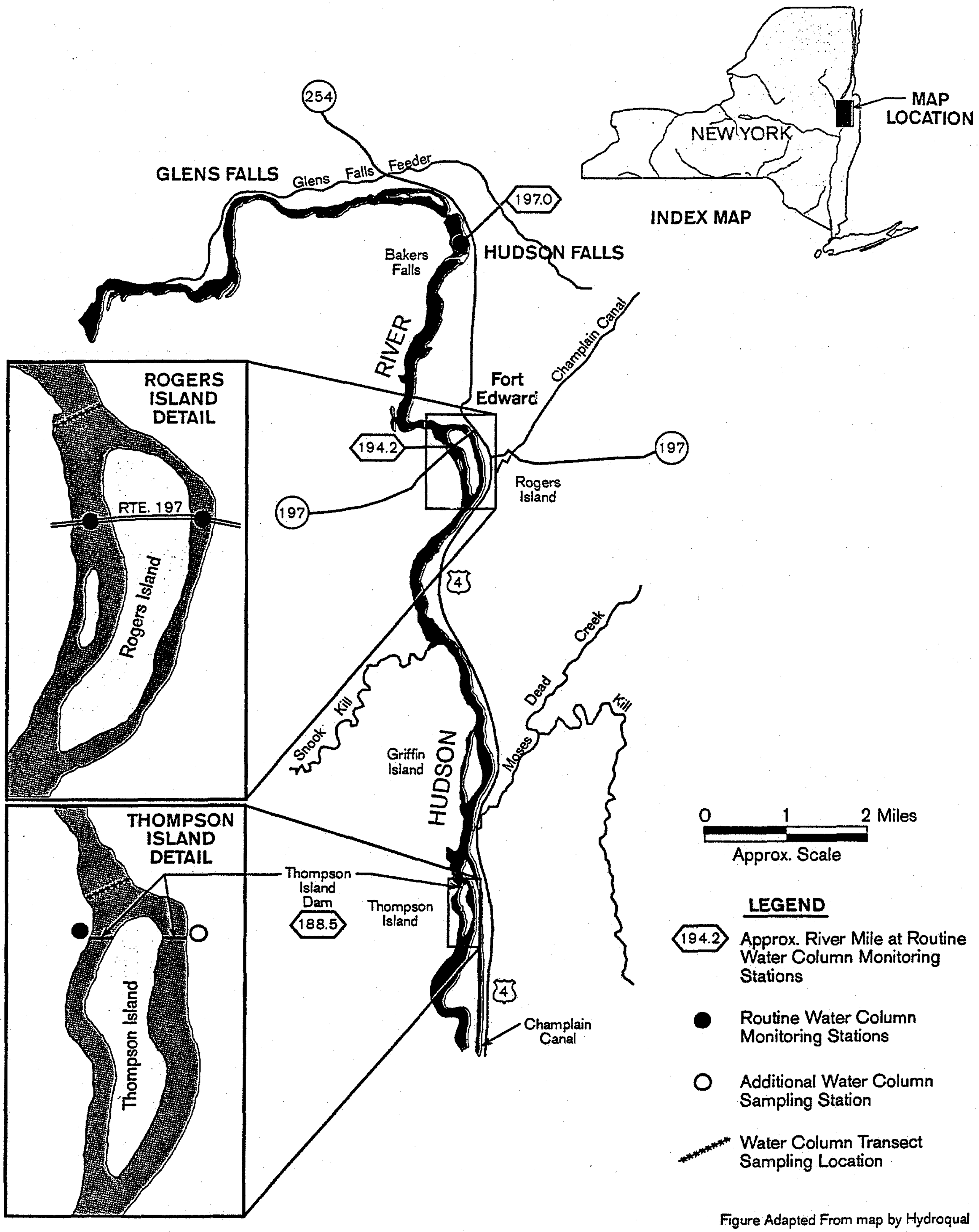


Figure Adapted From map by Hydroqual

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DIV 26 GEMINI MAC REPORT GRAPHICS /GEHUDSON 612.205-001

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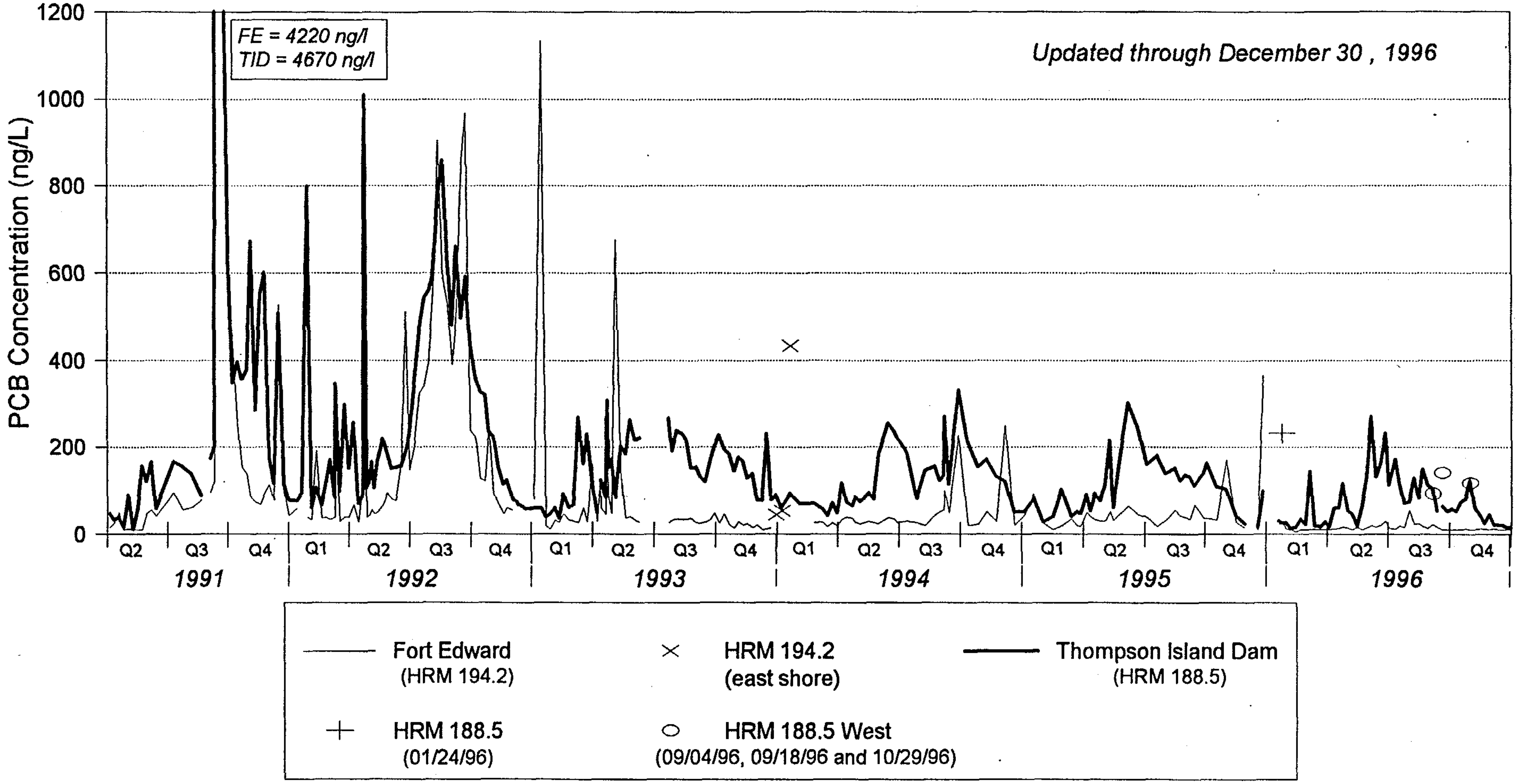
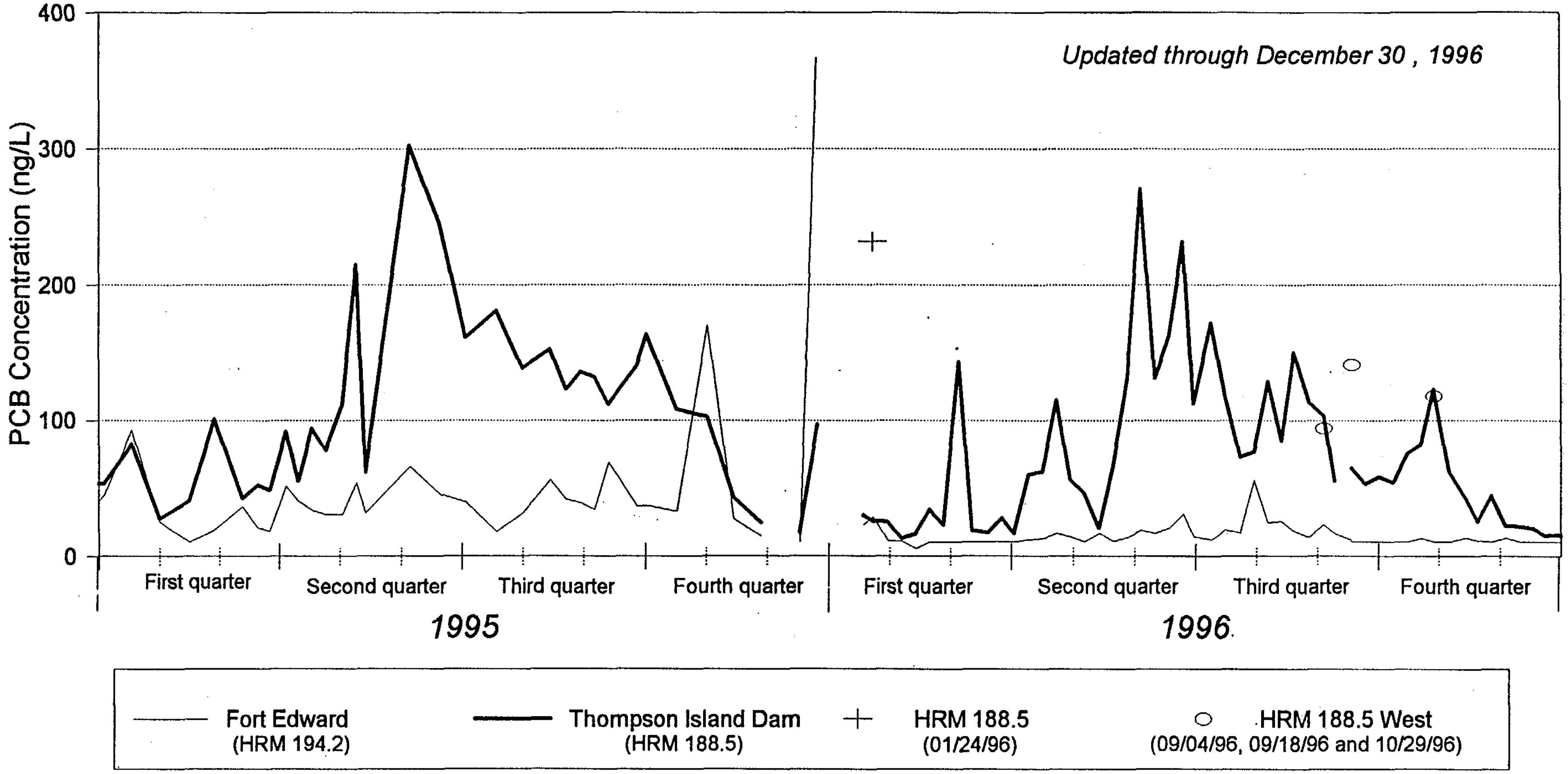
Figure B-9
General Electric Company - Hudson River Project
1991 to 1996 PCB Water Column Monitoring Results



Note: "X" indicates sample collected from the eastern shoreline of HRM 194.2 due to ice cover on the river. "+" indicates the result of sample collected at TID on 01/24/96 for which duplicate and archive results averaged 26 ng/l. Circles indicate results from HRM 188.5 samples collected 09/04/96 (hydrofacility monitoring), and 8-hour composite collected 09/18/96 (transect study) and the average of four temporally discrete samples collected 10/29/96. Data represents results of Method NEA608CAP analysis. MDL = 11 ng/l, PQL = 44 ng/l, Q = yearly quarter. PCB data has been adjusted for analytical biases.

321775

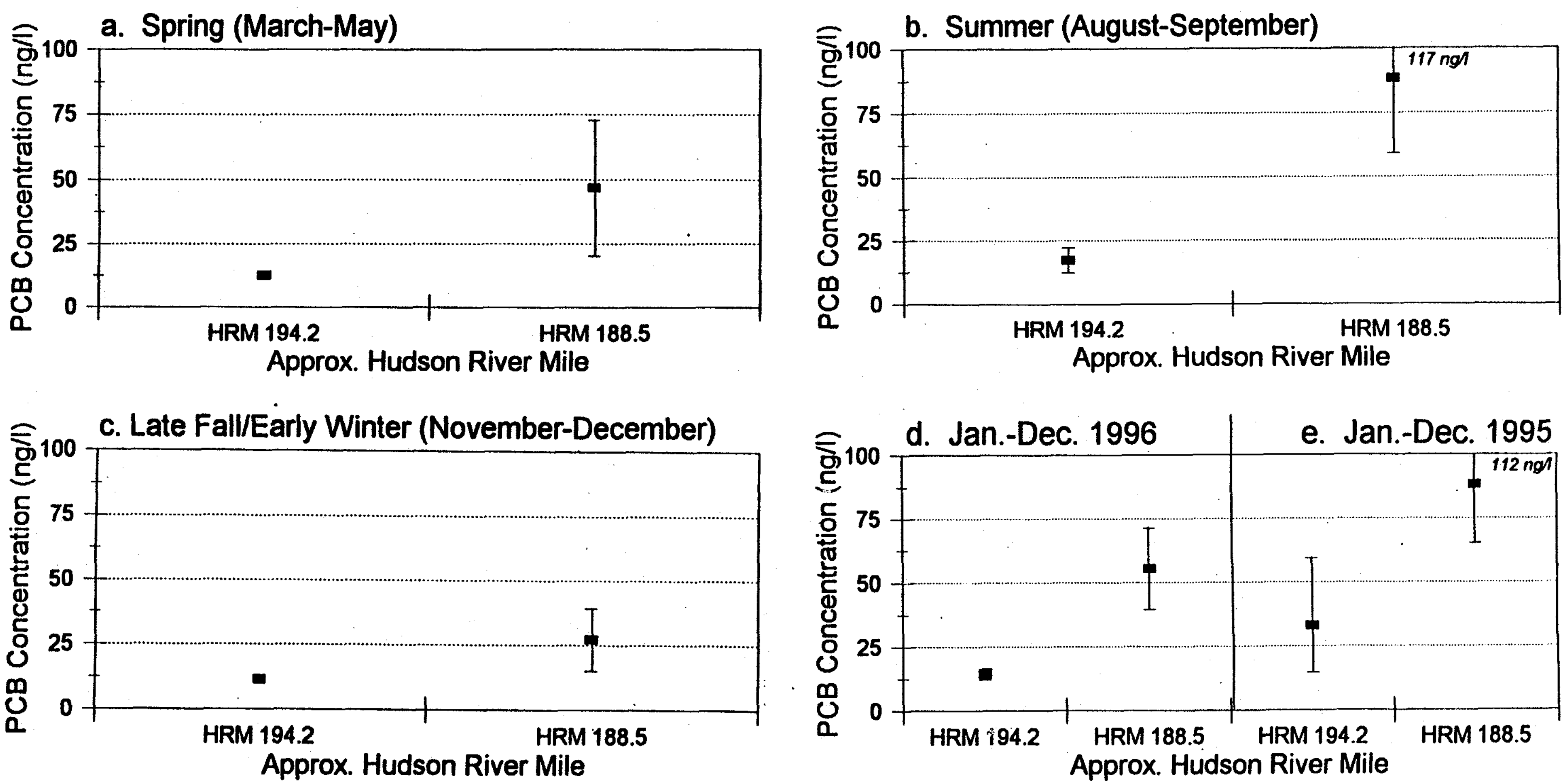
Figure B-10
General Electric Company - Hudson River Project
1995 to 1996 PCB Water Column Monitoring Results



Note: "+" indicates the result of sample collected at TID on 01/24/96 for which duplicate and archive results averaged 26 ng/l. Circles indicate results from HRM 188.5 samples collected 09/04/96 (hydrofacility monitoring), and 8-hour composite collected 09/18/96 (transect study) and the average of four temporally discrete samples collected 10/29/96. Data represents results of Method NEA608CAP analysis. MDL = 11 ng/l, PQL = 44 ng/l. PCB data has been adjusted for analytical biases.

321776

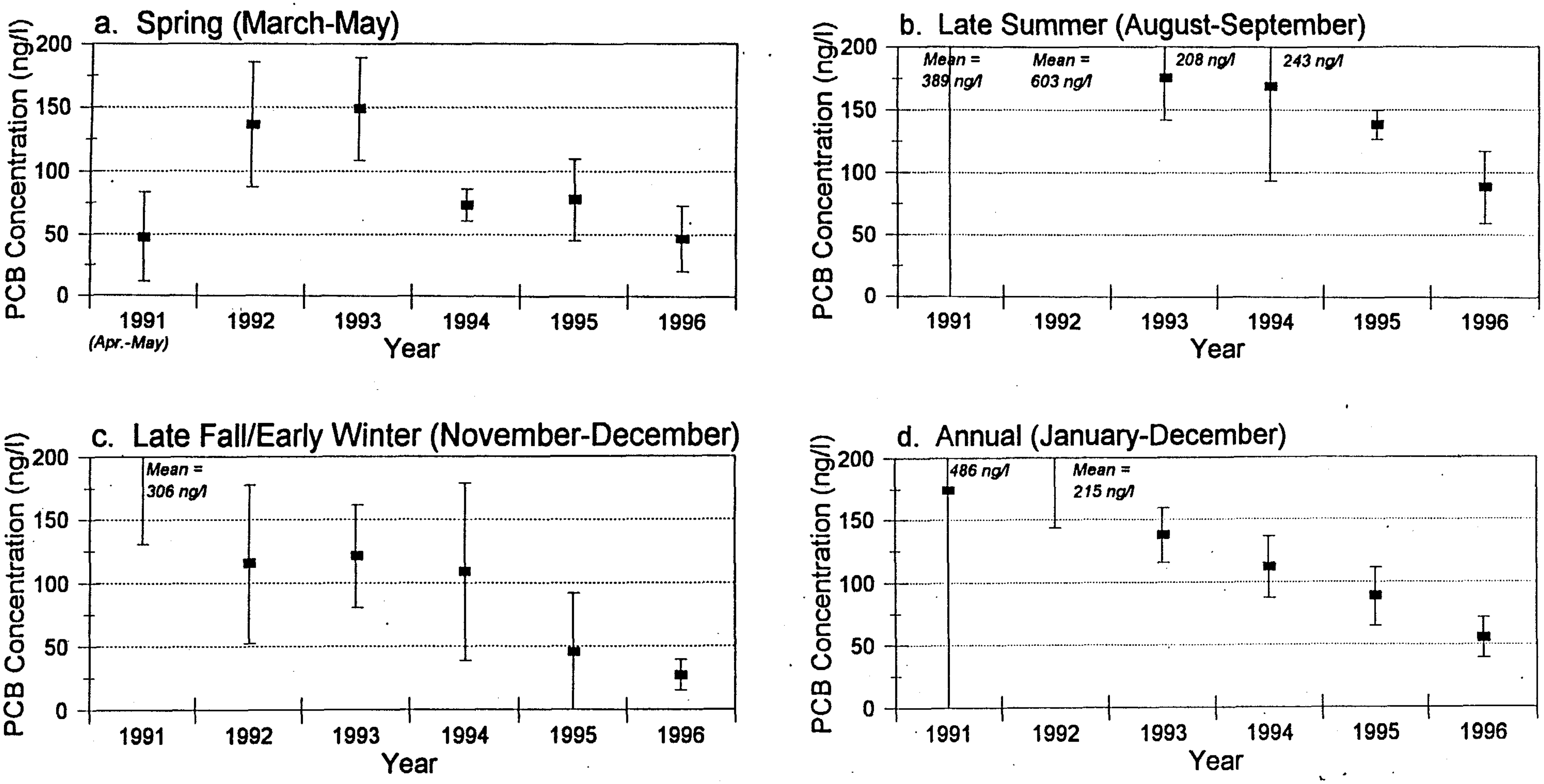
Figure B-11
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
PCB Statistics for Selected Time Periods in 1996 at HRM 194.2 and HRM 188.5



321777

Notes: Geometric Mean +/- 95% confidence interval. PCBs analyzed by Method NEA608CAP. For PCB results reported less than the detection limit (11 ng/l) a value of 10.9 ng/l was used to calculate the statistics. Data have been corrected for analytical bias.

Figure B-12
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
PCB Statistics for Selected Time Periods at HRM 188.5



Notes: Geometric Mean +/- 95% confidence interval. PCBs analyzed by Method NEA608CAP. For PCB results reported less than the detection limit (11 ng/l) a value of 10.9 ng/l was used to calculate the statistics. Data have been corrected for analytical bias.

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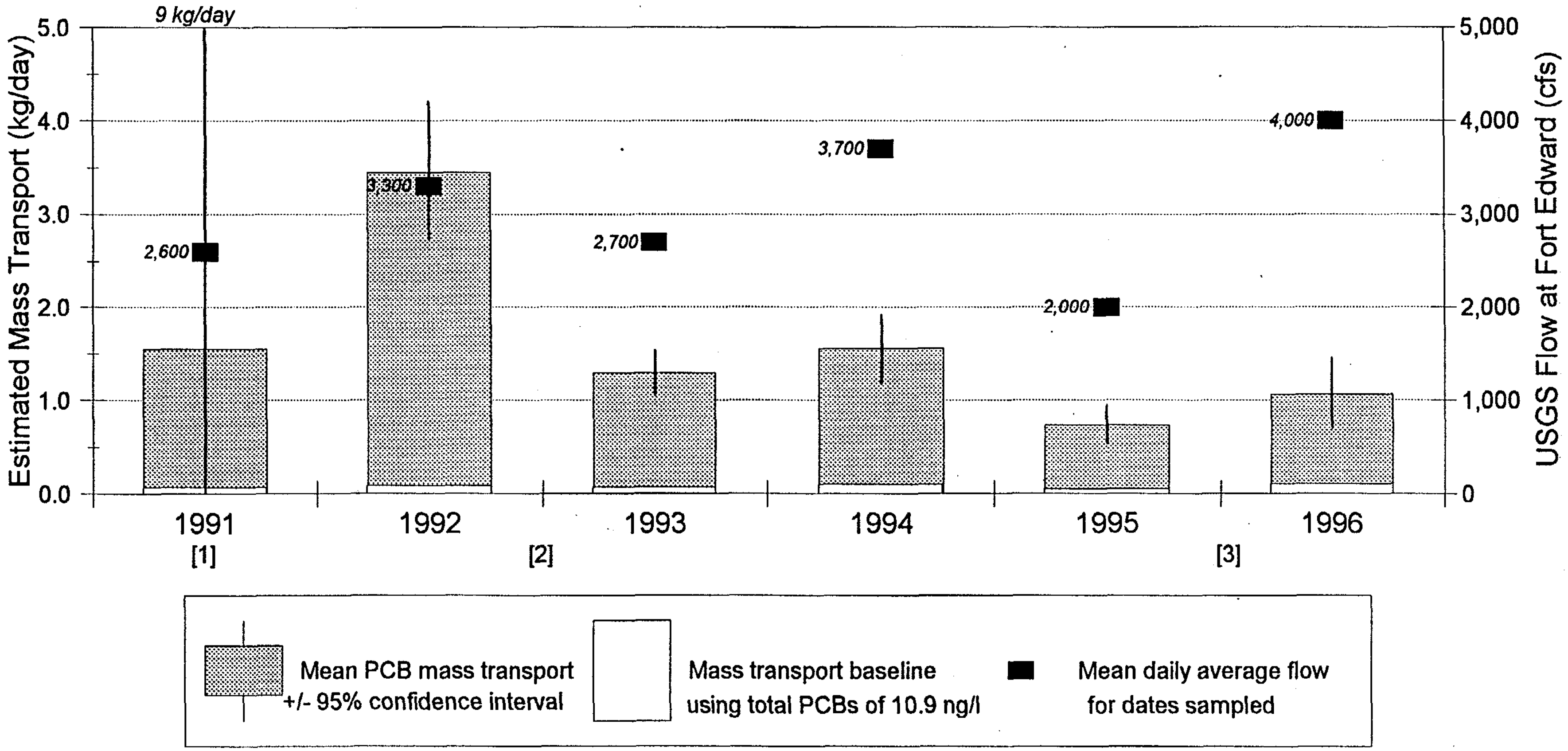
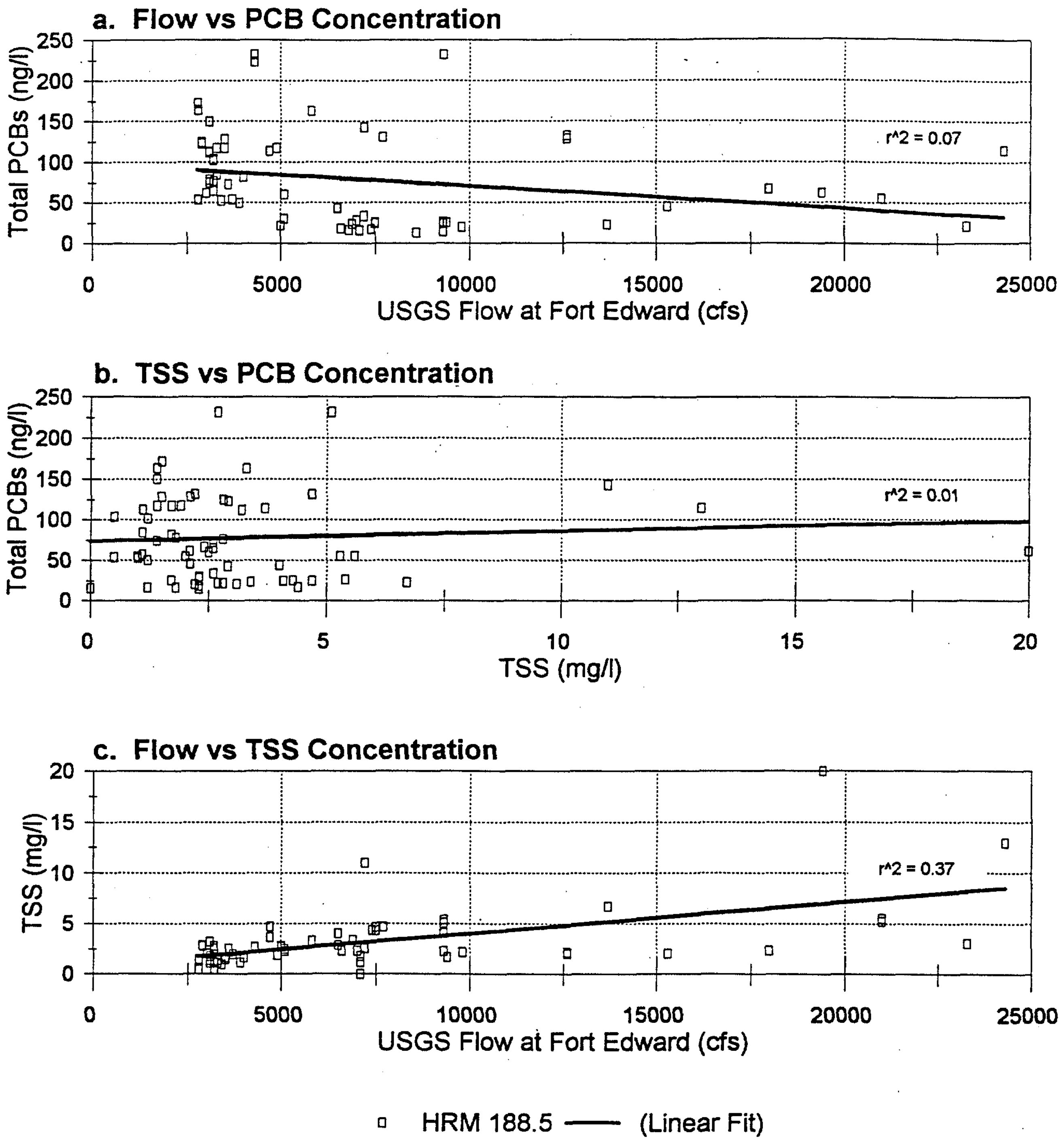
Figure B-13
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
PCB Mass Transport at HRM 188.5 Summer Low Flow (June to September)



321779

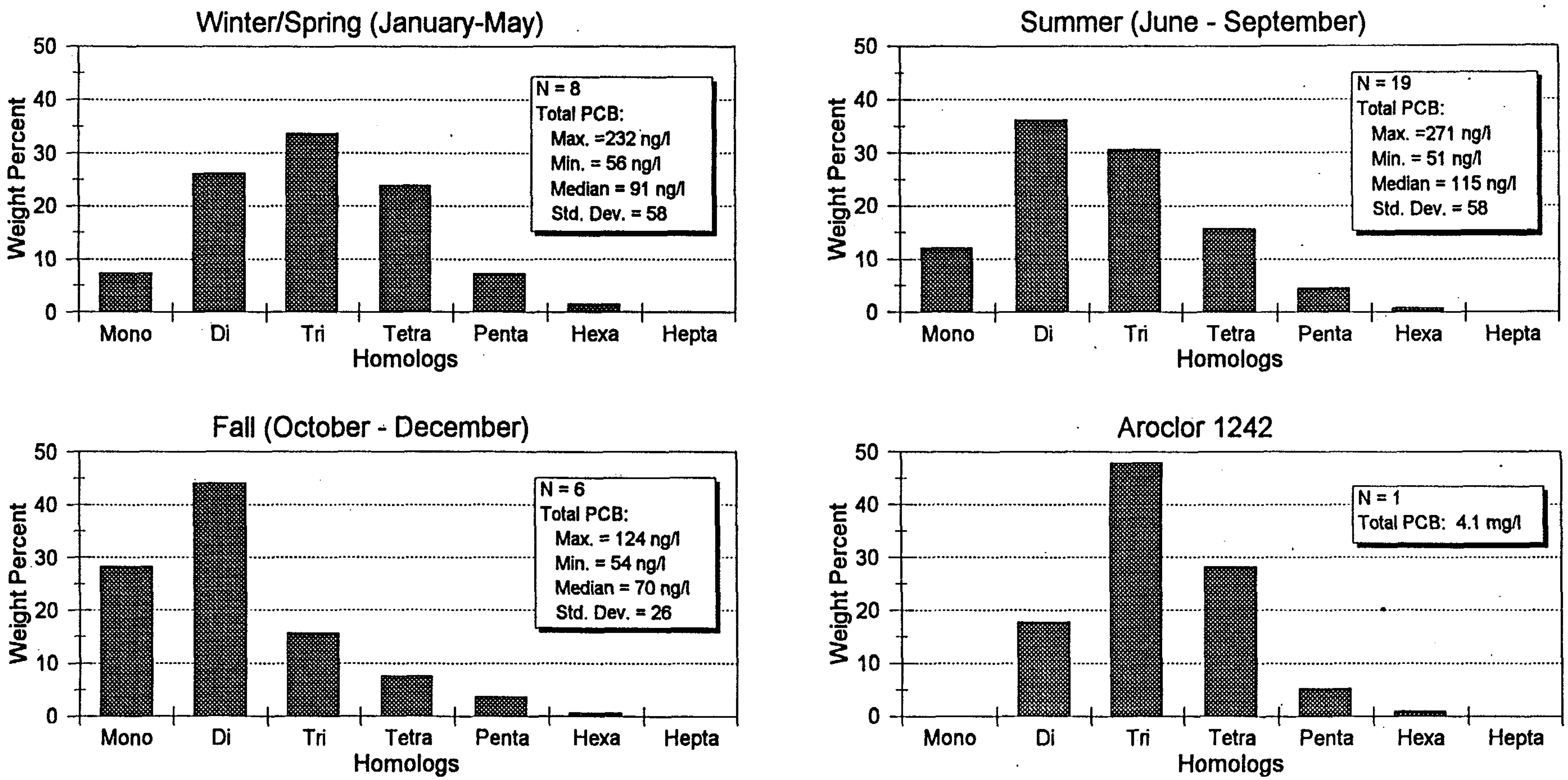
Note: Mass transport is calculated as PCB concentrations (ng/l) times USGS daily average flow (cfs) times a conversion factor. Mass transport is presented as the average for the summer low flow sampling period for each year. USGS flow data was measured at the Fort Edward gaging station. USGS published flow values were averaged for the summer low flow sampling period for each year. Data qualified with "R" using data validation criteria are not included in statistics. PCB concentrations were obtained from Method NEA608CAP analyses corrected for analytical bias. Baseline values were calculated using total PCB concentration of 10.9 ng/l. Baseline PCB mass transport is indicated by the unshaded portion of each bar. [1] indicates collapse of the Allen Mill gate (9/91). [2] indicates implementation of source control measures (winter 1992-1993). [3] indicates initiation of hydrofacility operations at Bakers Falls which have changed the hydrology of the river in the vicinity of Bakers Falls (12/95).

Figure B-14
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
Comparison of Flow, PCB, and TSS Data at HRM 188.5



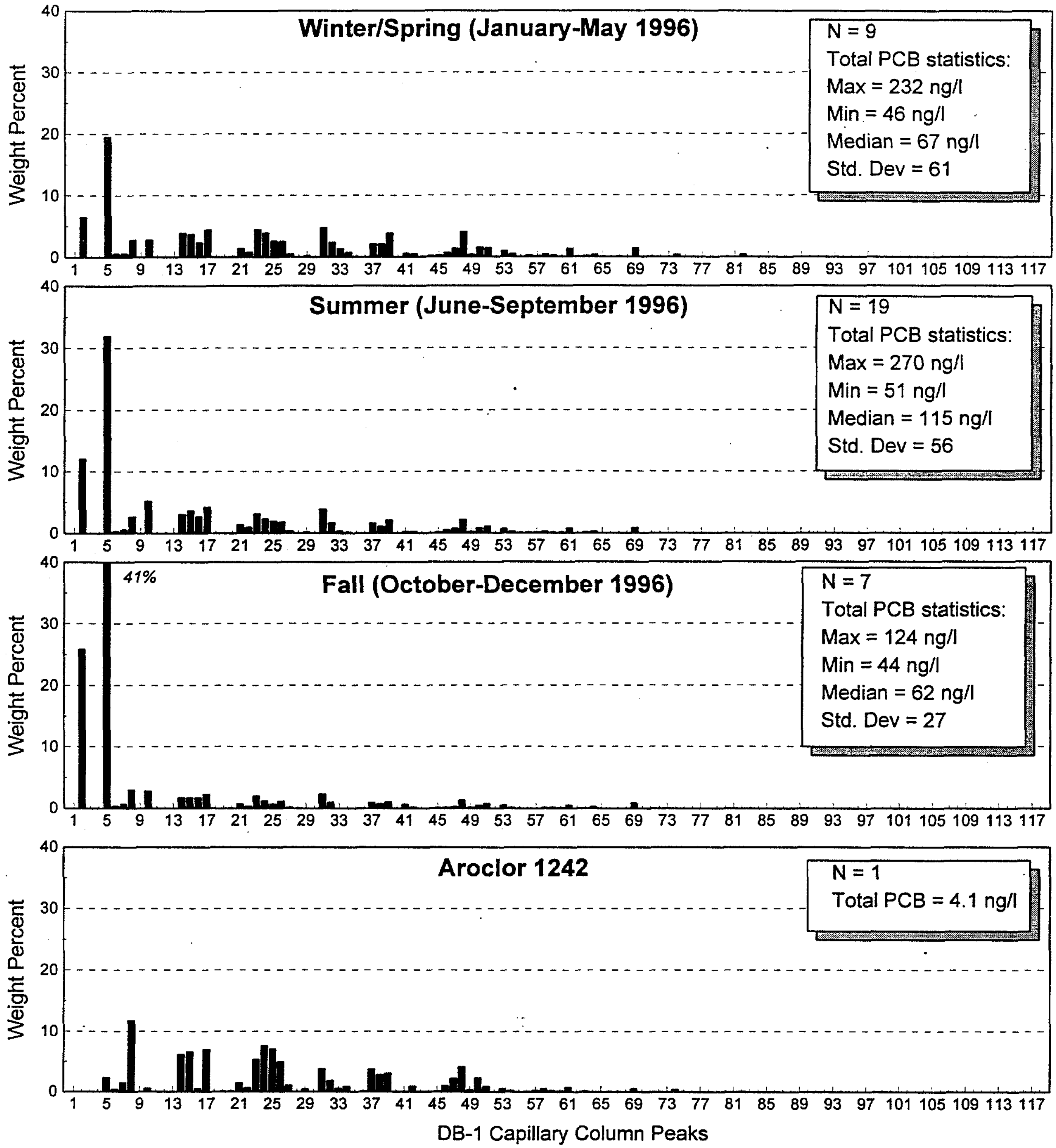
Note: Provisional flow data provided by USGS. Flows for the period between 05/15/96 and 06/05/96 are presented as the sum of flows measured at two stations upstream of Fort Edward (Appendix C). PCBs analyzed by method NEA608CAP. Data have been corrected for analytical bias. For PCB and TSS data less than the method detection limits, a value of one-half the detection limit is presented.

Figure B-15
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
Median Homolog Distributions at HRM 188.5



Notes: PCB analytical results from Method NEA608CAP. Data have been corrected for analytical bias. Samples with total PCB concentrations greater than 50 ng/l were used in the statistics. Includes duplicate and archive results. Summer season (June - September) statistics do not include data obtained July 31 (total PCB = 55 ng/l) as the distribution resembled an unaltered Aroclor 1242 which was not typical of the homolog distributions during that time period.

Figure B-16
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
Median Congener Distribution - HRM 188.5



Note: Data have been adjusted for analytical bias. Median congener distributions are presented for sample results with total PCB concentrations greater than the practical quantitation limit (44 ng/l). Includes duplicate and archive results. Summer (June-September) statistics do not include data obtained on July 31 as the distribution resembled unaltered Aroclor 1242 which was not typical of the congener distributions during that time period. Transect data from Fall 1996 were not included.

APPENDIX C

USGS Hudson River flow at Fort Edward

Appendix C. Hudson River discharge data at Fort Edward

River discharge data presented in this appendix were collected at the United States Geological Survey (USGS) Fort Edward gaging station (Station number 01327750). Fort Edward flow data for the period 1991 through 1996 are presented in Figure C-1. To assist with interpretation of high flow data, estimated flood event reoccurrences are presented below:

Table C-1. *Estimated daily flood levels*

Reoccurrence Period (years)	1931-1989 Floods Daily Mean Flow (cfs)
5	28,000
10	32,000
25	36,900
50	40,300
100	43,600

Source: USEPA 1991

Comparisons of the annual variability of seasonal flows are also provided for 1991 through 1996 (Figures C-2 through C-5).

The Fort Edward discharge data were obtained from the USGS at two levels of detail consisting of *unit values* collected at 15-minute intervals and *mean daily flows*. Shortly after the data are collected they are available on the Internet qualified as *provisional*. *Final* mean daily values are published approximately one year after the end of a water year which extends from October to September of the following year. For example, water year 1996 extends from October 1995 to September 1996.

Unit values

The USGS automatic gage at Fort Edward records river stage height at 15-minute intervals. O'Brien & Gere converted stage height data into unit discharge values using the current USGS rating table (identified as "Number 7"). Until the final mean daily flows are published, USGS reportedly reviews and edits the unit discharge values file to correct for identified inaccuracies. Inaccuracies in the data may be present because of instrument malfunctions or physical changes at the measurement site.

Although USGS may update the file, the unit values file does not contain footnotes, deletions or other means of distinguishing valid from spurious data. The most accurate unit values file is available from the USGS after the final mean daily values are published. However, the unit value data is not published as final.

Mean daily values

Final mean daily discharge values through September 1996 are presented in the tables and figures included with this report. According to USGS, the final data are generated through a detailed verification and evaluation of unit values data. These final values are considered the best possible estimates of river flow measured at the gaging station.

For data collected between October and December 1996, provisional mean daily discharge values are presented. Provisional mean daily values will contain the same inaccuracies as the associated unit values, and are subject to revision until final flows for the 1997 water year are published.

Data reduction

Hydrographs of the daily flow at Fort Edward for 1996 PCRDMP sampling dates are presented in Figures C-6 through C-64. The figures include the estimated parcel of water sampled corresponding to sample collection at the HRM 194.2 sampling station. Typically, samples were collected at HRM 188.5 approximately 15-20 minutes after the Fort Edward sample. This approximates the time lag expected for hydrologic changes observed at Fort Edward to be observed at the dam during low flow (HydroQual 1997). Therefore, instantaneous flows during sample collection at HRM 188.5 are expected to be approximated by the instantaneous flows identified for HRM 194.2 sample collection identified in the figures. The time travel for a parcel of water to travel from Fort Edward to Thompson Island Dam (Table C-2) is different from the hydrologic lag time.

USGS reported that several problems occurred relating to the 1996 river discharge values at Fort Edward. Ice damaged the gage orifice in January, affecting gage readings through the beginning of 1996. Algae blockage compounded the problems beginning in March and gradually worsened through May. The raw data collected from May through September was considered unreliable. Due to scheduling difficulties, river flows could not be shut down to allow for repair of the orifice until September. USGS adjusted the data to compensate for the gage malfunction. The published mean daily values represent the best possible estimate of river flow for PCRDMP sample dates between January and September 1996.

To the extent possible, sample collection at HRM 194.2 and the plunge pool/boat launch (Section 1.2) were based on time of travel to evaluate a single parcel of water (see section below). The timing of sampling was based on instantaneous flow readings obtained from the USGS gaging station at Fort Edward prior to sampling and on the time of travel estimates. Time of travel estimates for the plunge pool and boat launch may be unreliable due to the flow characteristics at the base of Bakers Falls. In particular, during low flow water is diverted through the hydroelectric facility and the flow from the pool/boat launch area is reduced. Under those circumstances a large volume of the water at the base of Bakers Falls is stored and movement of the water mass downstream of the plunge pool/boat launch area is not represented by river flow.

The reliability of instantaneous flow data was evaluated by comparing the two mean daily flow estimates: The mean daily flow estimated by USGS was compared to the mean daily flow estimate calculated as the average of raw instantaneous flow data collected at 15-minute intervals. The results of this comparison suggest that the USGS mean daily flows include a factor that corrects for high bias of instantaneous measurements. The two mean daily flows are presented on the hydrographs of PCRDMP sampling dates in Figures C-6 through C-64.

Time of travel estimates

Time of travel estimates allow monitoring of a single parcel of water traveling down the river to facilitate evaluation of spatial changes of a water mass (Section 4.3.3). Time of travel estimates used for the PCRDMP (Table C-2) were developed based on field experience obtained during the sampling conducted for the *1996-1997 Thompson Island Pool Studies* (O'Brien & Gere 1998), *1995 River Monitoring Test* (O'Brien & Gere 1996), float surveys conducted for the PCRDMP (O'Brien & Gere 1994b, 1993a), and time of travel studies by others (Tofflemire 1984; USGS 1969).

Several water column investigations performed in 1996 relied on time of travel estimates, including hydroelectric facility monitoring presented in this report.

the flow range of 1,000 cfs to 34,000 cfs. These estimates were in close agreement with previous time of travel estimates used for hydroelectric facility monitoring and transect studies (O'Brien & Gere 1996, 1997) and Thompson Island Pool Time of Travel Surveys (O'Brien & Gere 1998; HydroQual and O'Brien & Gere 1996, HydroQual 1997) which were conducted at low flows, less than 8000 cfs.

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Tofflemire, T.J. 1984. "PCB Transport in the Ft. Edward Area". *Northeastern Environmental Science*, 3:202-208.

U.S. Geological Survey. 1969. Time of Travel Study Upper Hudson River. Fort Edward, New York to Troy Lock Dam, Troy, New York, by H.A. Shindel, Report to Investigation, RI-10.

Table C-2. Time of Travel estimates (hours) from Bakers Falls.

Flow	Fort Edward		Thompson Island
(cfs)	USGS Gage	Rt. 197 Bridges	Dam (HRM 188.5)
1000	3.1	3.8	47.8
2000	1.3	2.0	25.1
3000	1.3	1.7	18.0
4000	1.2	1.5	14.2
5000	1.2	1.4	11.8
6000	1.1	1.3	10.2
7000	1.0	1.2	9.1
8000	1.0	1.1	8.2
9000	0.9	1.1	7.5
10000	0.9	1.0	6.9
11000	0.9	1.0	6.4
12000	0.9	1.0	6.0
13000	0.8	0.9	5.7
14000	0.8	0.9	5.4
15000	0.8	0.9	5.2
16000	0.8	0.9	4.9
17000	0.8	0.8	4.8
18000	0.7	0.8	4.6
19000	0.7	0.8	4.4
20000	0.7	0.8	4.3
21000	0.7	0.8	4.2
22000	0.7	0.8	4.1
23000	0.7	0.8	4.0
24000	0.7	0.8	3.9
25000	0.7	0.8	3.8
26000	0.7	0.7	3.7
27000	0.7	0.7	3.6
28000	0.7	0.7	3.5
29000	0.7	0.7	3.5
30000	0.7	0.7	3.4
31000	0.7	0.7	3.4
32000	0.7	0.7	3.3
33000	0.7	0.7	3.3
34000	0.7	0.7	3.3

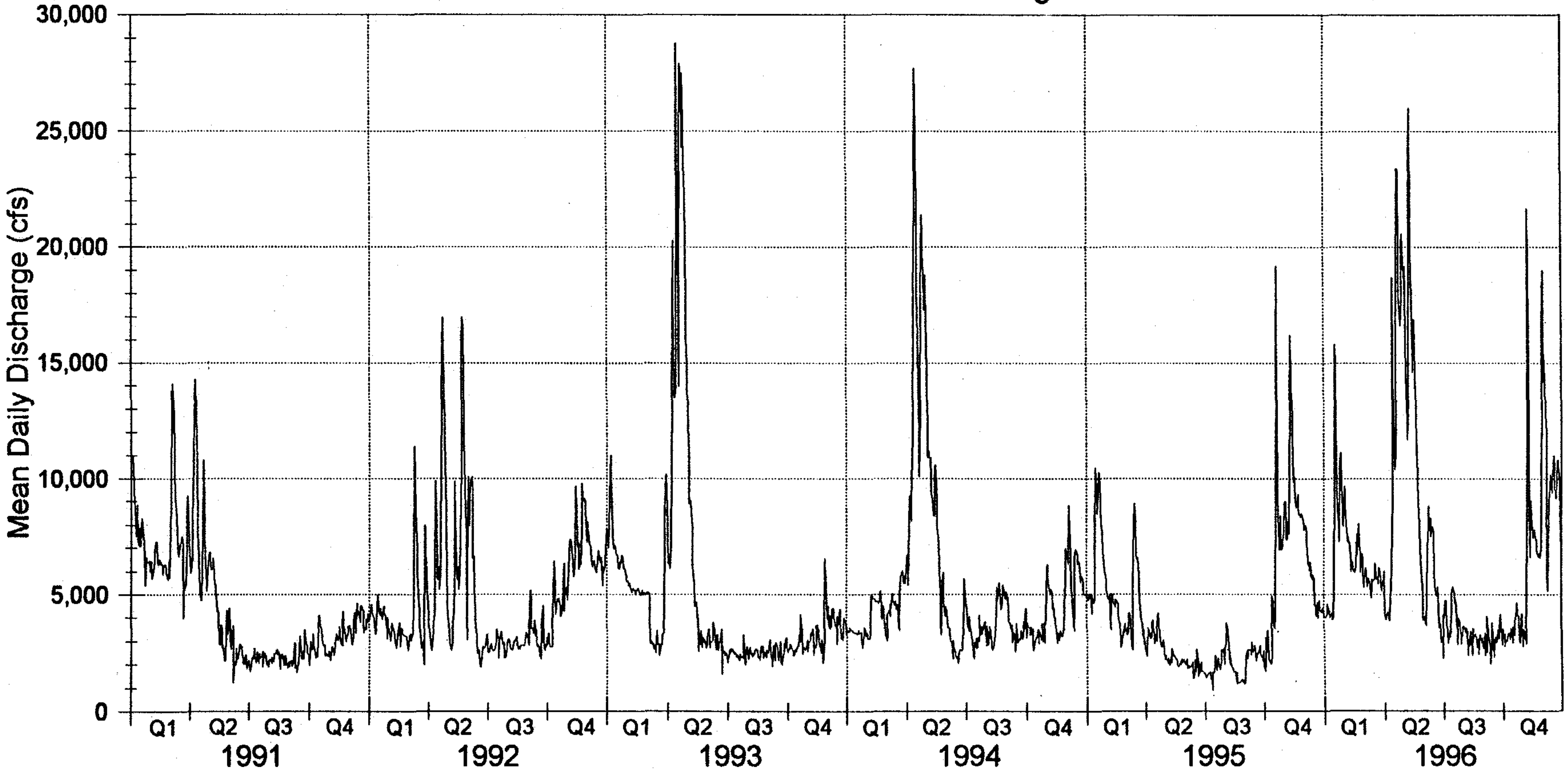
Notes:

Time of travel estimates were developed based on field experience obtained during the transect sampling conducted during the 1996-1997 Thompson Island Pool Studies (O'Brien & Gere 1998), 1995 River Monitoring Test (O'Brien & Gere 1996), float surveys conducted for the PCRDMP (O'Brien & Gere 1994, 1993) and time of travel studies by others (Tofflemire 1984; USGS 1969).

Estimates revised April 1997.

Source: O'Brien & Gere Engineers, Inc.

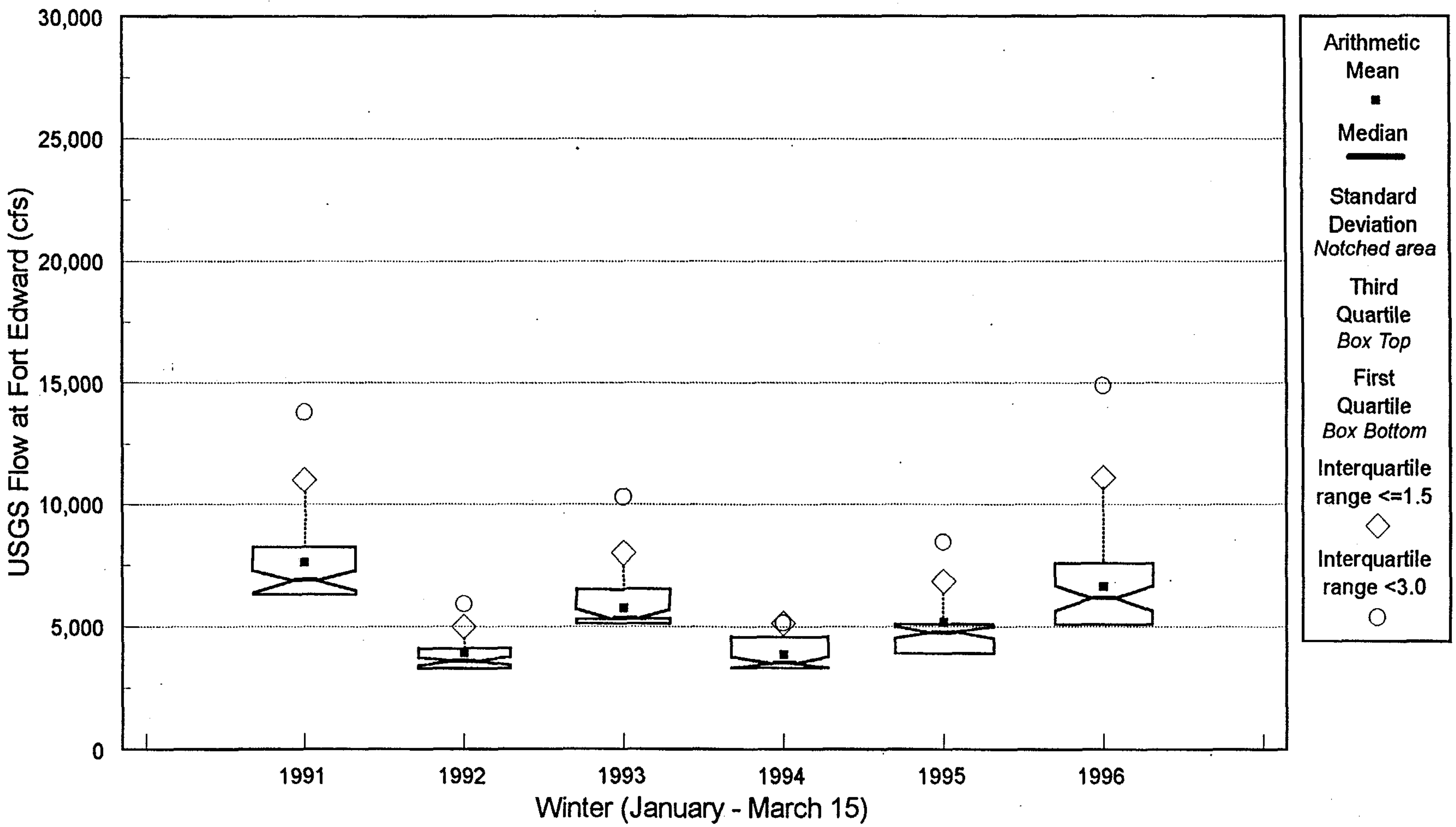
Figure C-1
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
Hudson River at Fort Edward 1991 through 1996



321790

Note: Mean daily discharge calculated by the USGS from adjusted unit values measured at the Fort Edward gaging station. Data are final for the time period 1991 through September 1996, and are preliminary from October 1996 through December 1996. Q indicates yearly quarter.

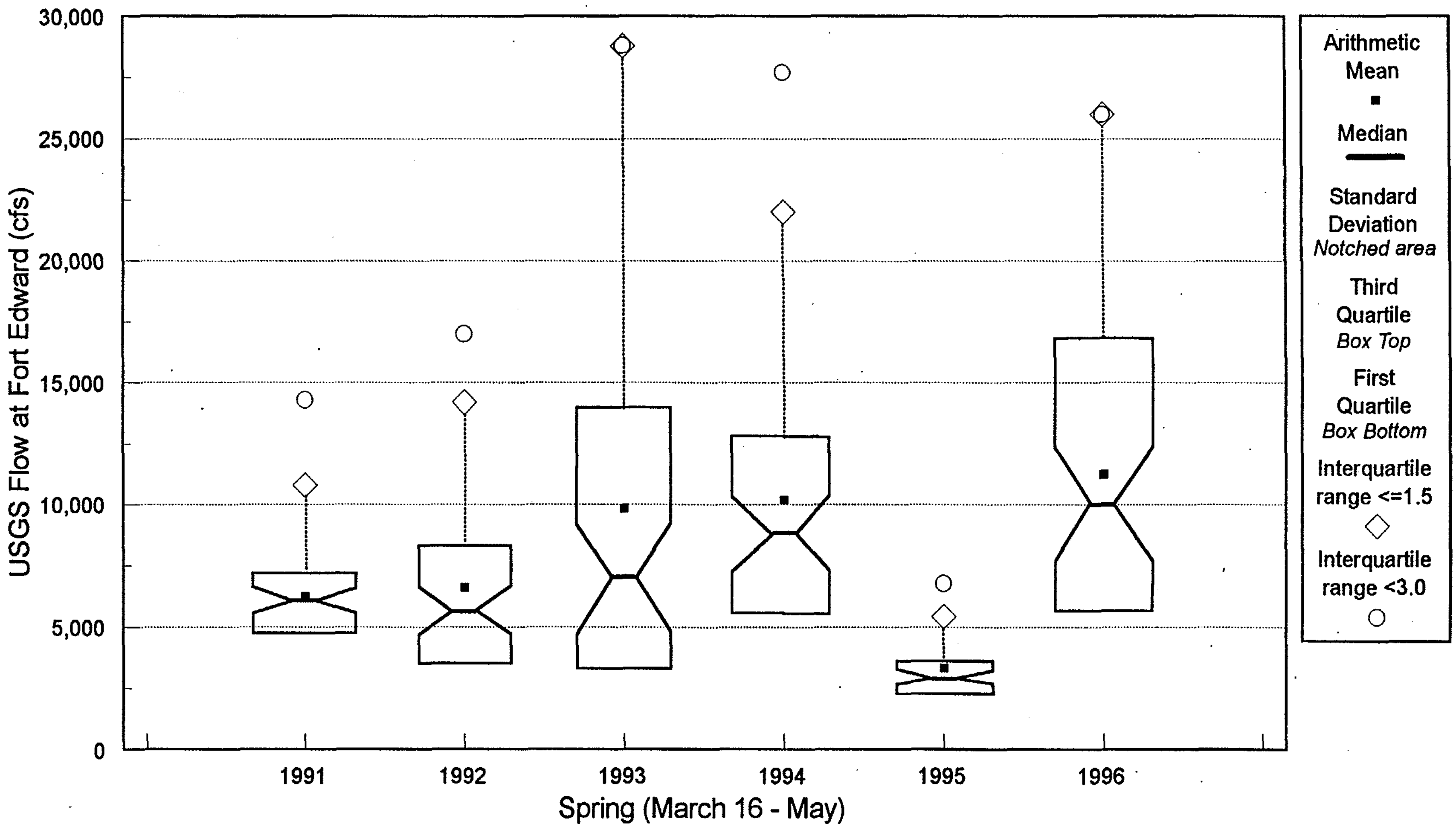
Figure C-2
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
Statistical Analysis: Winter USGS Fort Edward River Flow Data



321791

Note: Data presented are summaries of daily average discharges measured by USGS at the Fort Edward gaging station. Data are final through 1996. Box plots provide a summary of seven statistical components (see legend). When the notches of any two boxes overlap vertically, the medians are not statistically different at the 95% confidence level (Reckhow and Chapra 1983).

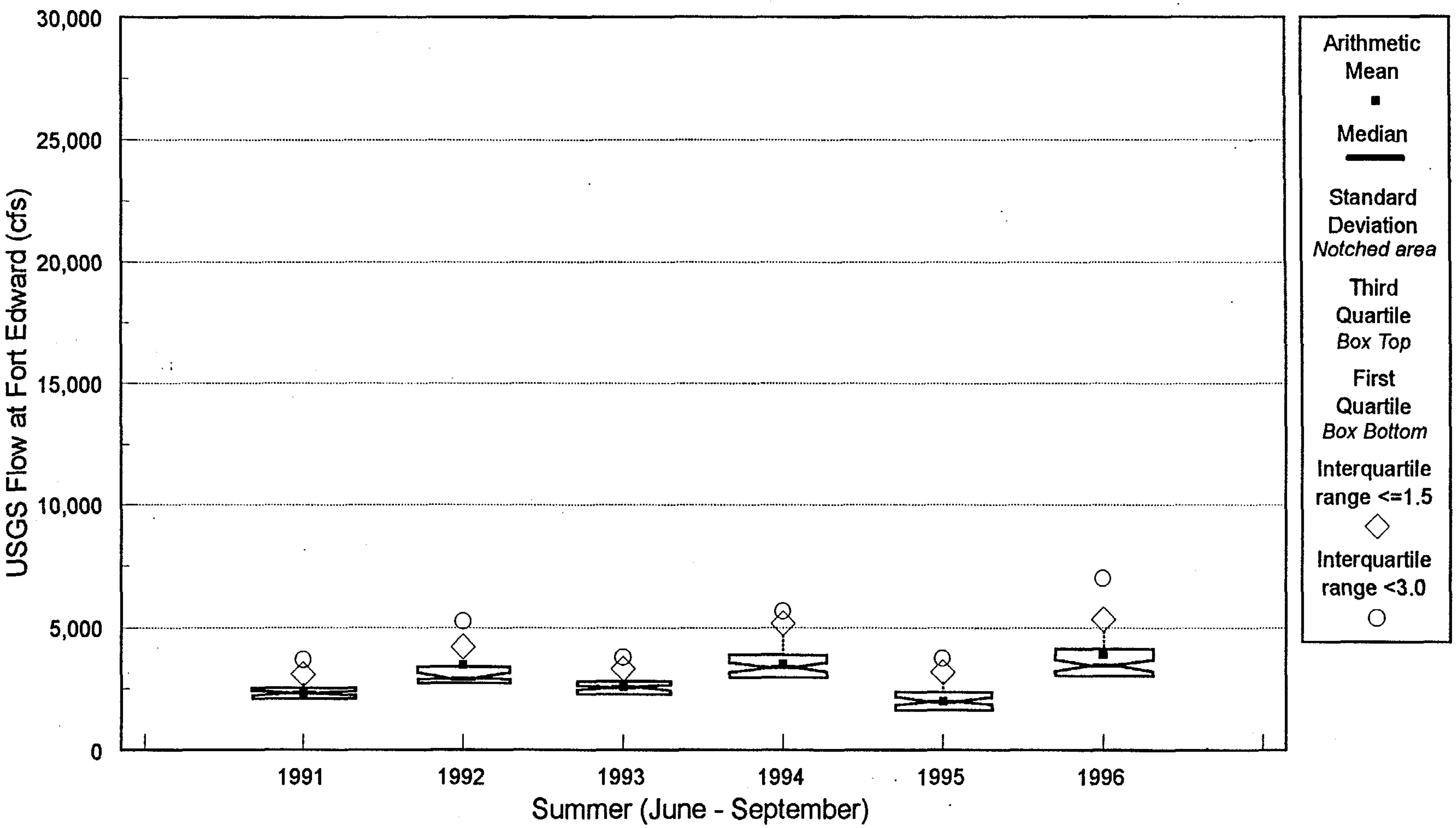
Figure C-3
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
Statistical Analysis: Spring USGS Fort Edward River Flow Data



Note: Data presented are summaries of daily average discharges measured by USGS at the Fort Edward gaging station. Data are final through 1996. Box plots provide a summary of seven statistical components (see legend). When the notches of any two boxes overlap vertically, the medians are not statistically different at the 95% confidence level (Reckhow and Chapra 1983).

321792

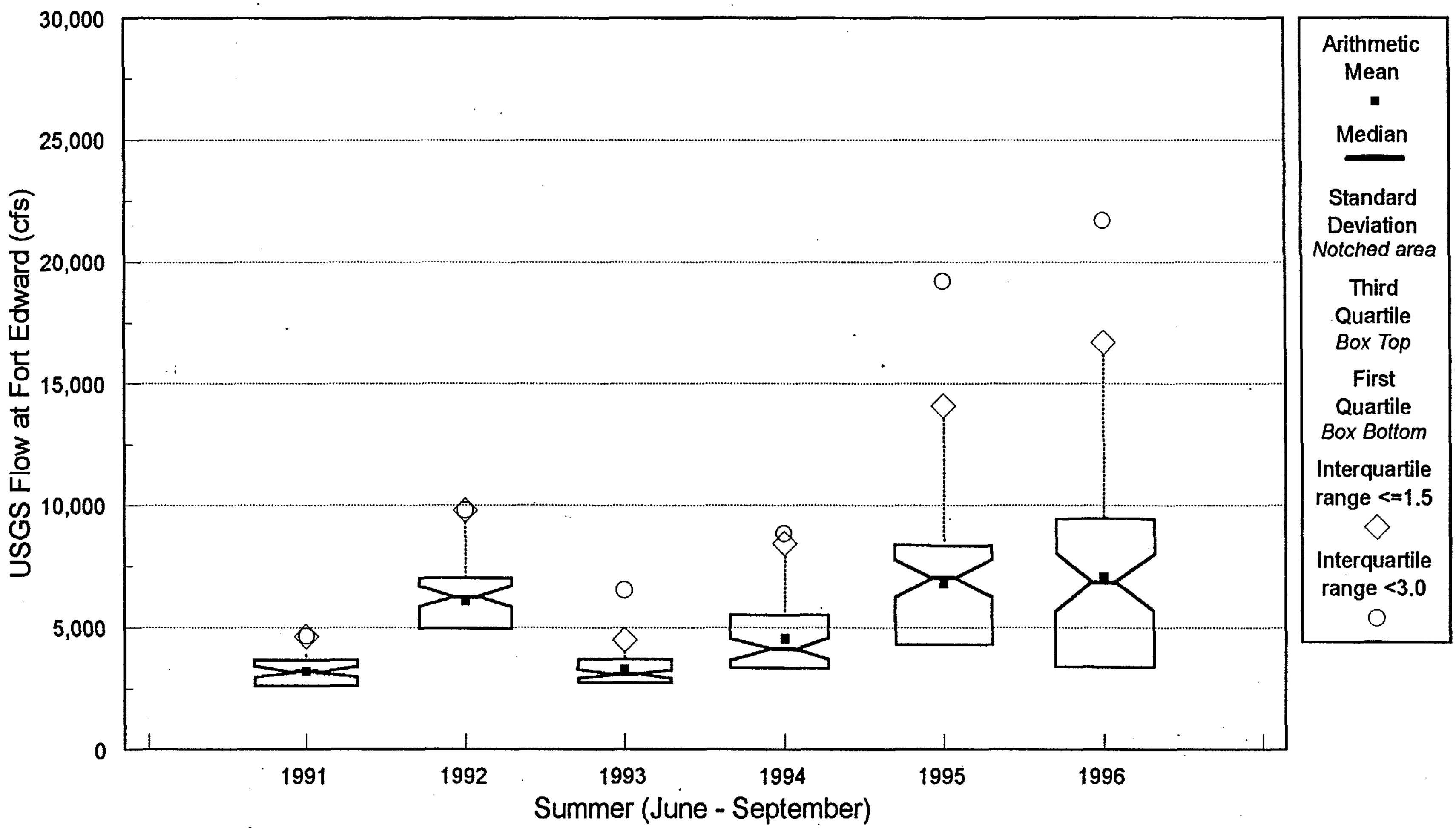
Figure C-4
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
Statistical Analysis: Summer USGS Fort Edward River Flow Data



321793

Note: Data presented are summaries of daily average discharges measured by USGS at the Fort Edward gaging station. Data are final through 1996. Box plots provide a summary of seven statistical components (see legend). When the notches of any two boxes overlap vertically, the medians are not statistically different at the 95% confidence level (Reckhow and Chapra 1983).

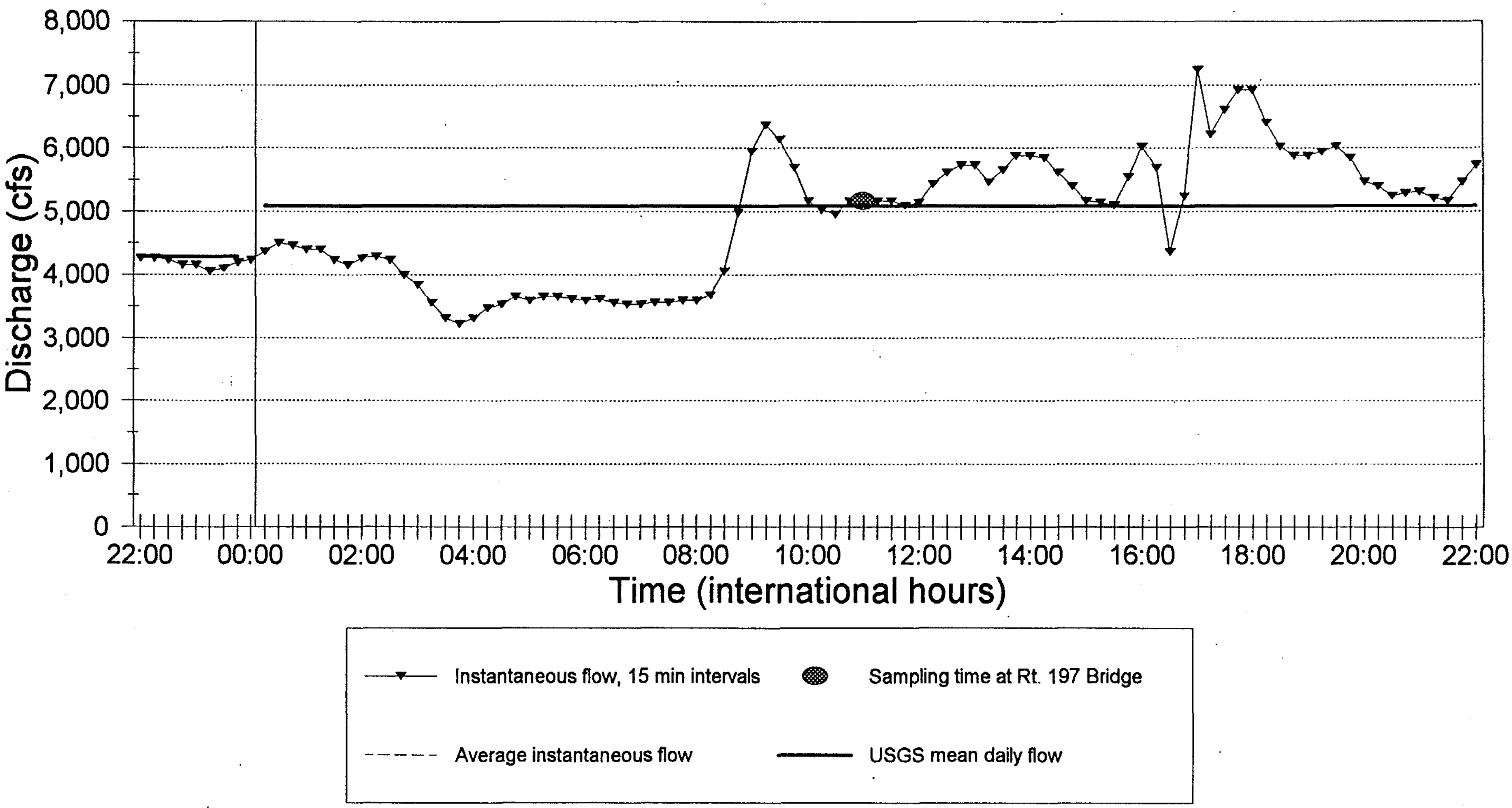
Figure C-5
General Electric Company - Hudson River Project
1996 Post-Construction Remnant Deposit Monitoring
Statistical Analysis: Fall USGS Fort Edward River Flow Data



321794

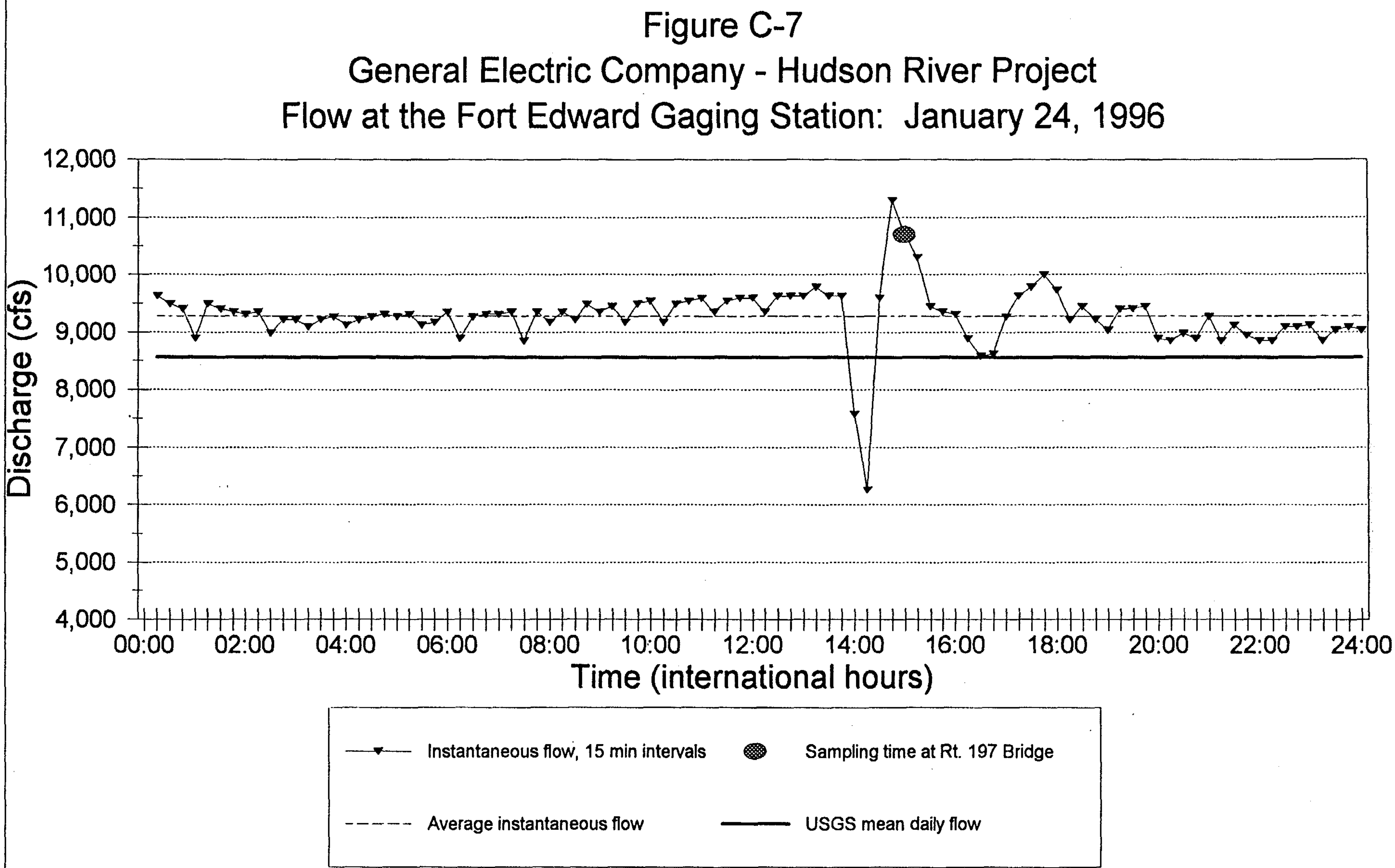
Note: Data presented are summaries of daily average discharges measured by USGS at the Fort Edward gaging station. Data are final through 1995 and preliminary for 1996. Box plots provide a summary of seven statistical components (see legend). When the notches of any two boxes overlap vertically, the medians are not statistically different at the 95% confidence level (Reckhow and Chapra 1983).

Figure C-6
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: January 18-19, 1996



Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

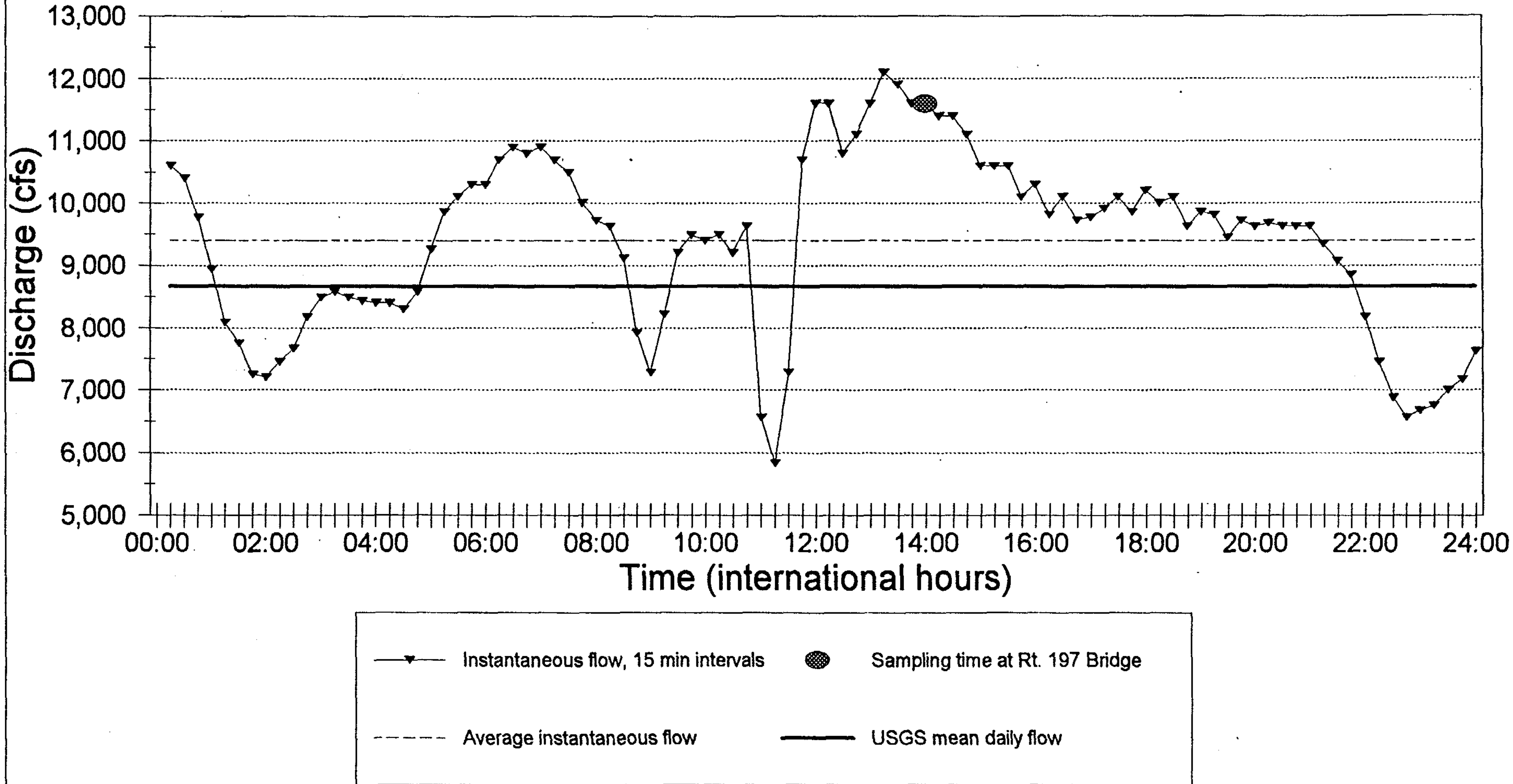
321795



Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

321796

Figure C-8
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: January 31, 1996



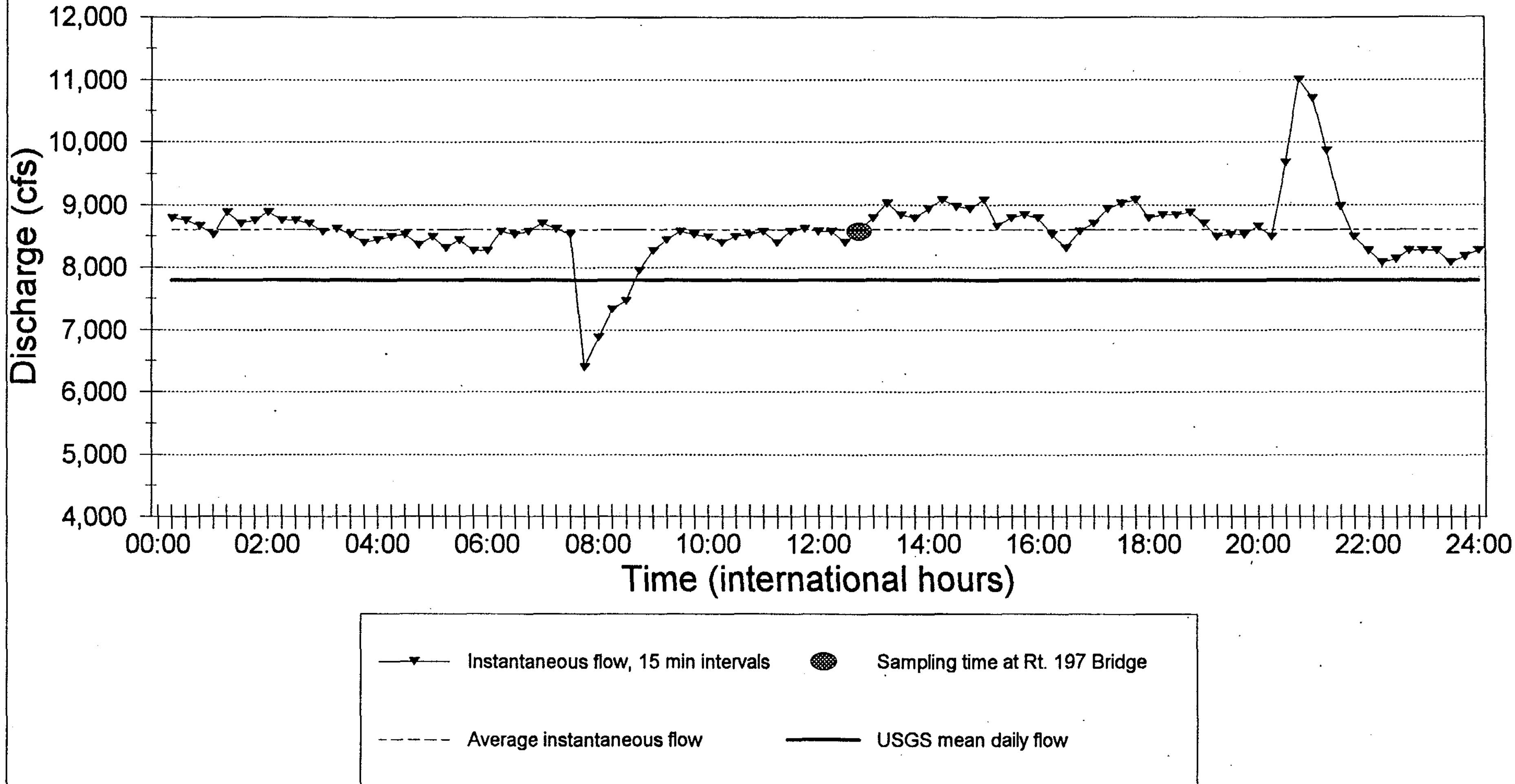
Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

321797

Figure C-9

General Electric Company - Hudson River Project

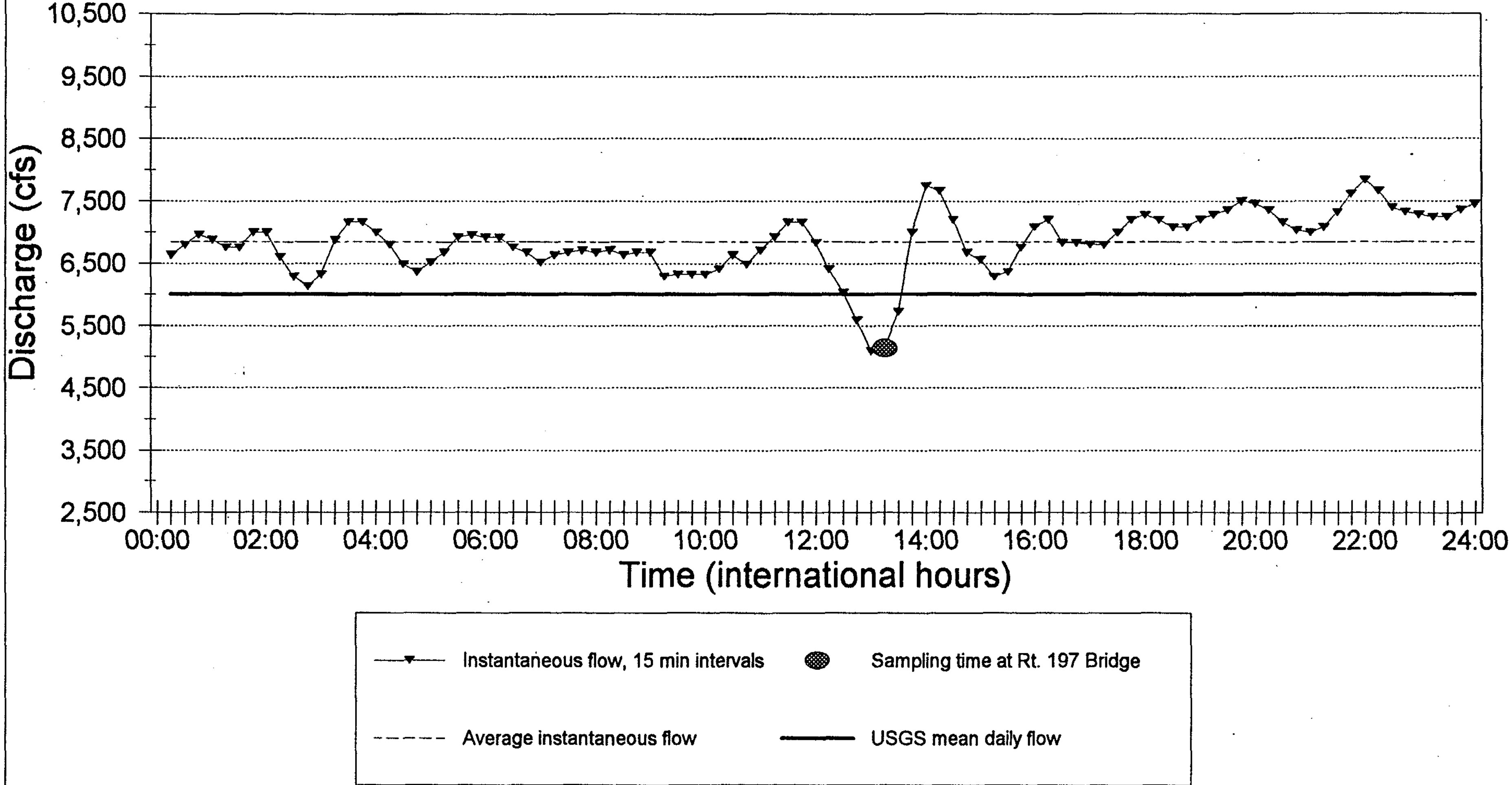
Flow at the Fort Edward Gaging Station: February 7, 1996



Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

321798

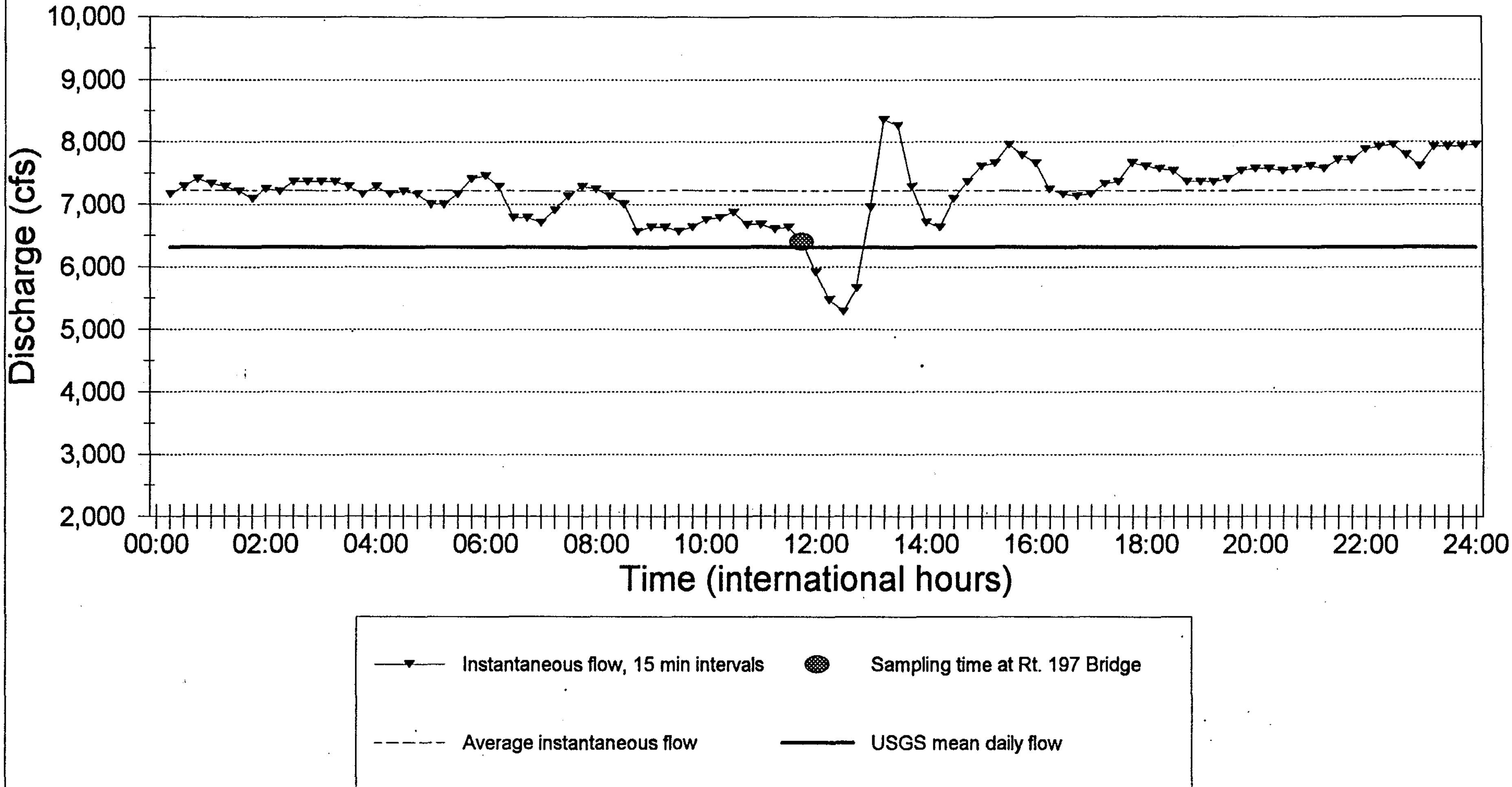
Figure C-10
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: February 14, 1996



Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

321799

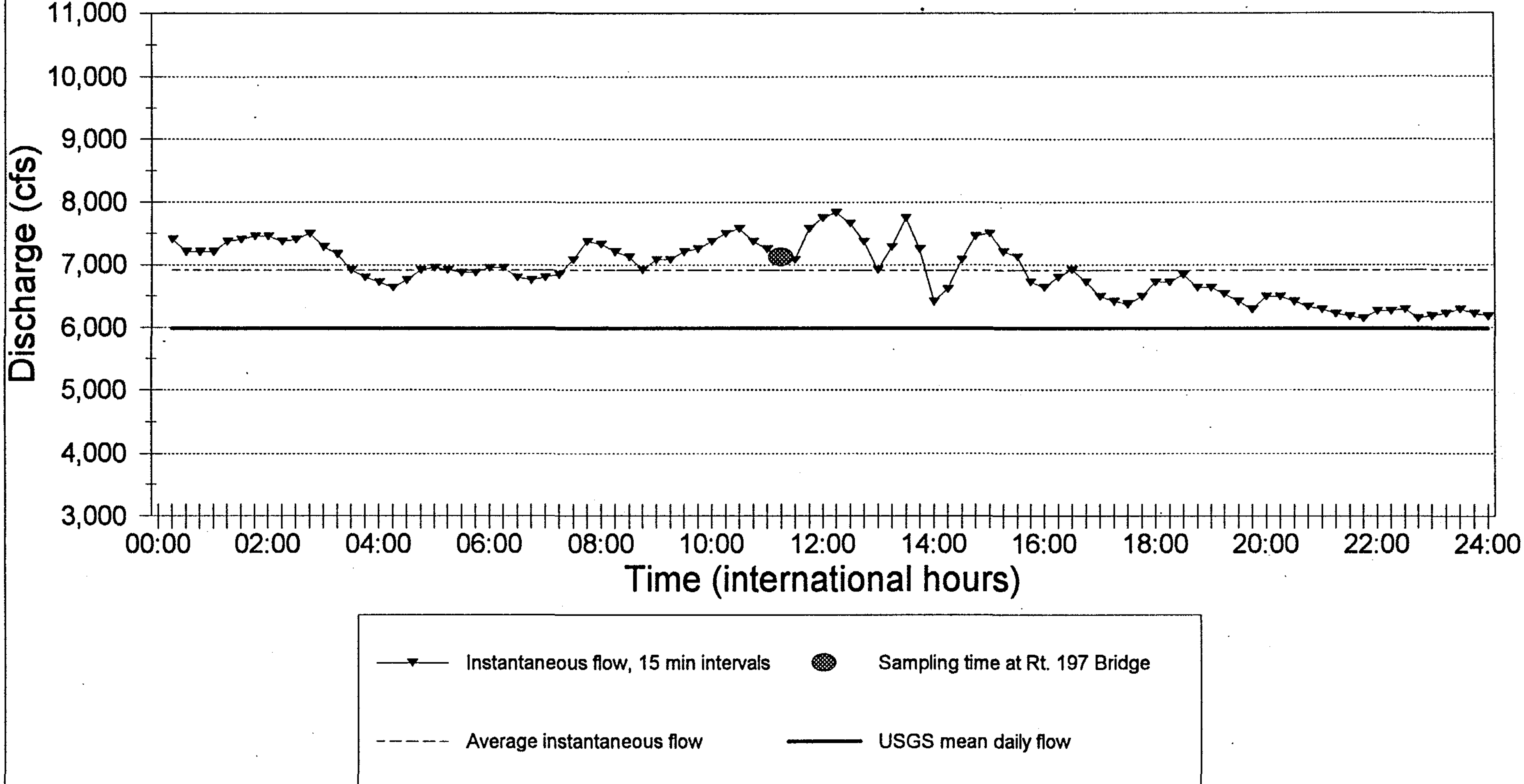
Figure C-11
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: February 21, 1996



Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

321800

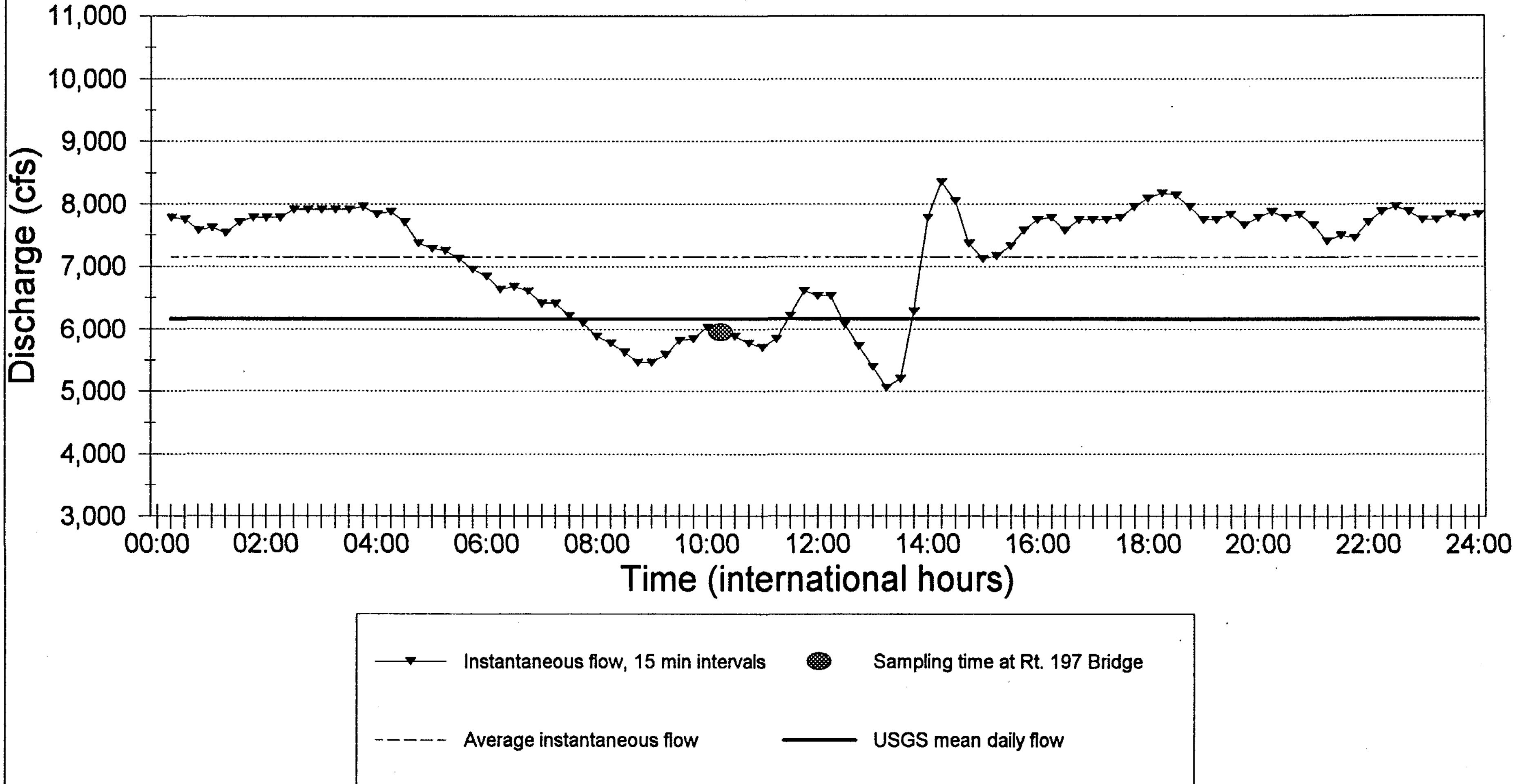
Figure C-12
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: February 28, 1996



Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

321801

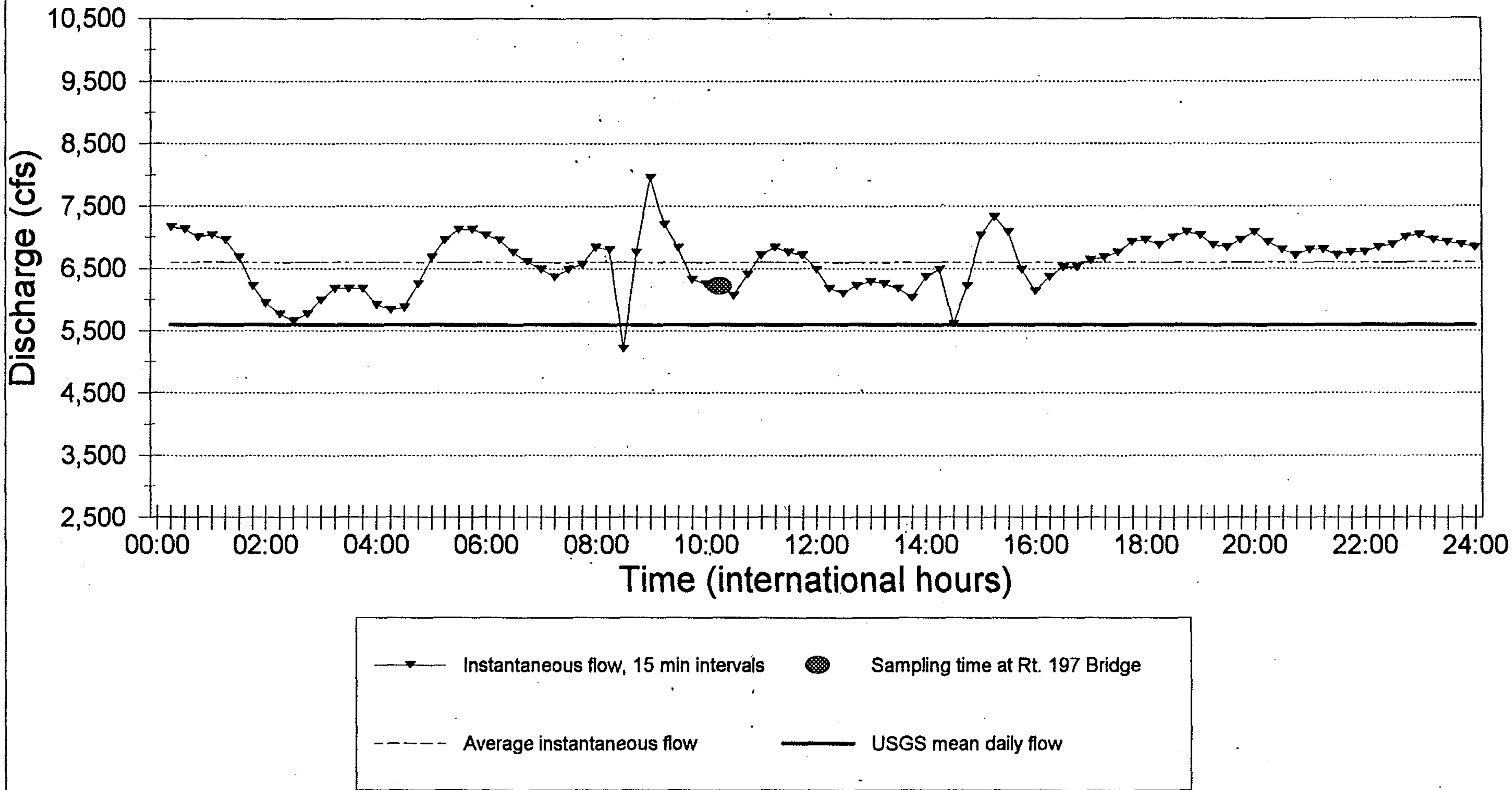
Figure C-13
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: March 06, 1996



Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

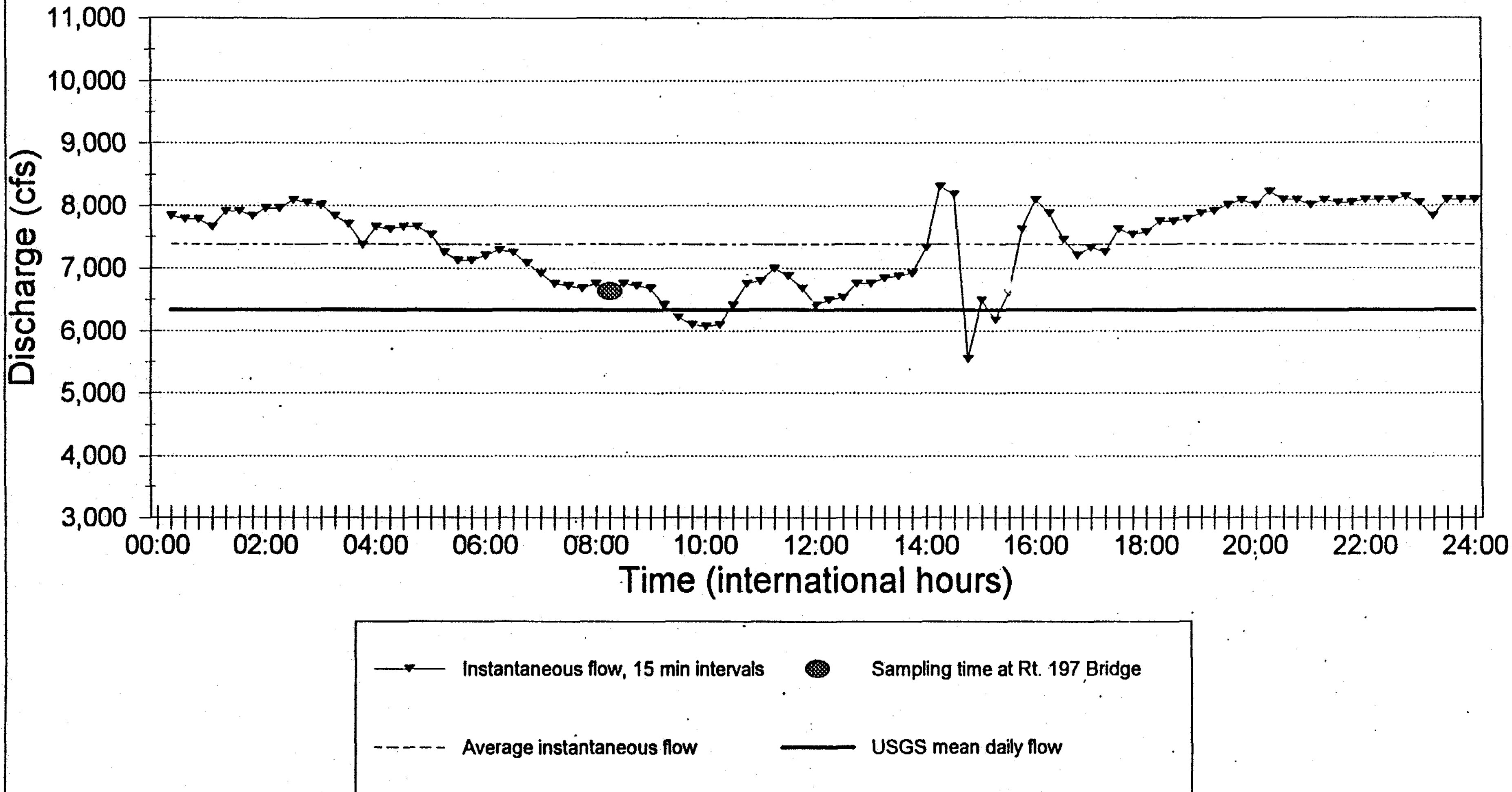
321802

Figure C-14
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: March 13, 1996



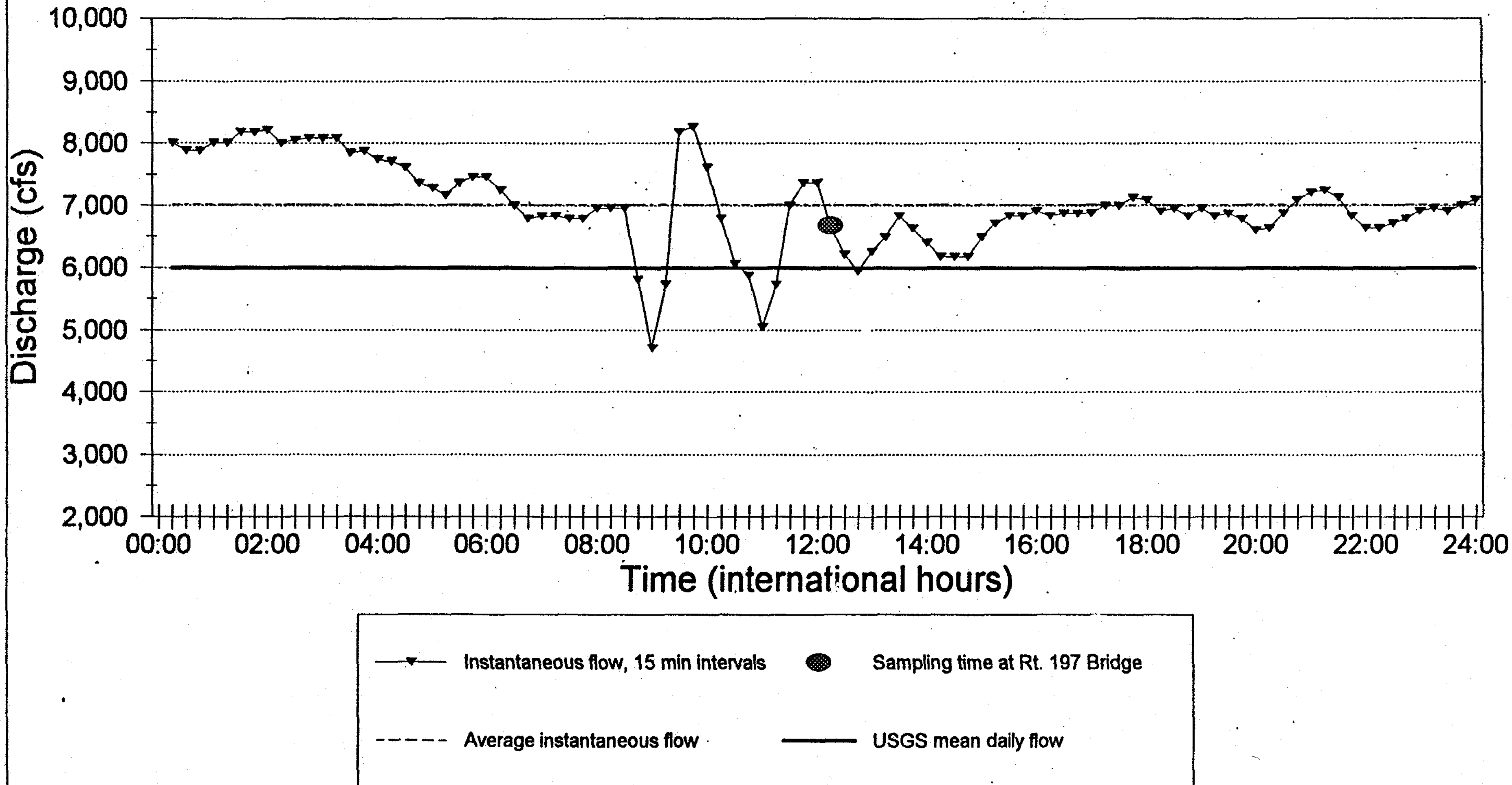
Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-15
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: March 21, 1996



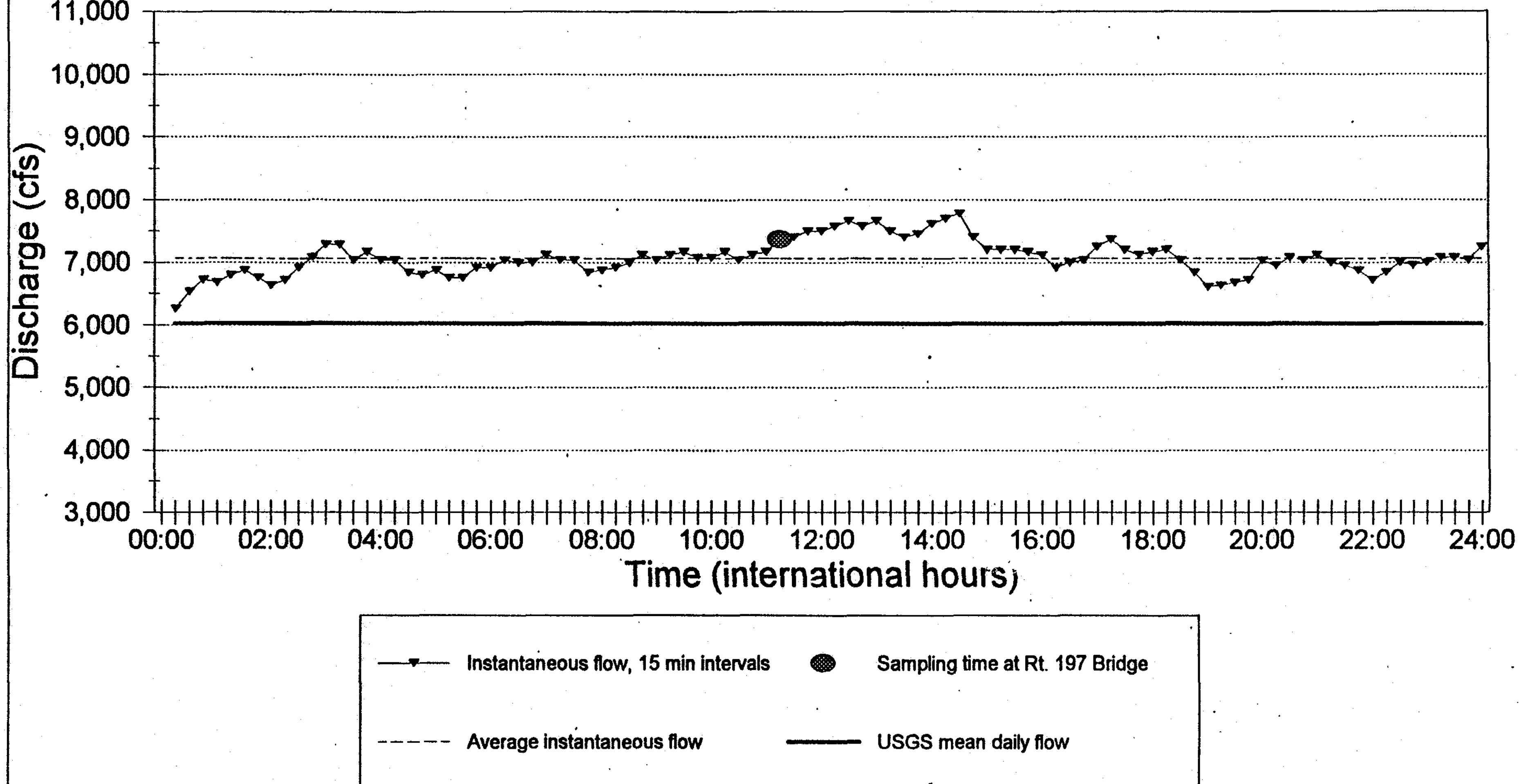
Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-16
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: March 28, 1996



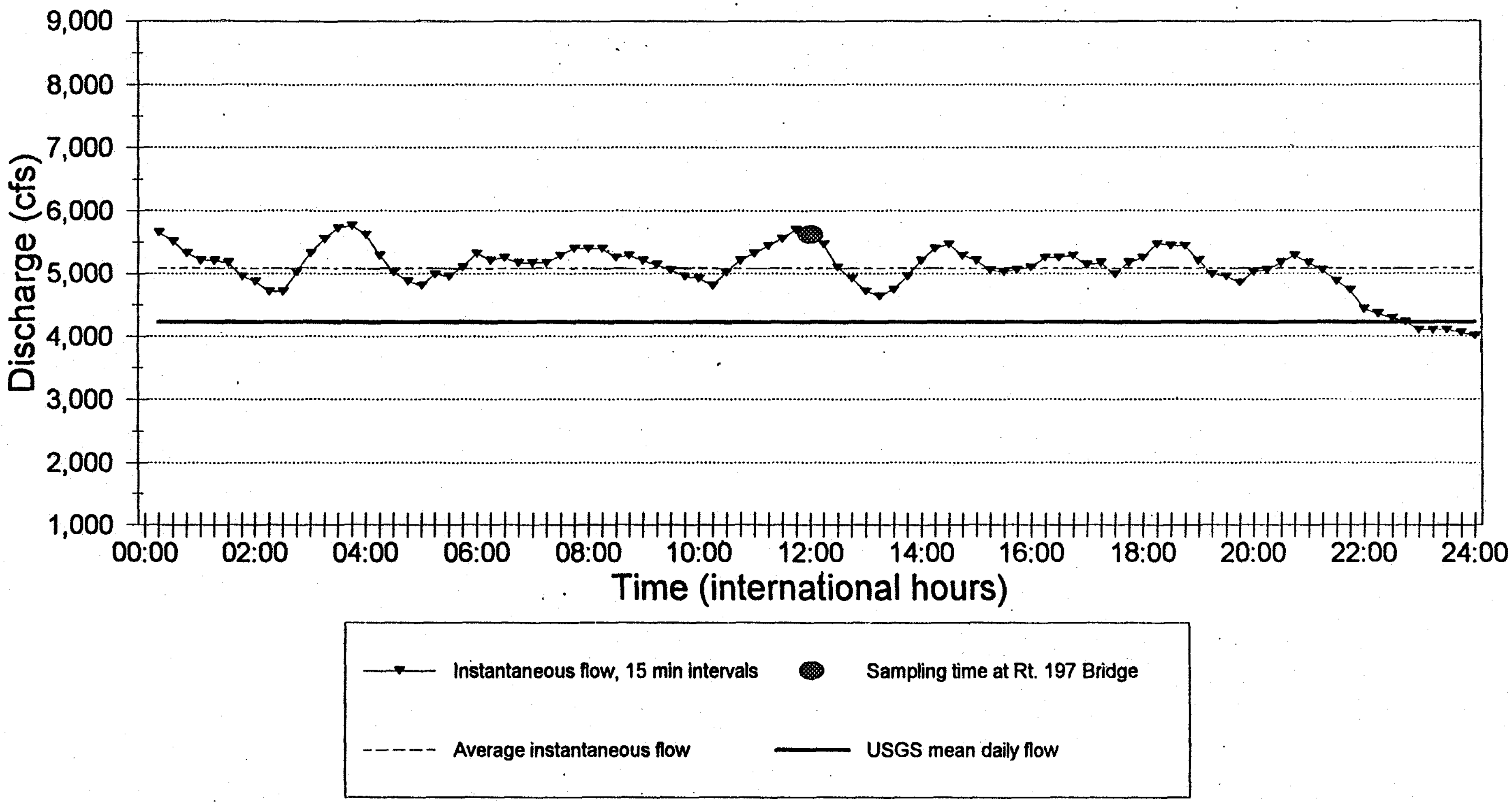
Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-17
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: April 3, 1996



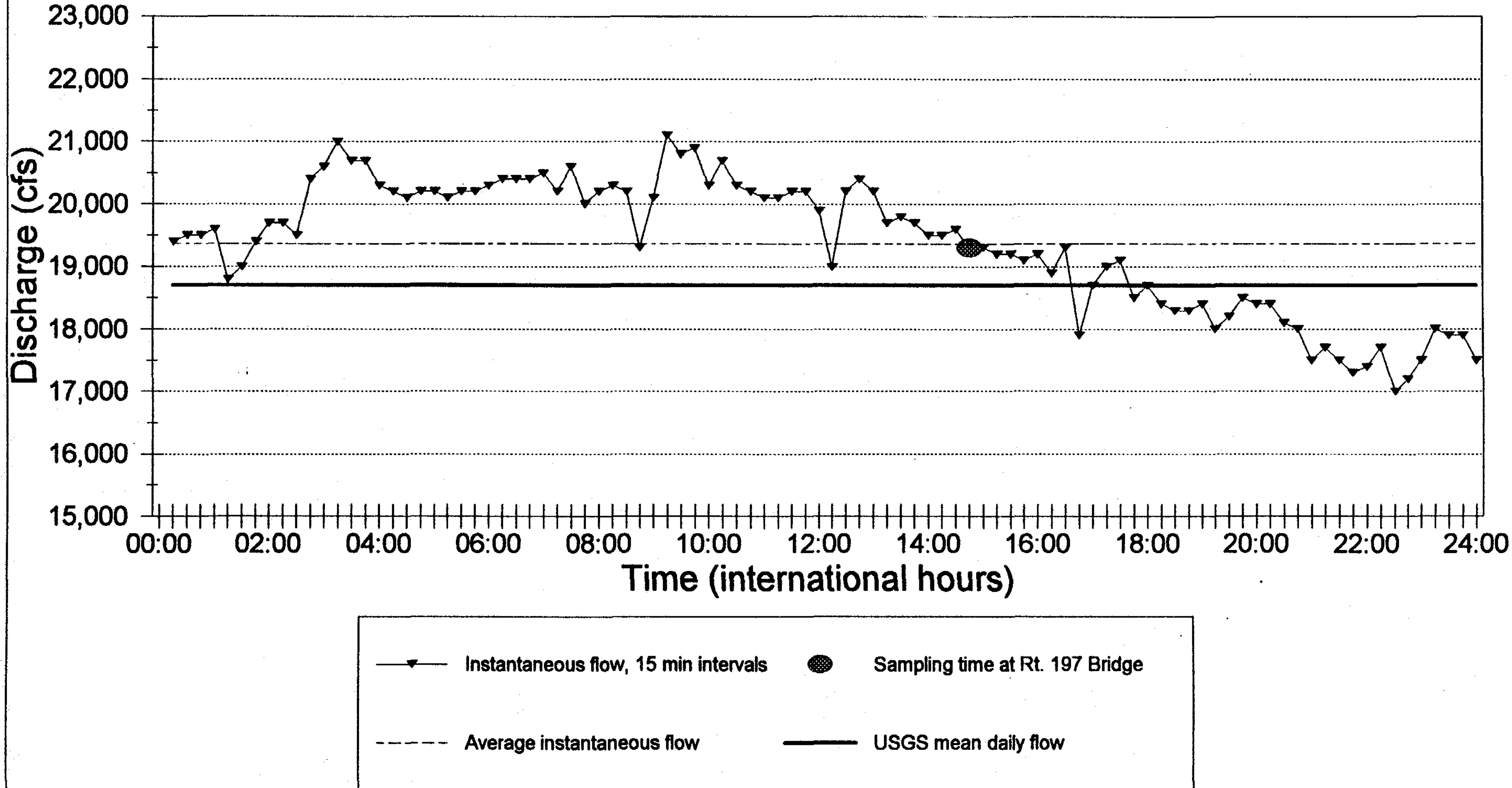
Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-18
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: April 10, 1996



Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

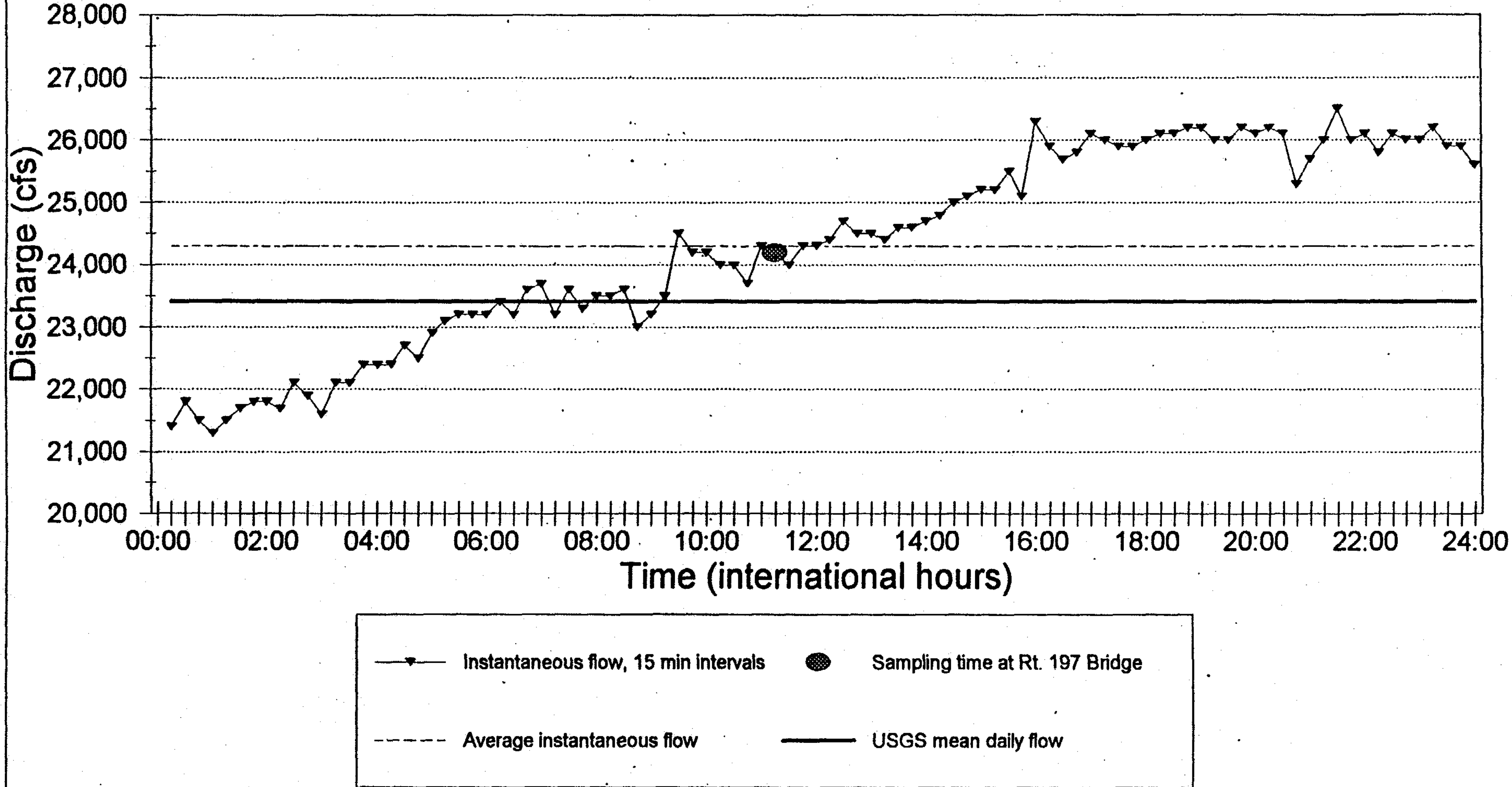
Figure C-19
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: April 17, 1996



Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

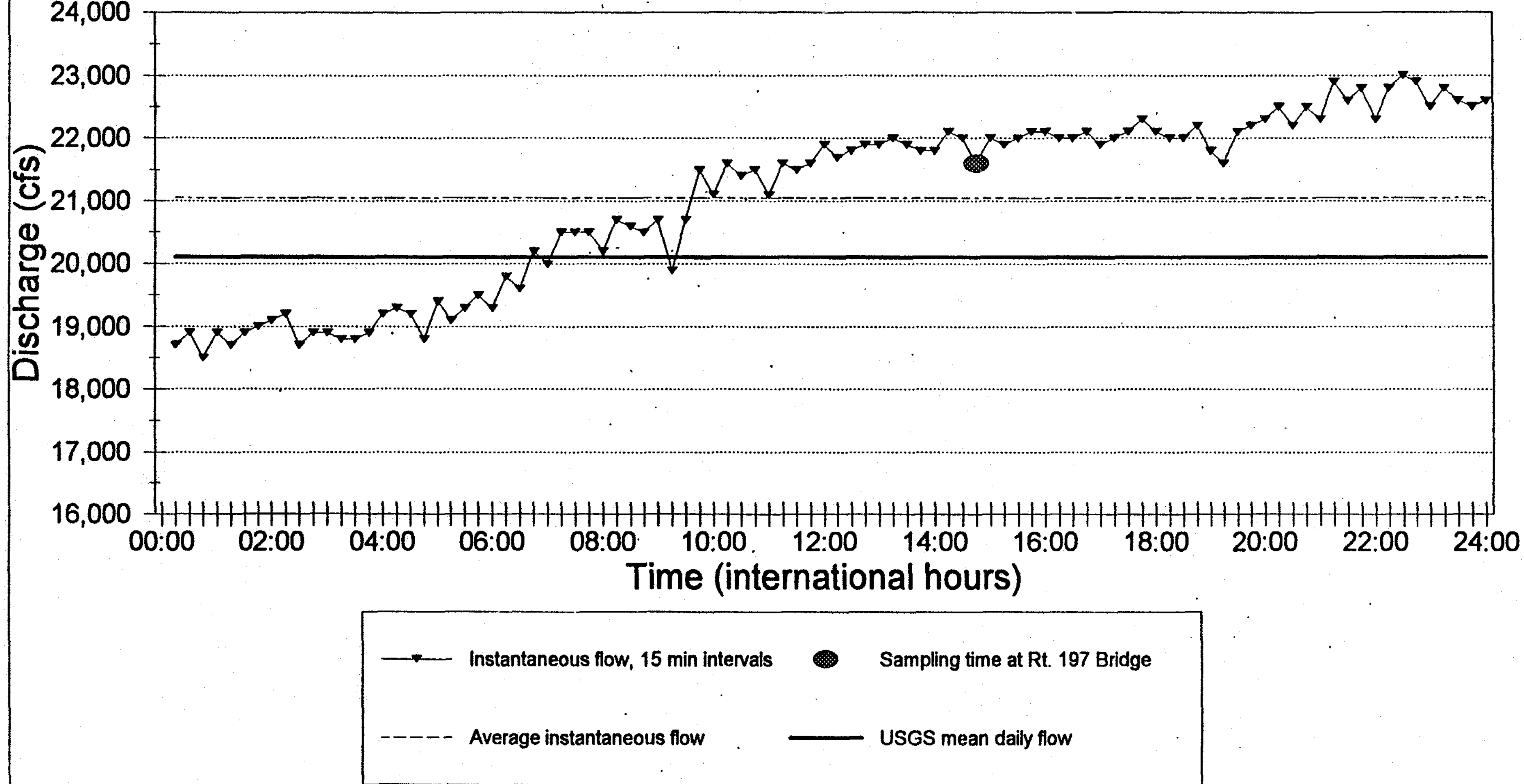
321808

Figure C-20
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: April 24, 1996



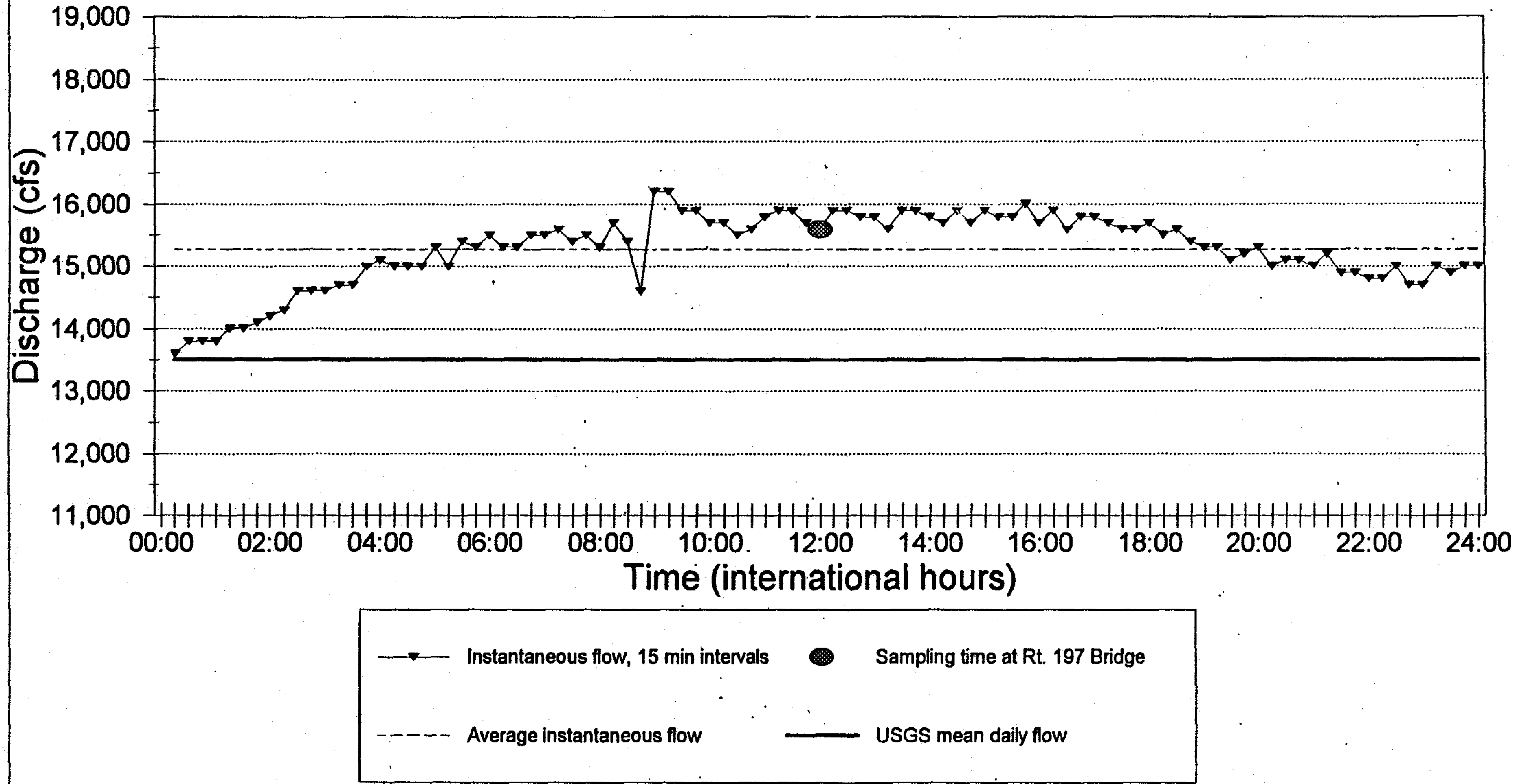
Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-21
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: May 1, 1996



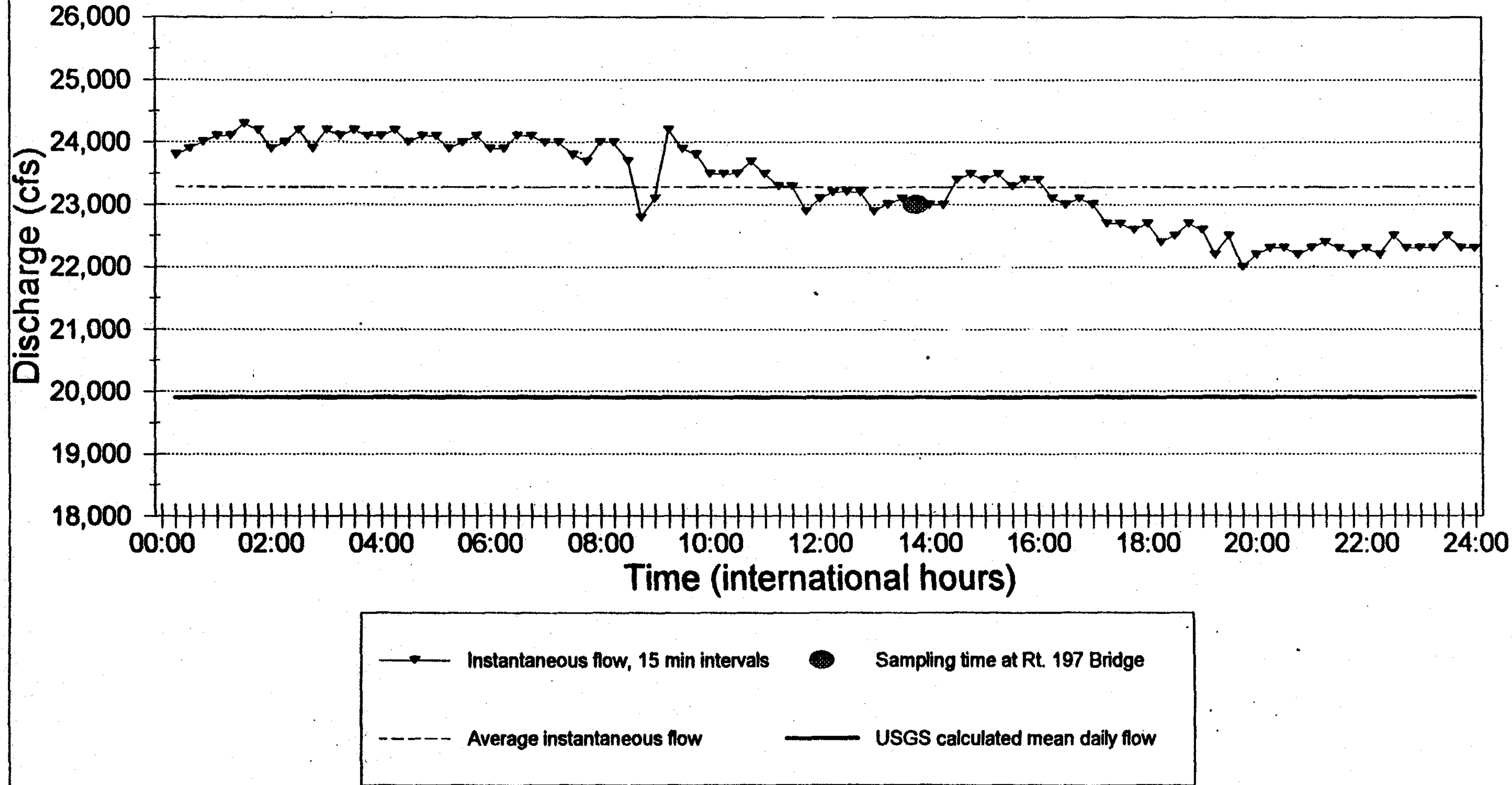
Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-22
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: May 8, 1996



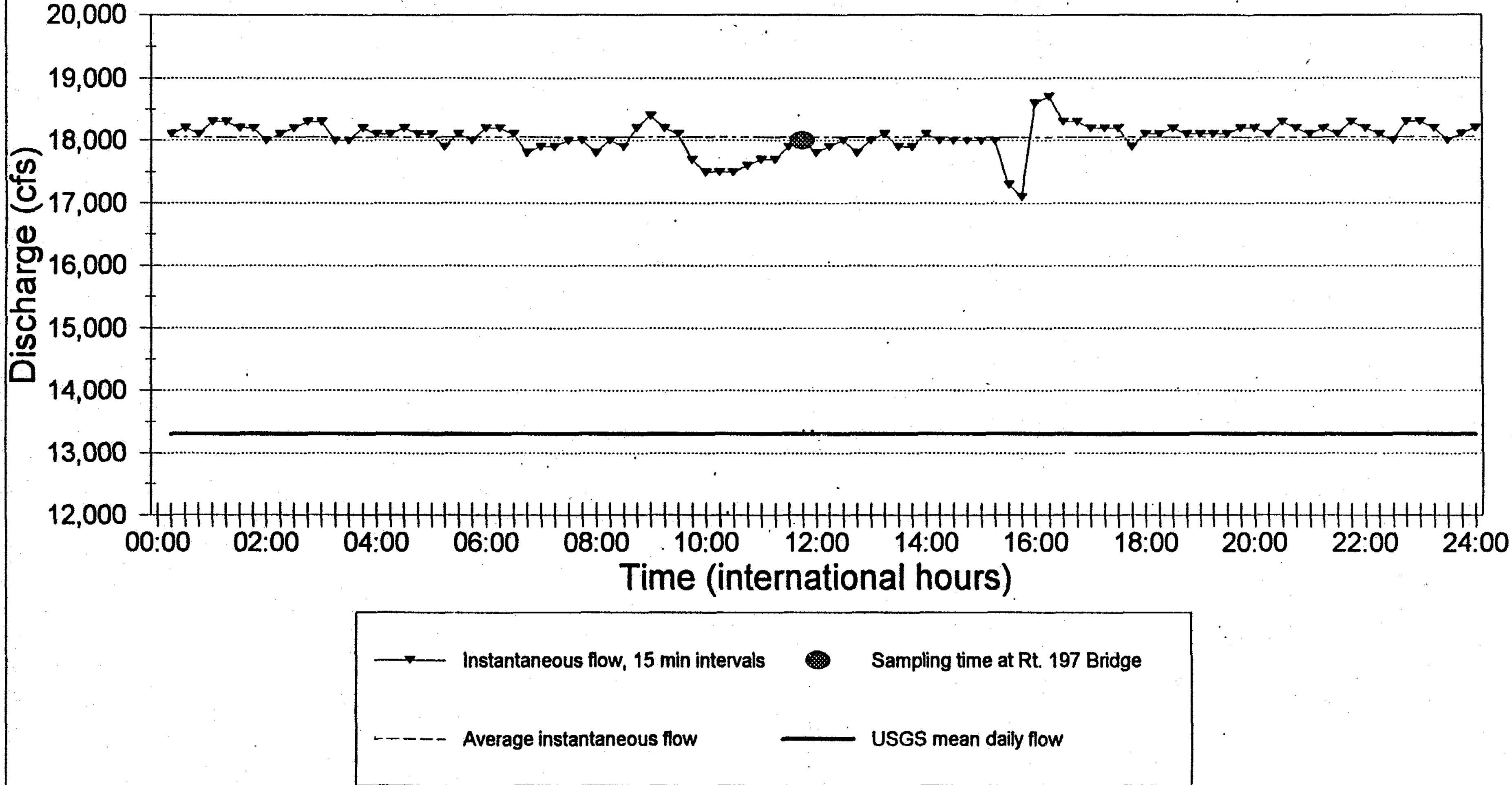
Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-23
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: May 15, 1996



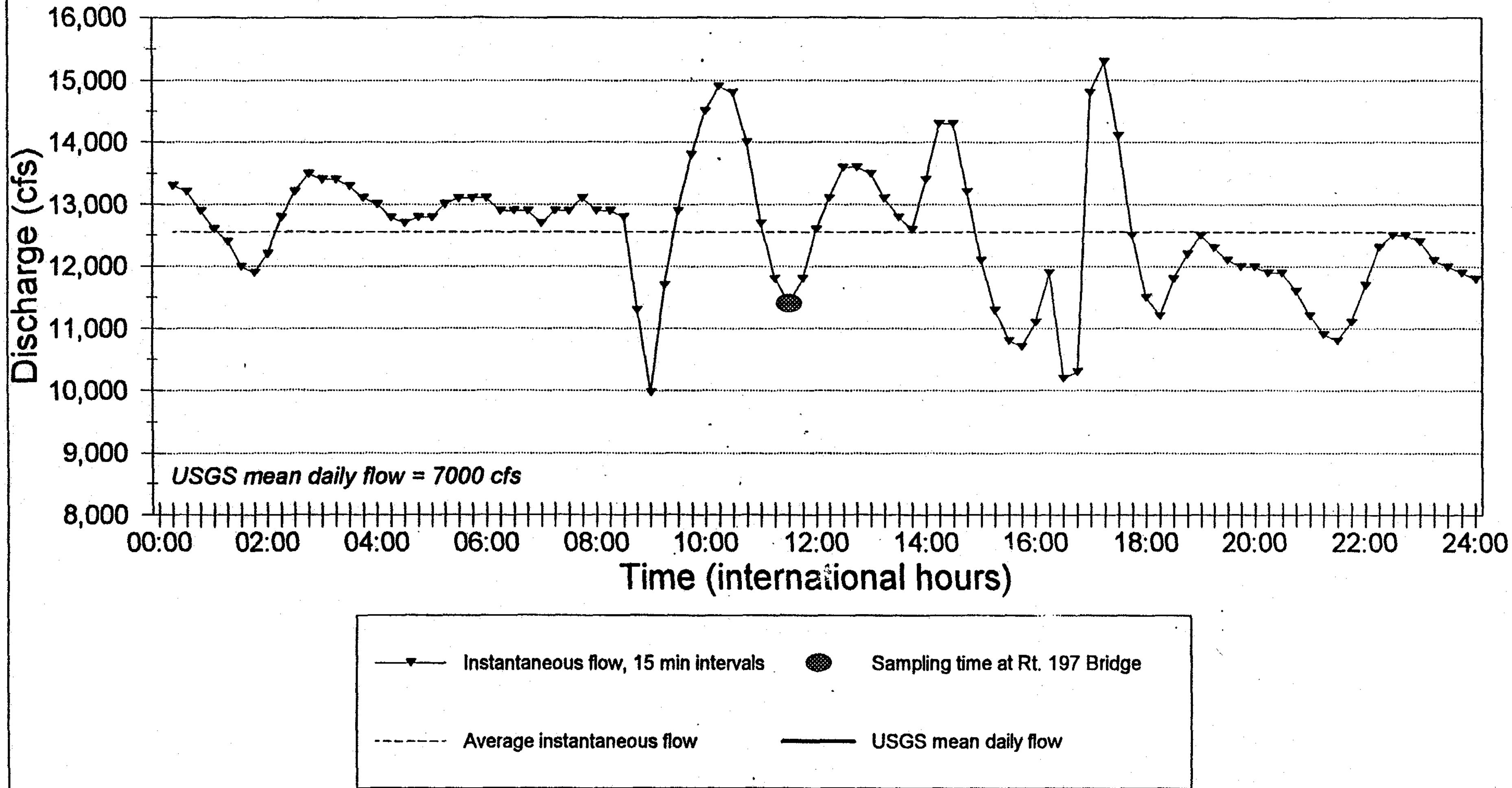
Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-24
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: May 22, 1996



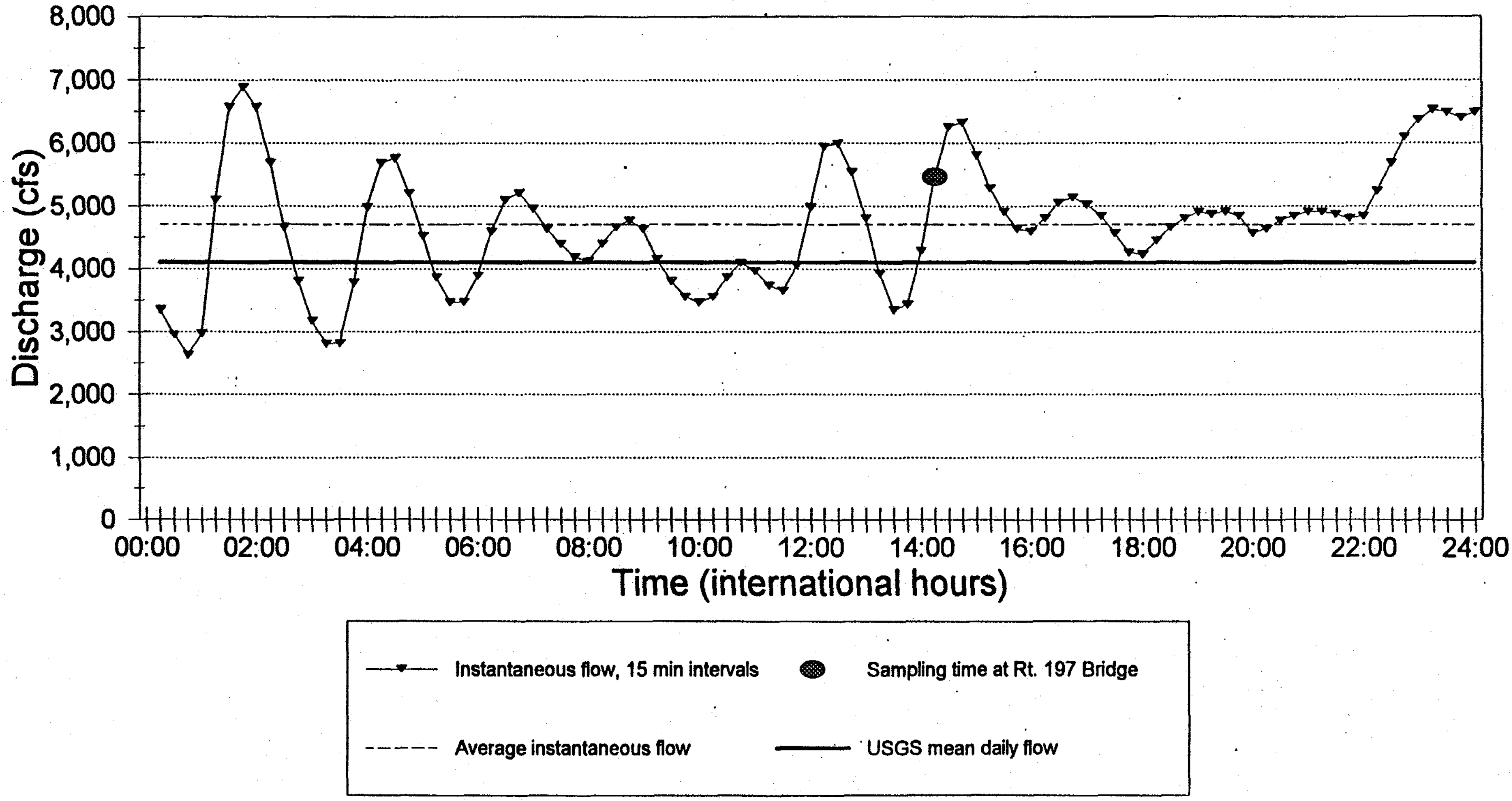
Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-25
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: May 29, 1996



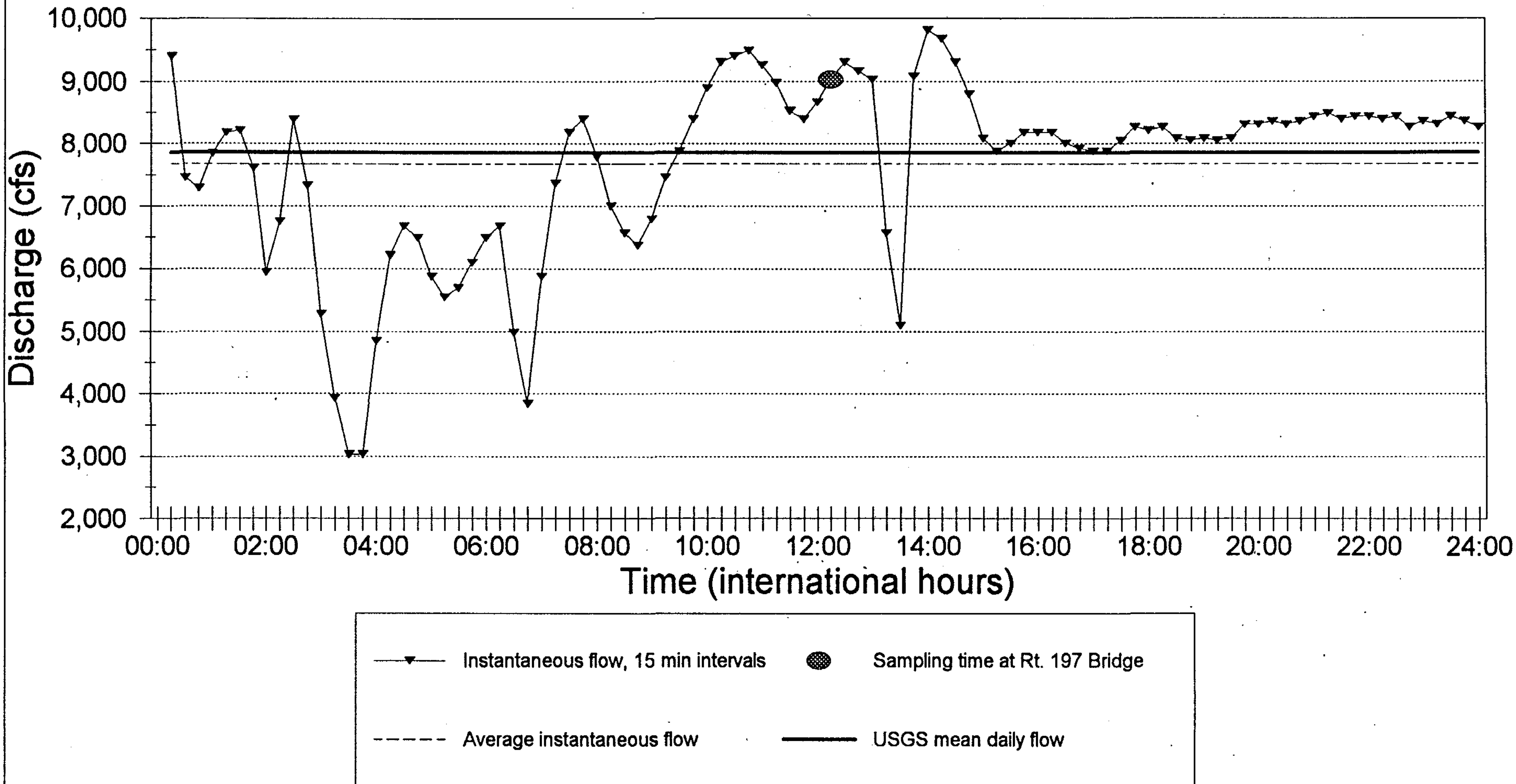
Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-26
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: June 5, 1996



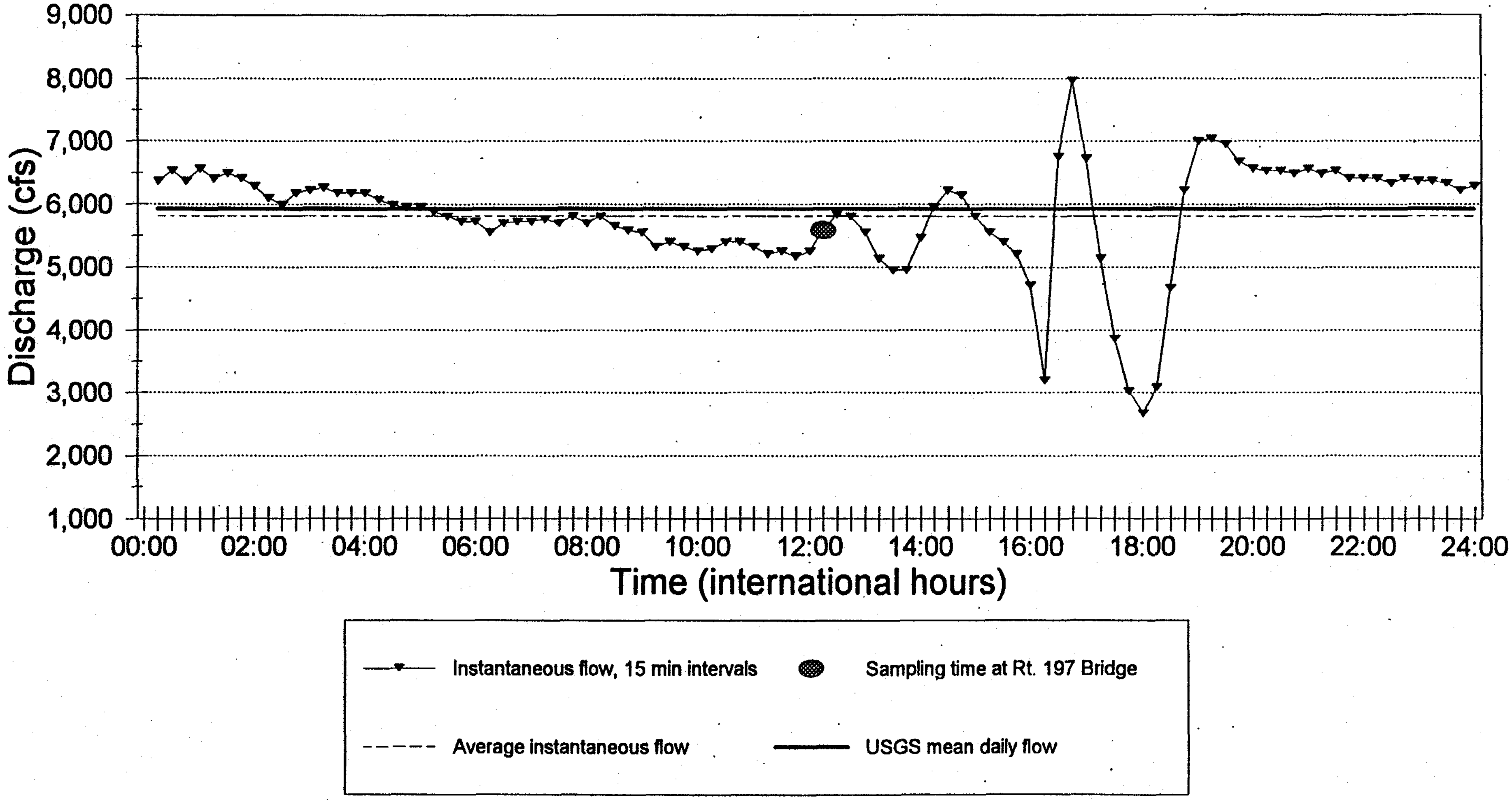
Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-27
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: June 12, 1996



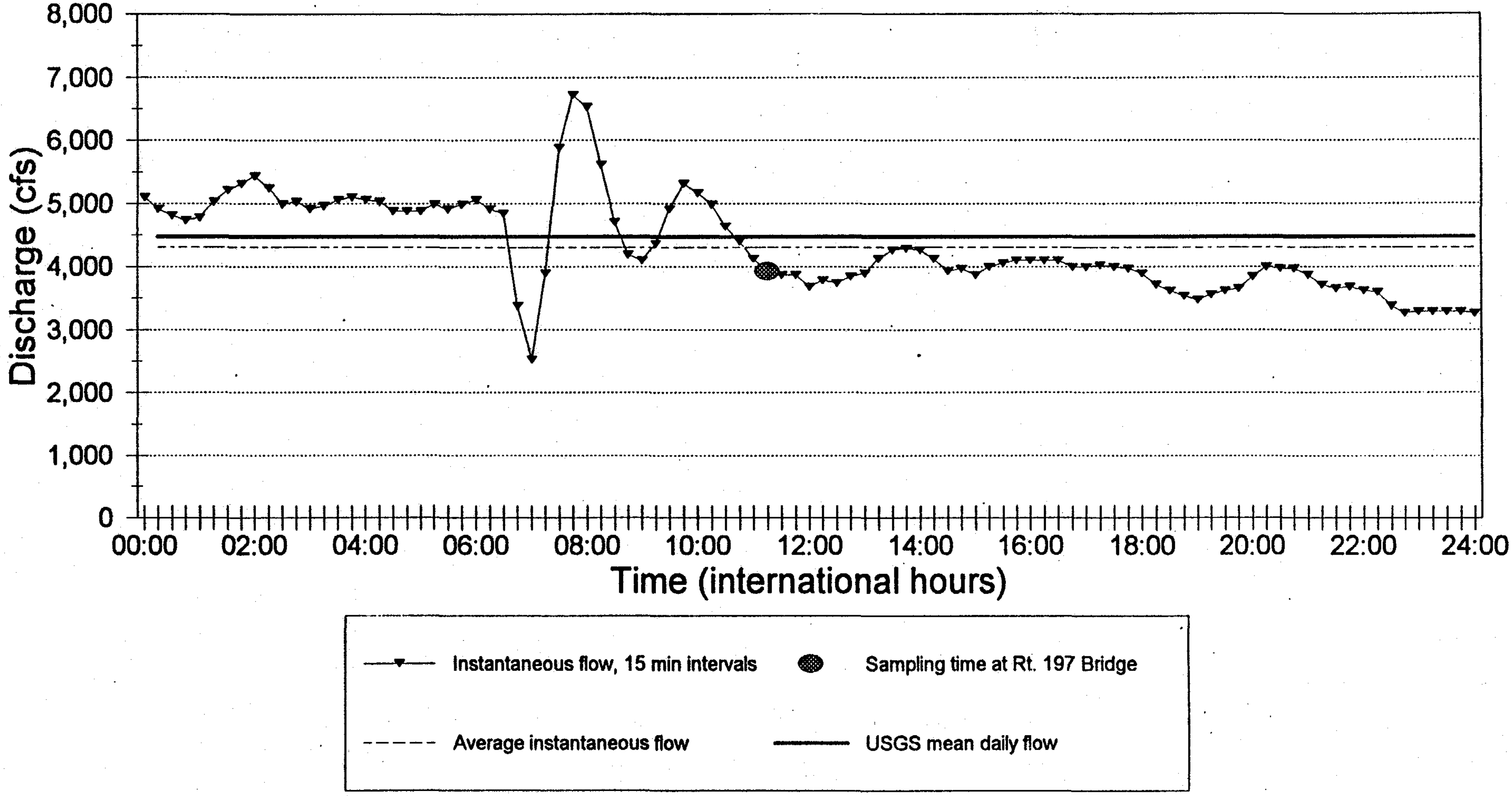
Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-28
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: June 19, 1996



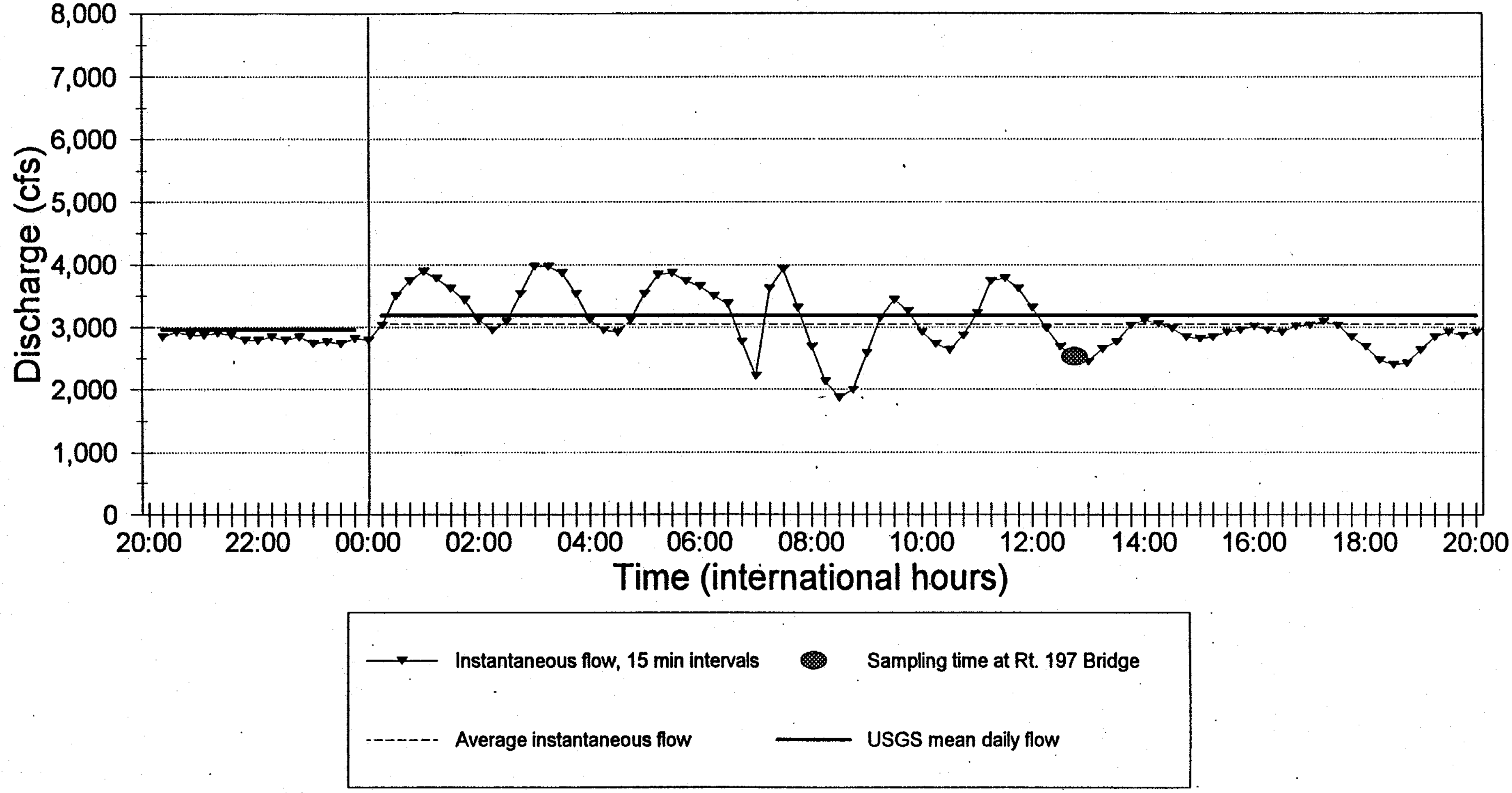
Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-29
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: June 26, 1996



Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-30
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: June 30 - July 1, 1996

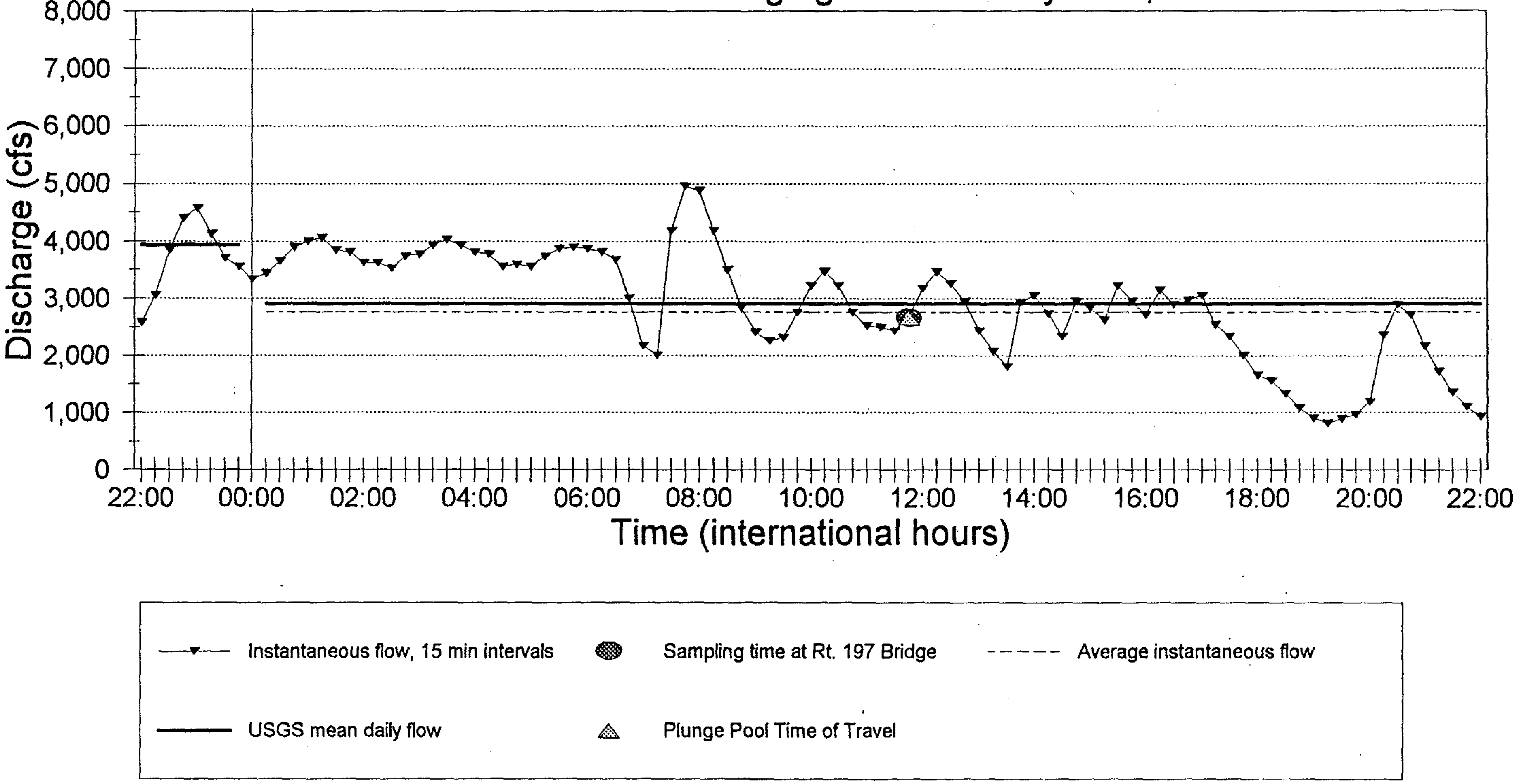


Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-31

General Electric Company - Hudson River Project

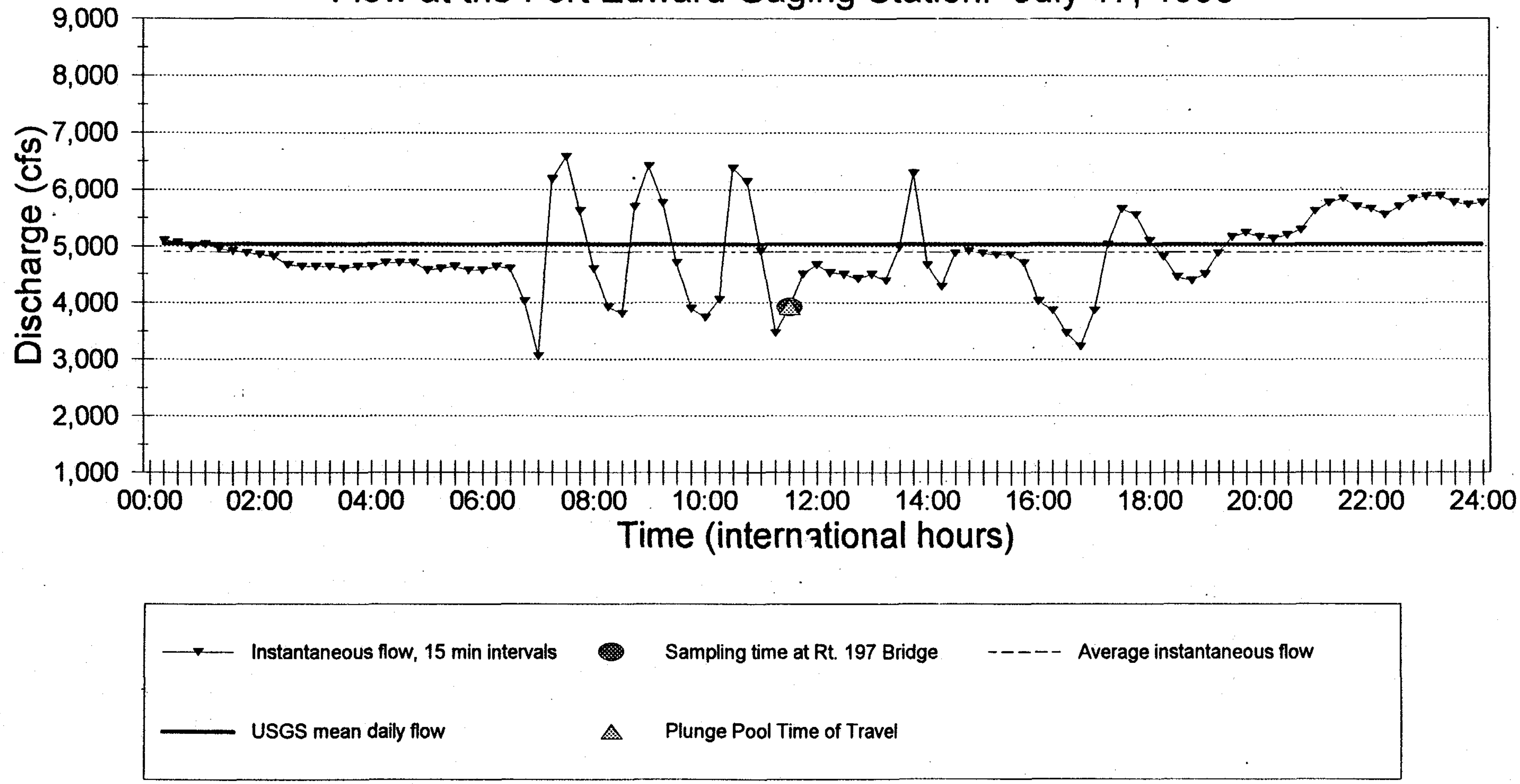
Flow at the Fort Edward Gaging Station: July 9-10, 1996



Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

321820

Figure C-32
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: July 17, 1996



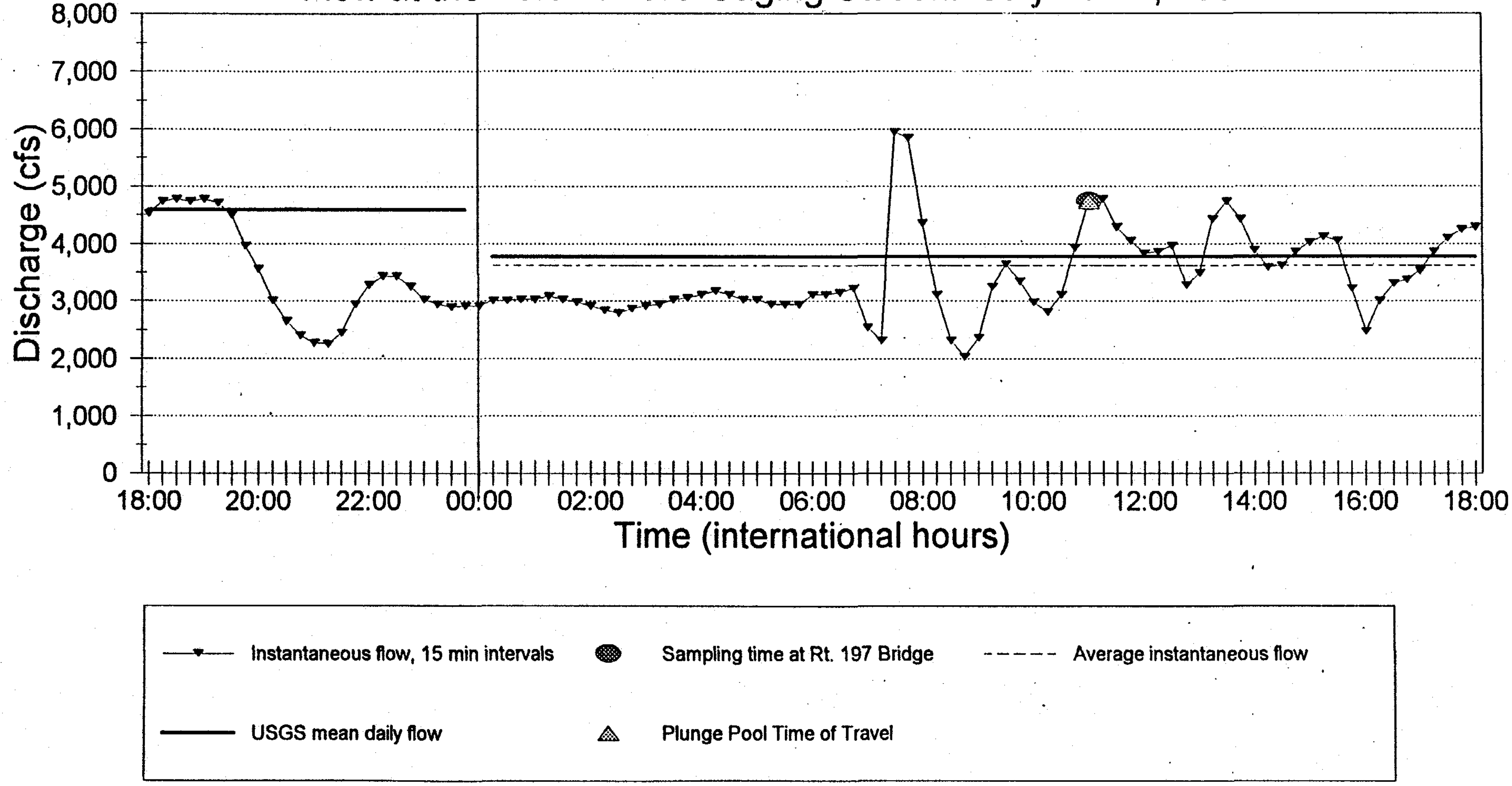
Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

321821

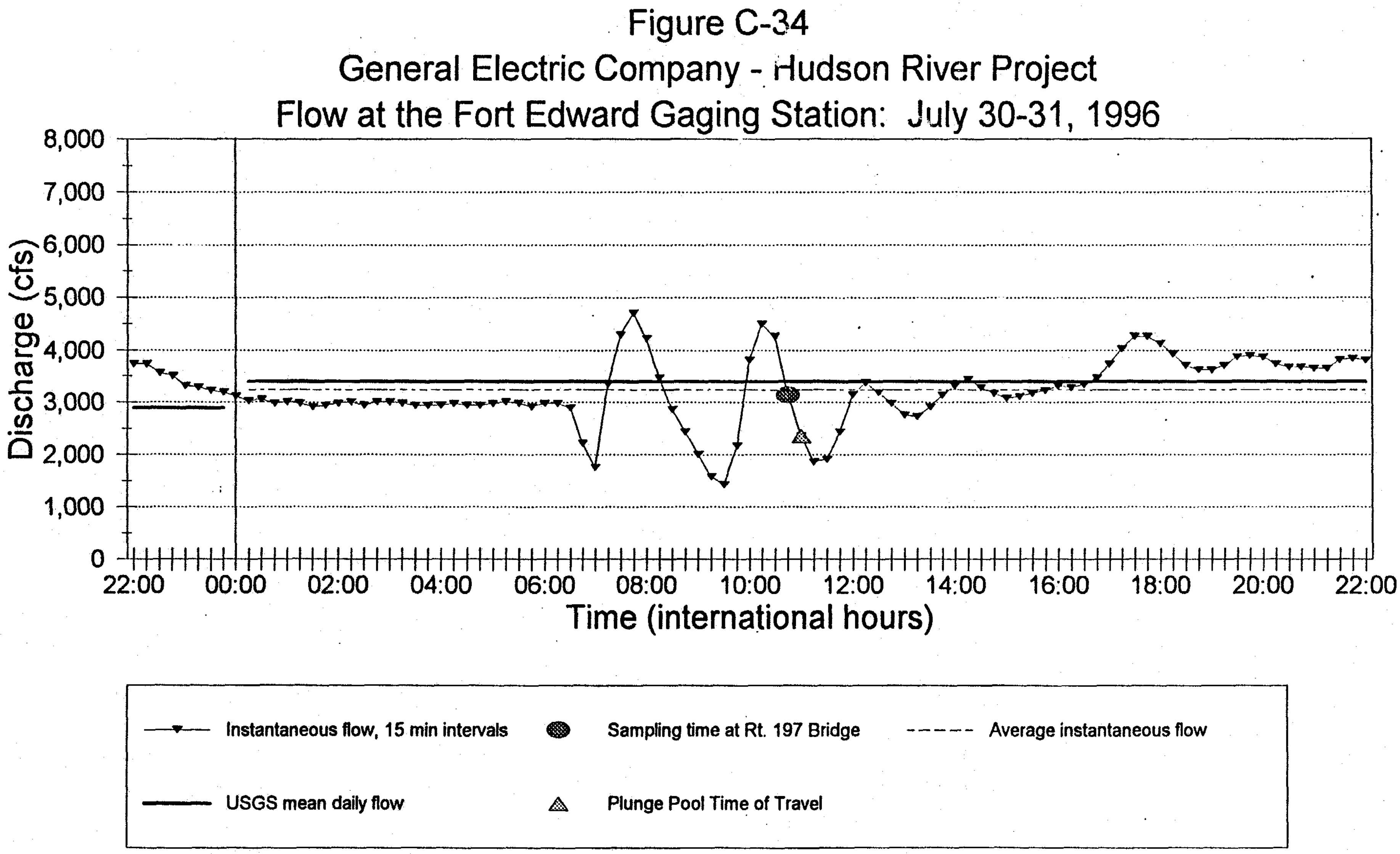
Figure C-33

General Electric Company - Hudson River Project

Flow at the Fort Edward Gaging Station: July 23-24, 1996



Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

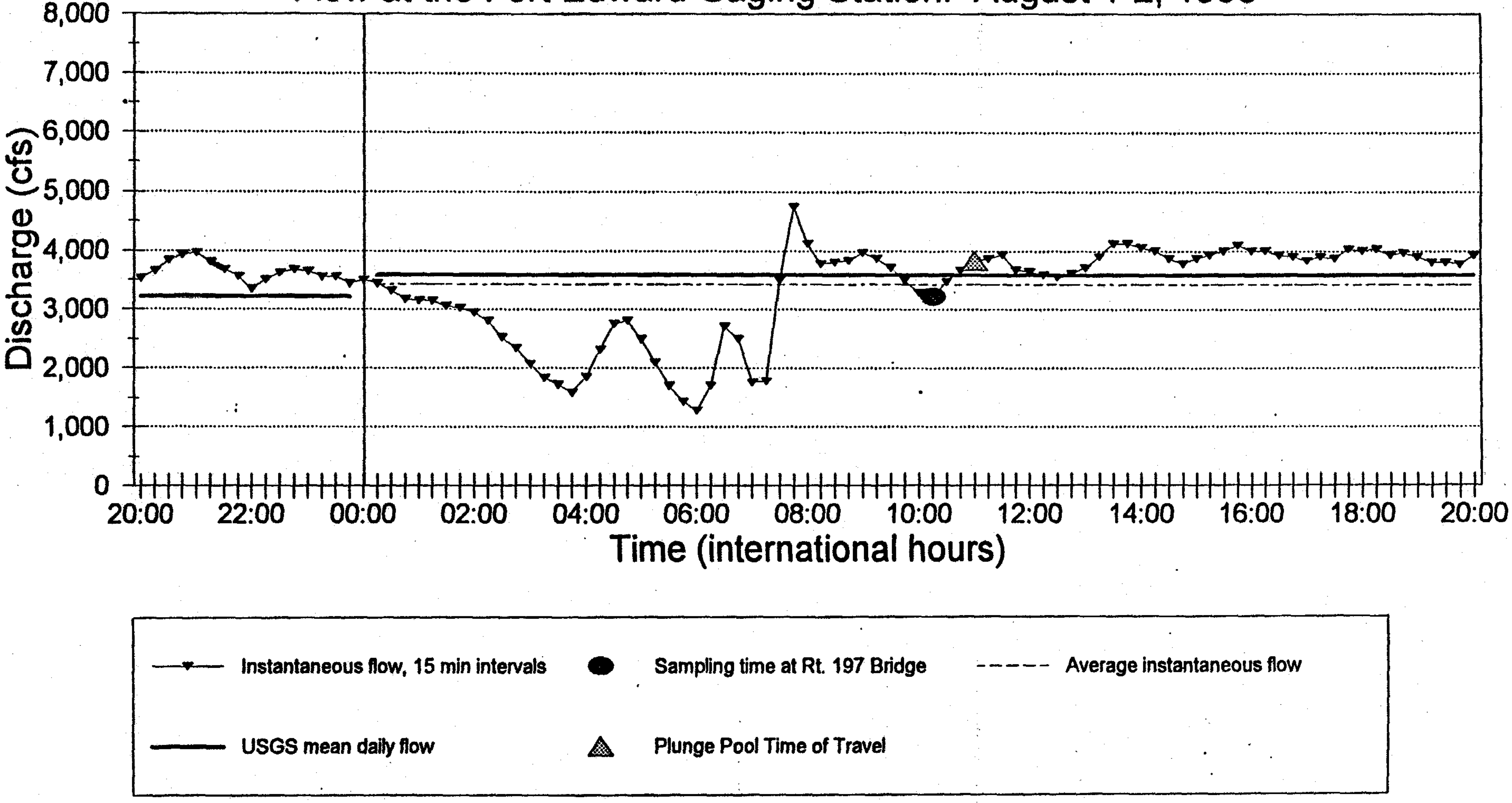


Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-35

General Electric Company - Hudson River Project

Flow at the Fort Edward Gaging Station: August 1-2, 1996



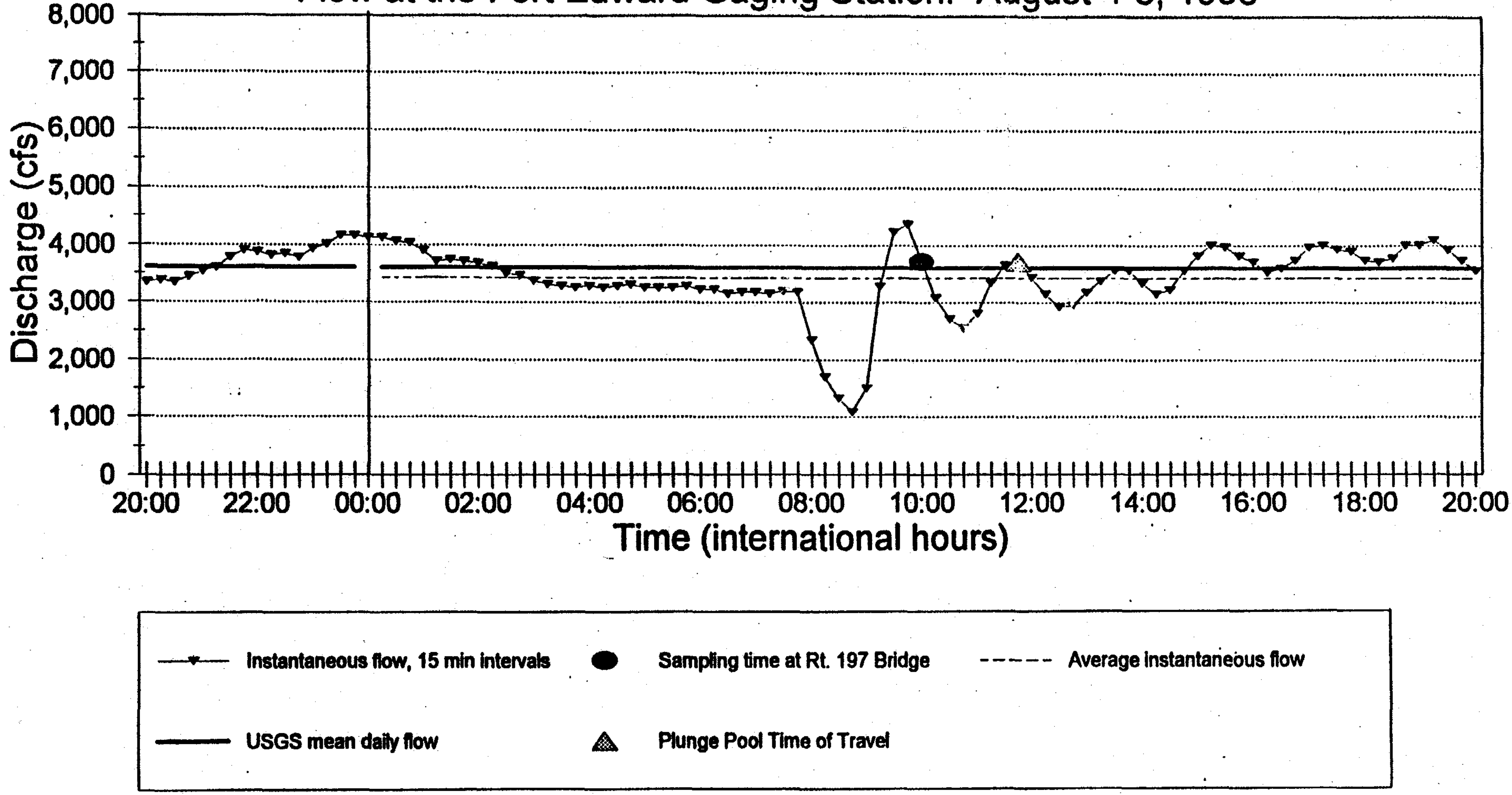
Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

321824

Figure C-36

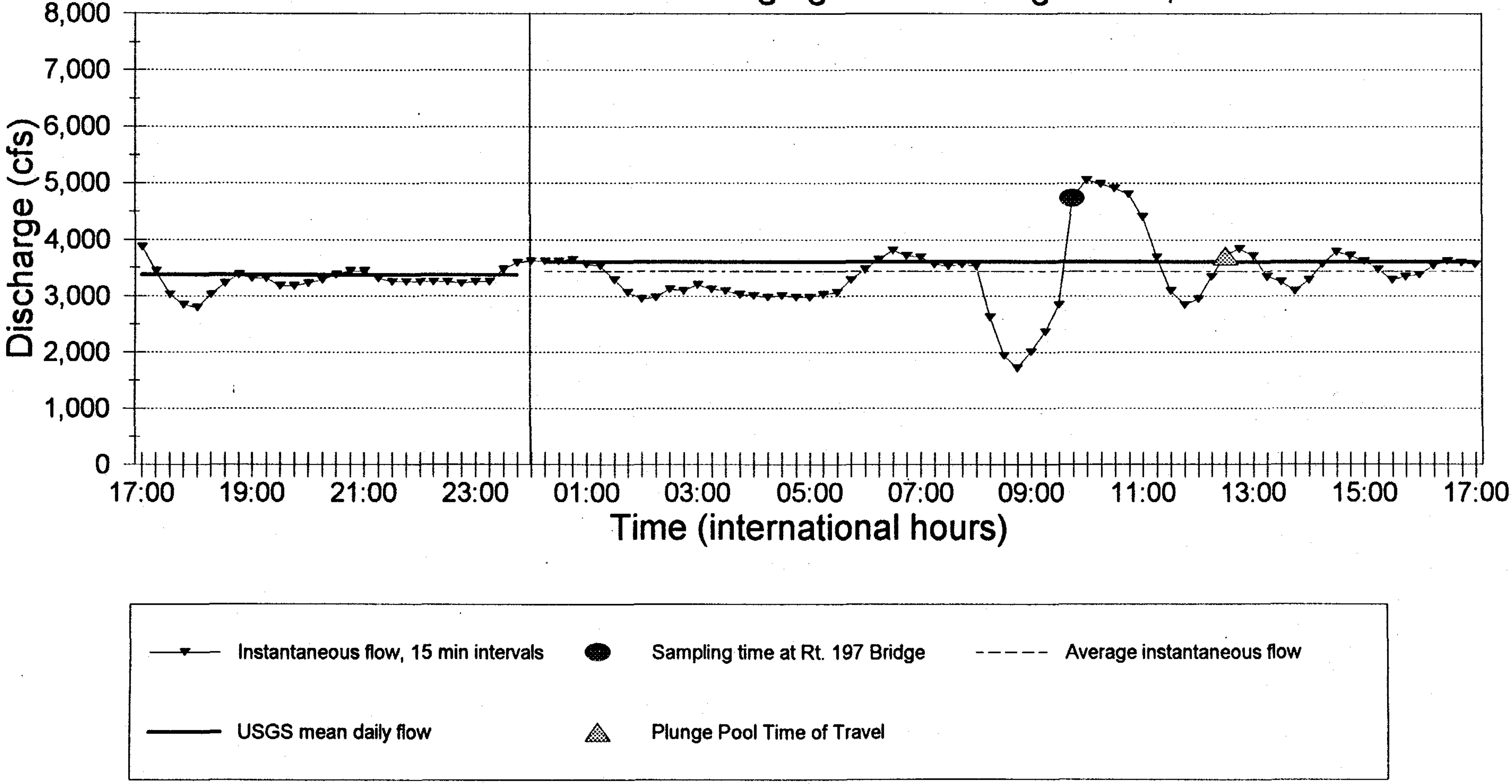
General Electric Company - Hudson River Project

Flow at the Fort Edward Gaging Station: August 4-5, 1996



Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

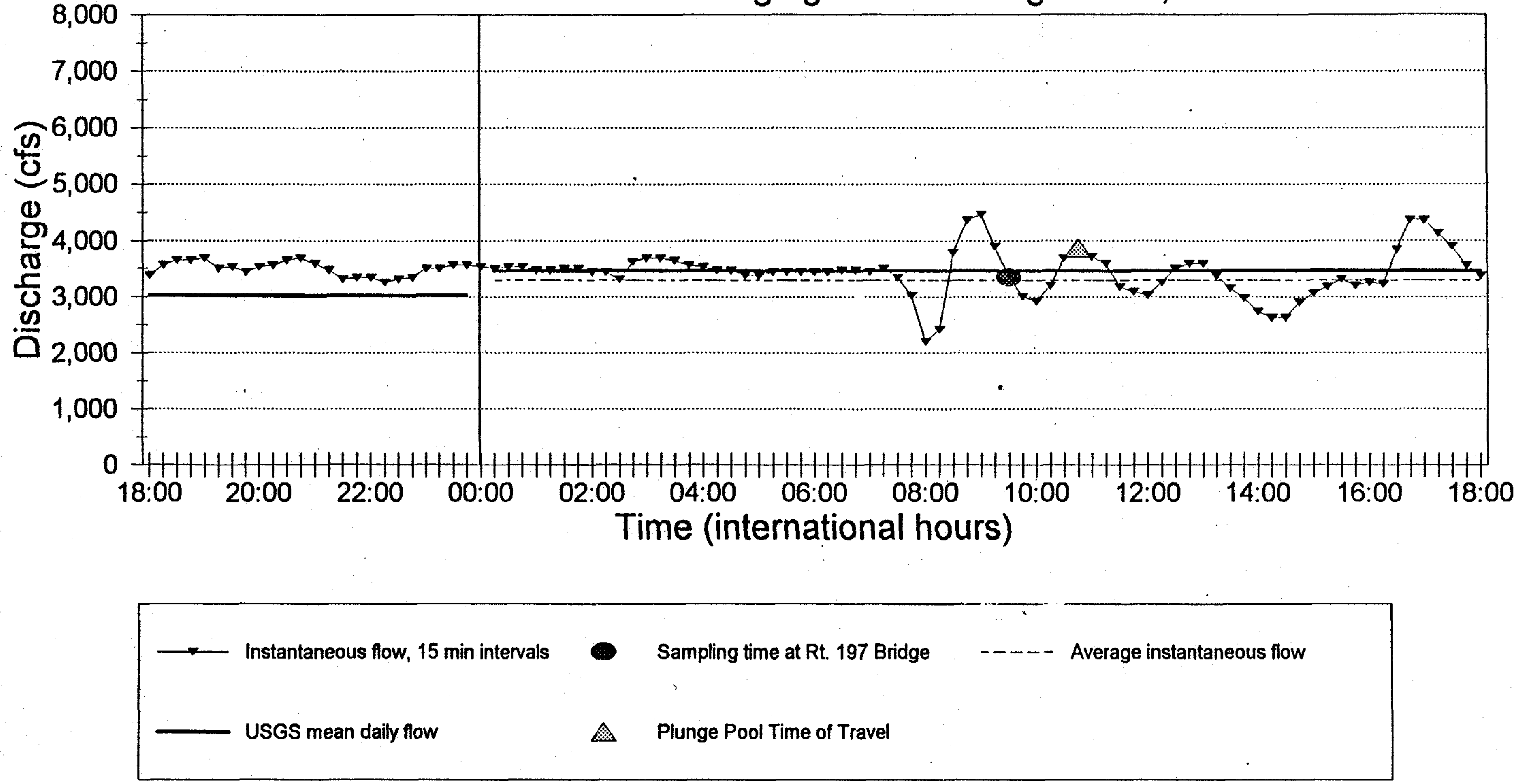
Figure C-37
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: August 6-7, 1996



Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

321826

Figure C-38
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: August 8-9, 1996

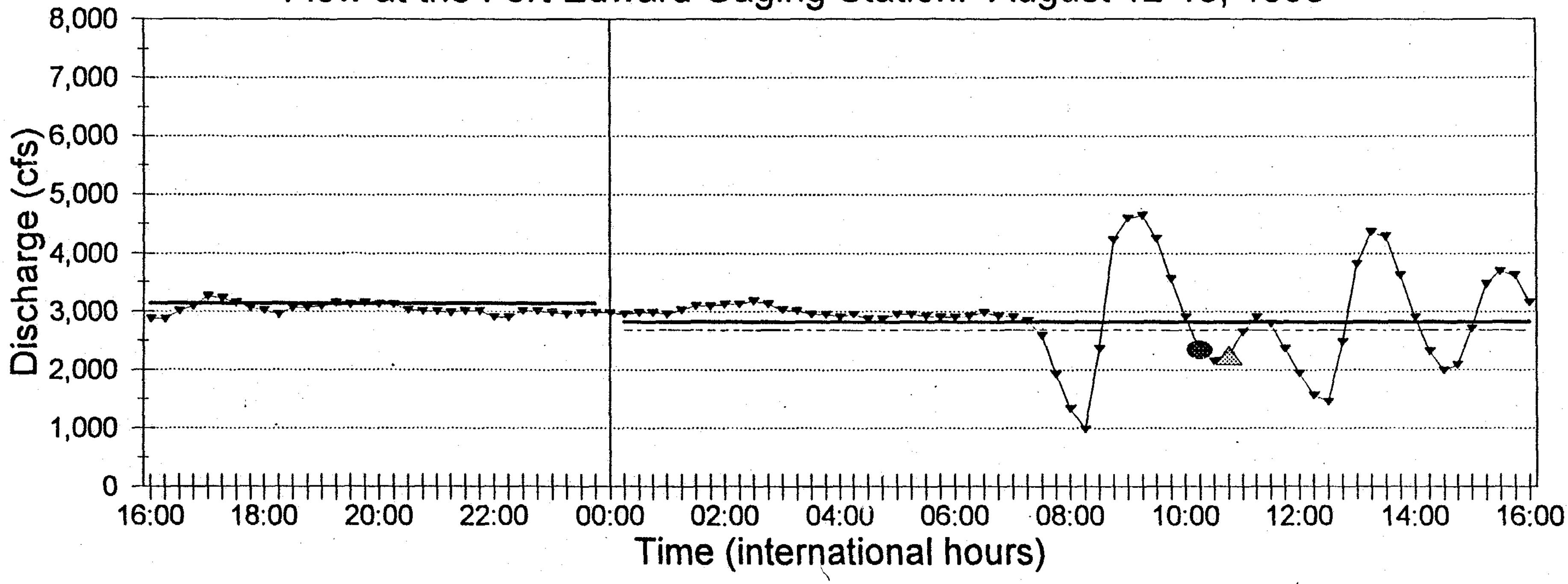


Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-39

General Electric Company - Hudson River Project

Flow at the Fort Edward Gaging Station: August 12-13, 1996

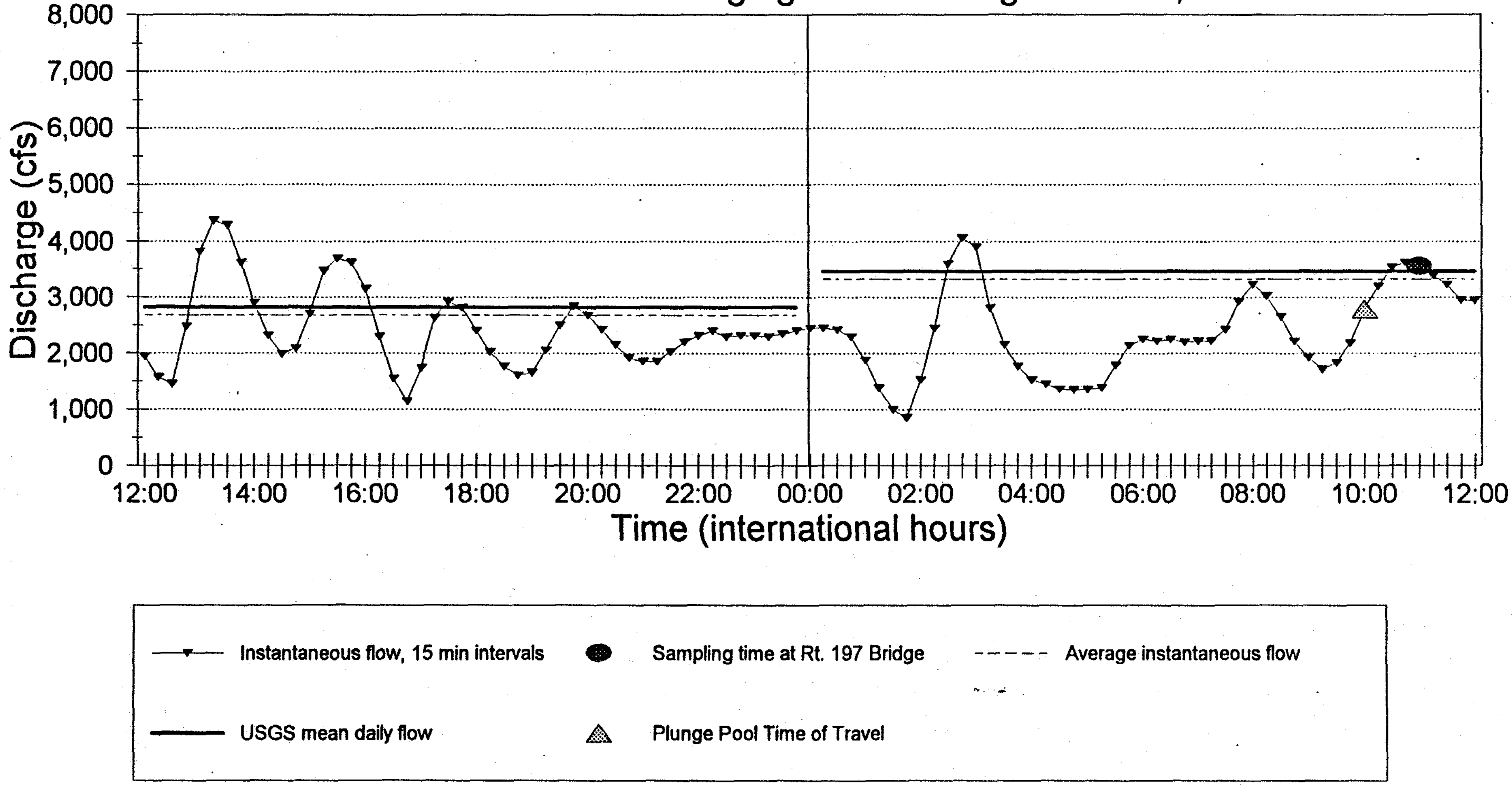


Instantaneous flow, 15 min intervals — Sampling time at Rt. 197 Bridge — Average instantaneous flow

USGS mean daily flow — Plunge Pool Time of Travel

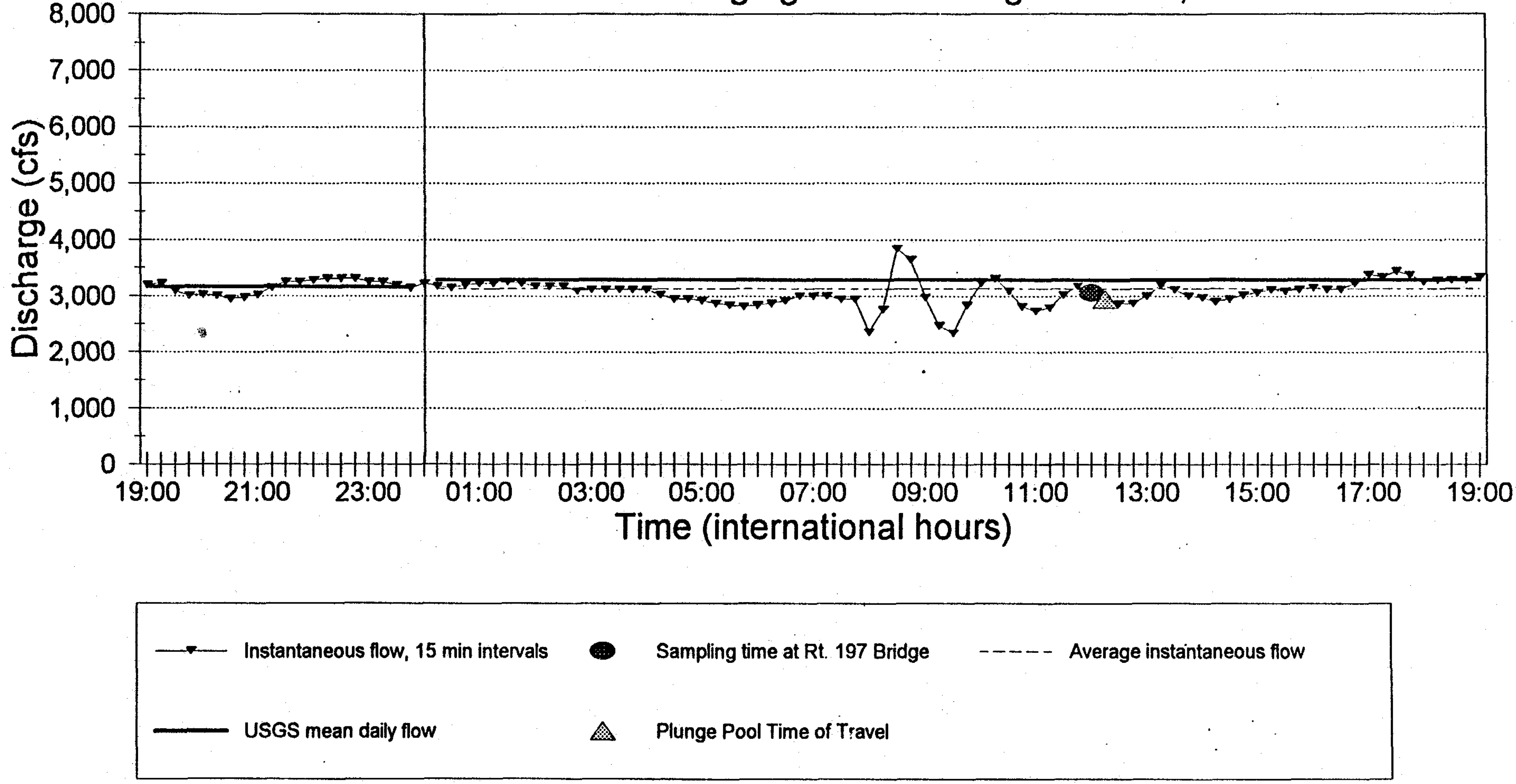
Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-40
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: August 13-14, 1996



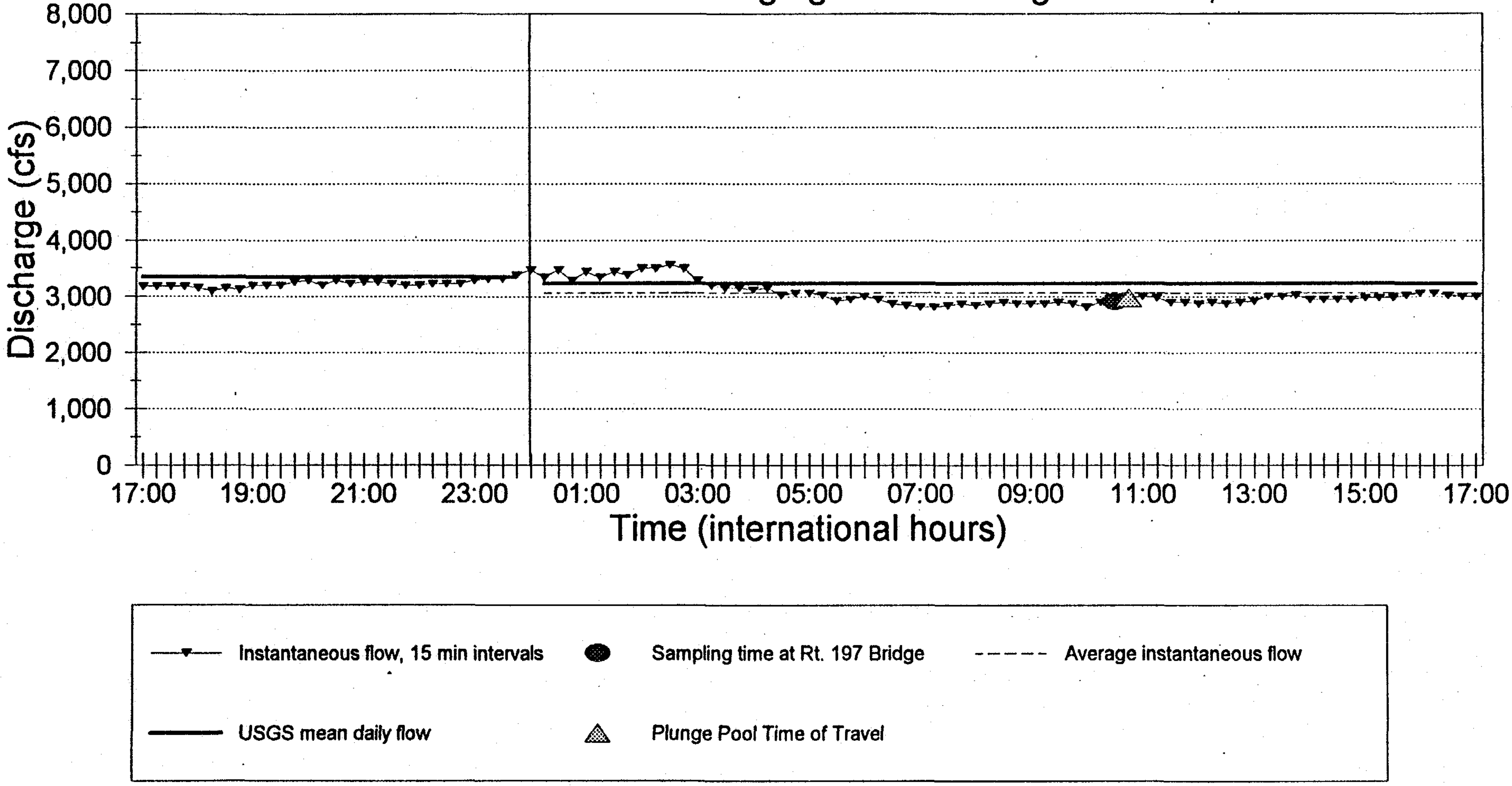
Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-41
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: August 19-20, 1996



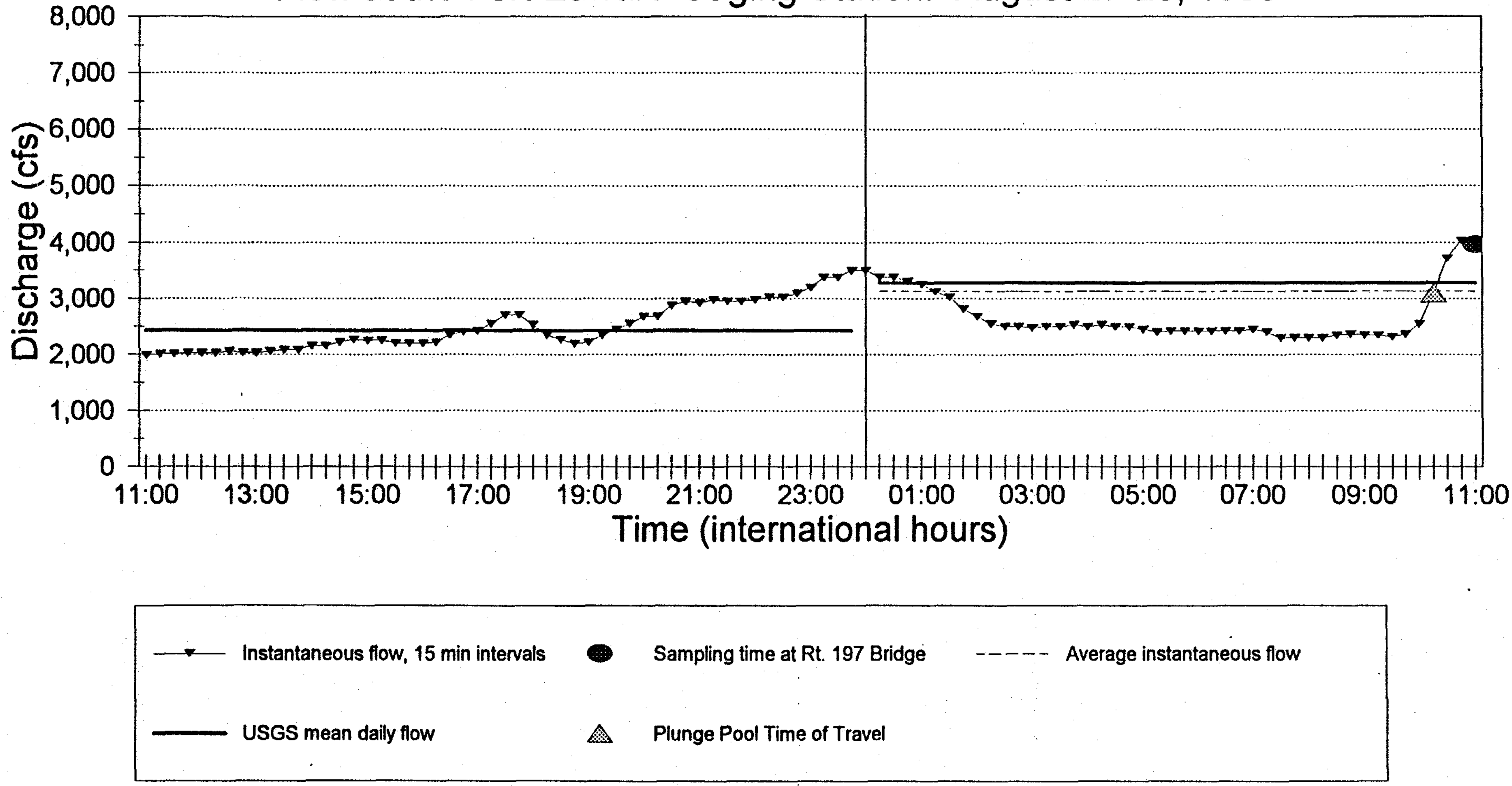
Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-42
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: August 21-22, 1996



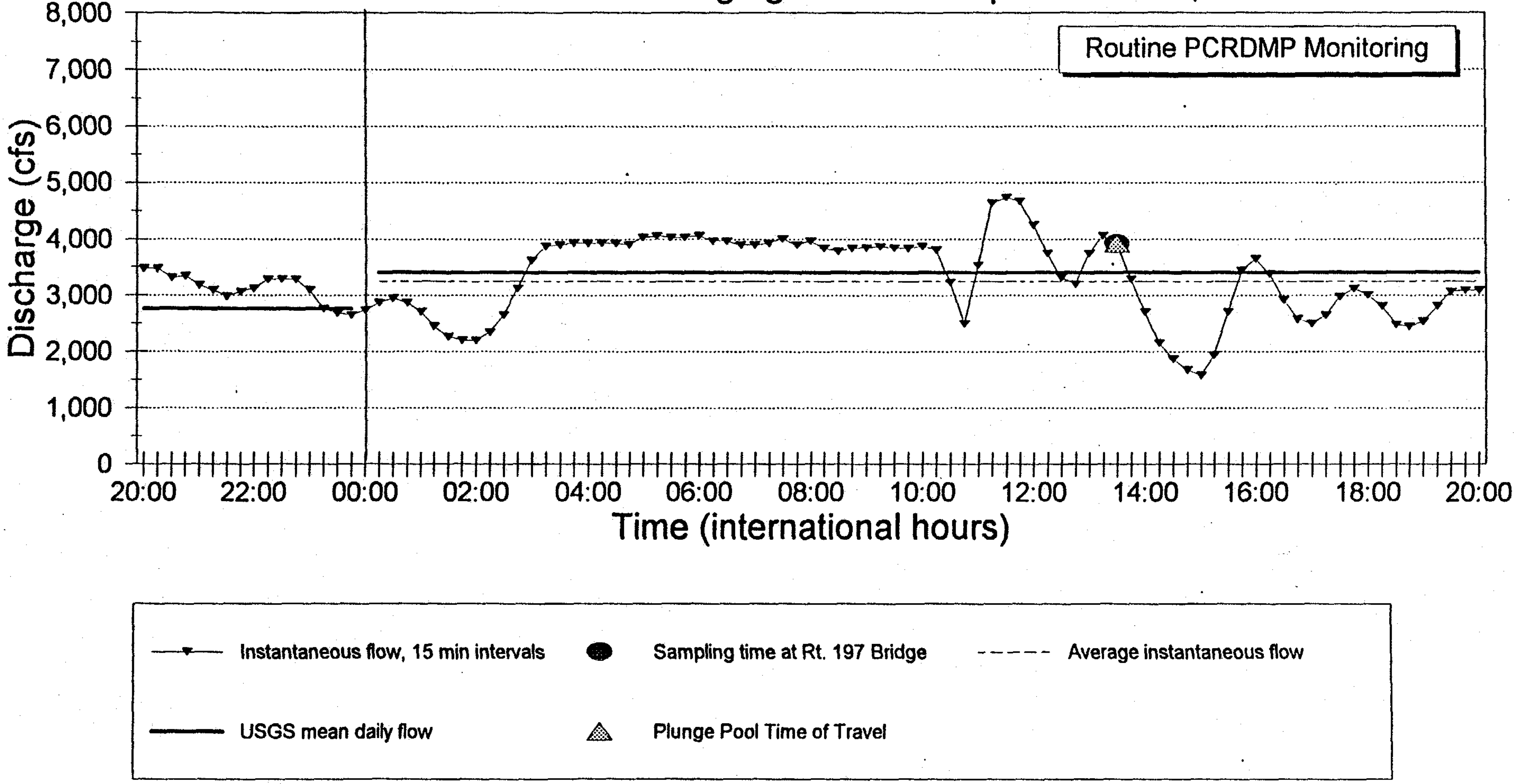
Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-43
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: August 27-28, 1996



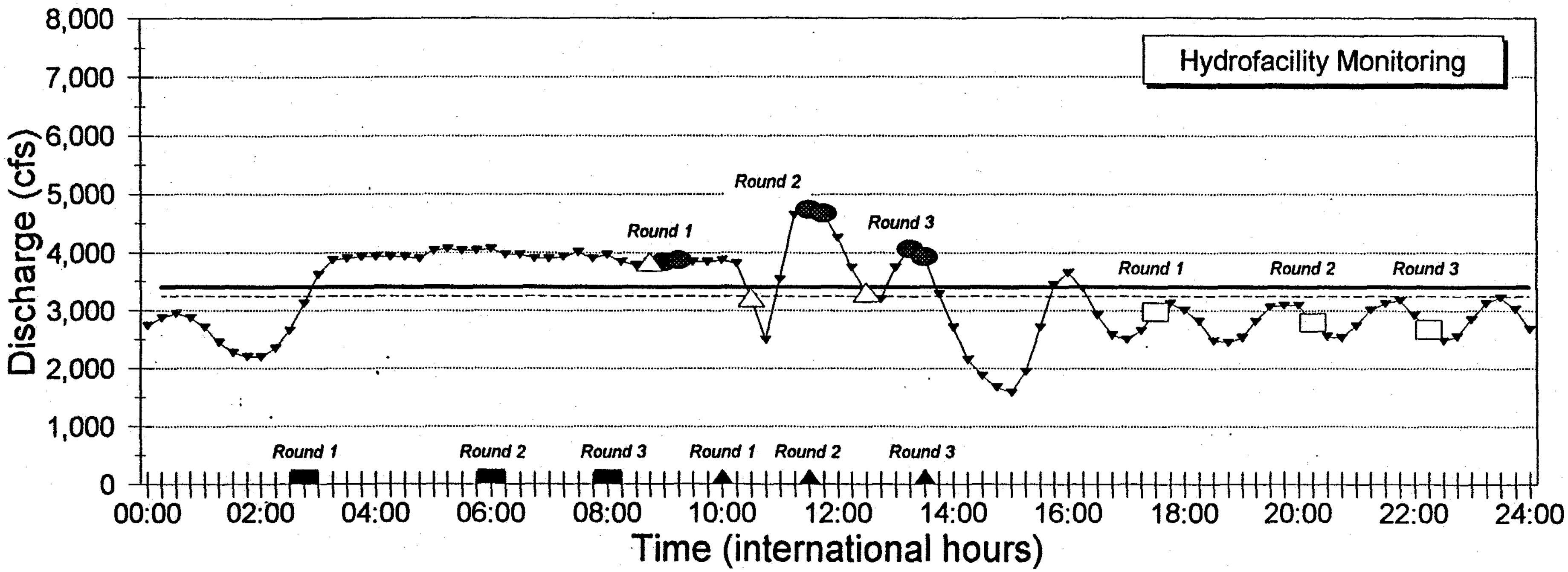
Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-44
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: September 3-4, 1996



Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

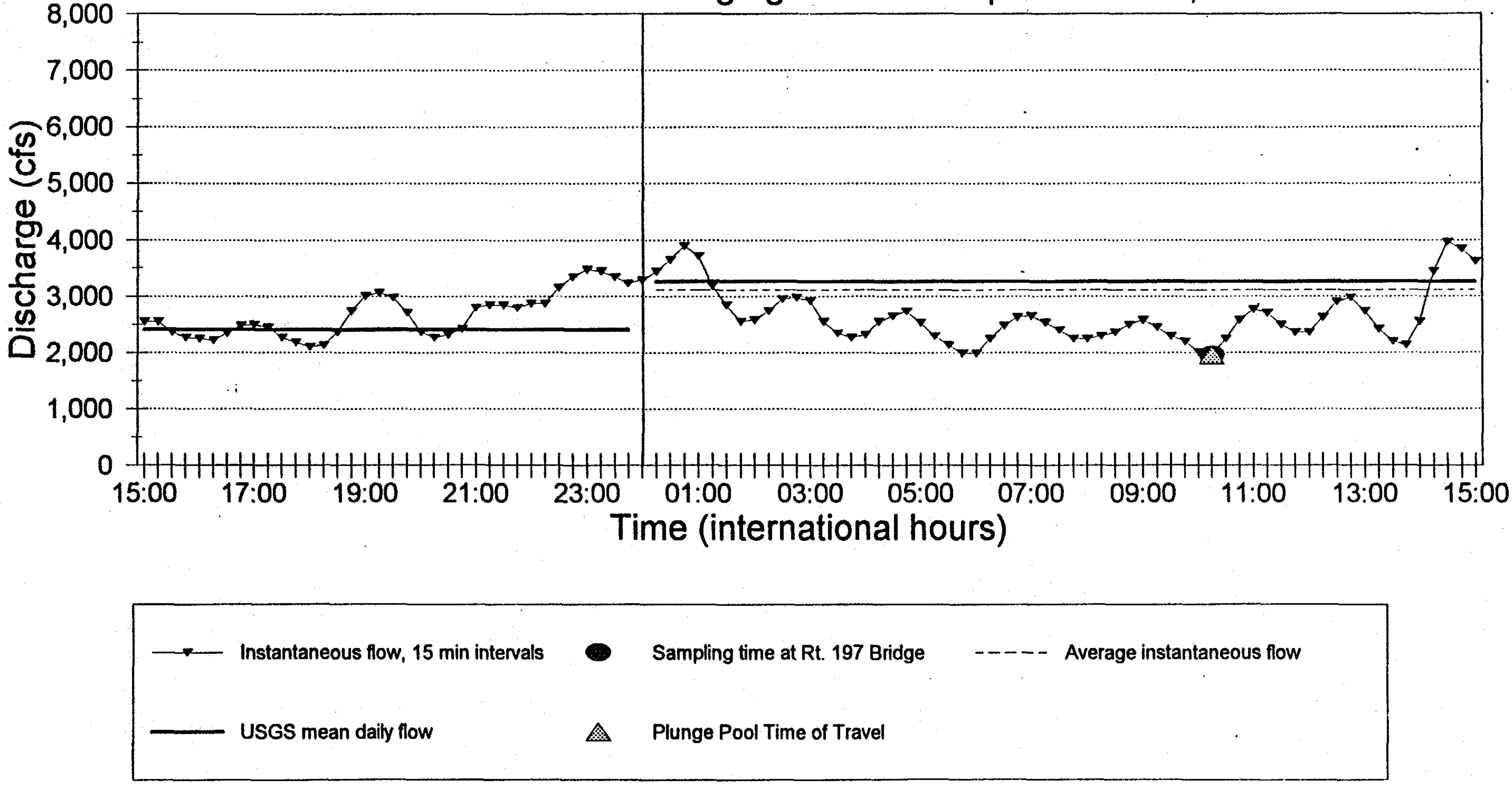
Figure C-45
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: September 3-4, 1996



Instantaneous flow, 15 min intervals	Parcel and flow at Rt. 197 Bridge	Average instantaneous flow
USGS mean daily flow	Parcel sampled at Plunge Pool	Parcel sampled at TID
	Flow at Plunge Pool sampling	Flow at TID sampling

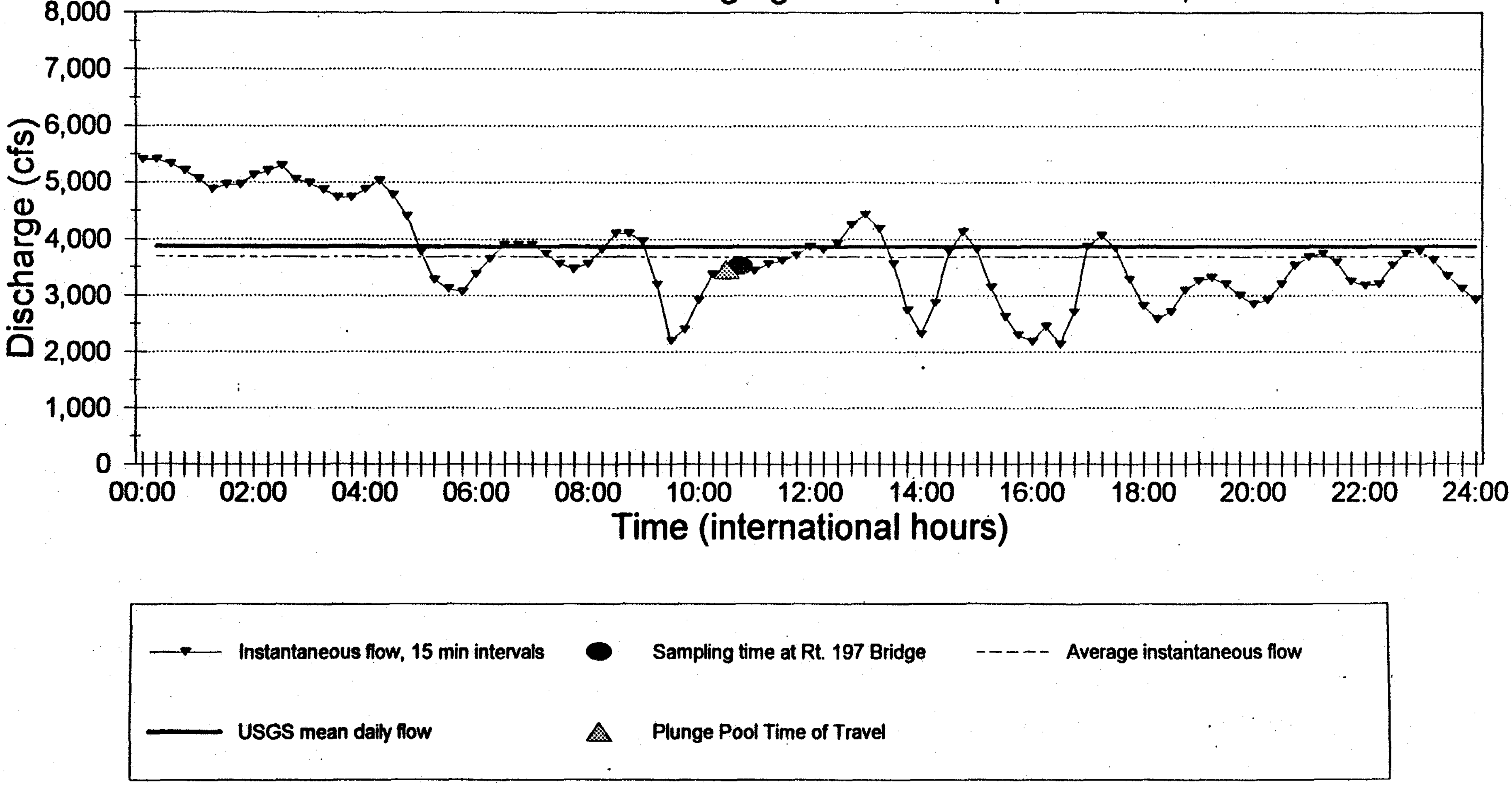
Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-46
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: September 5-6, 1996



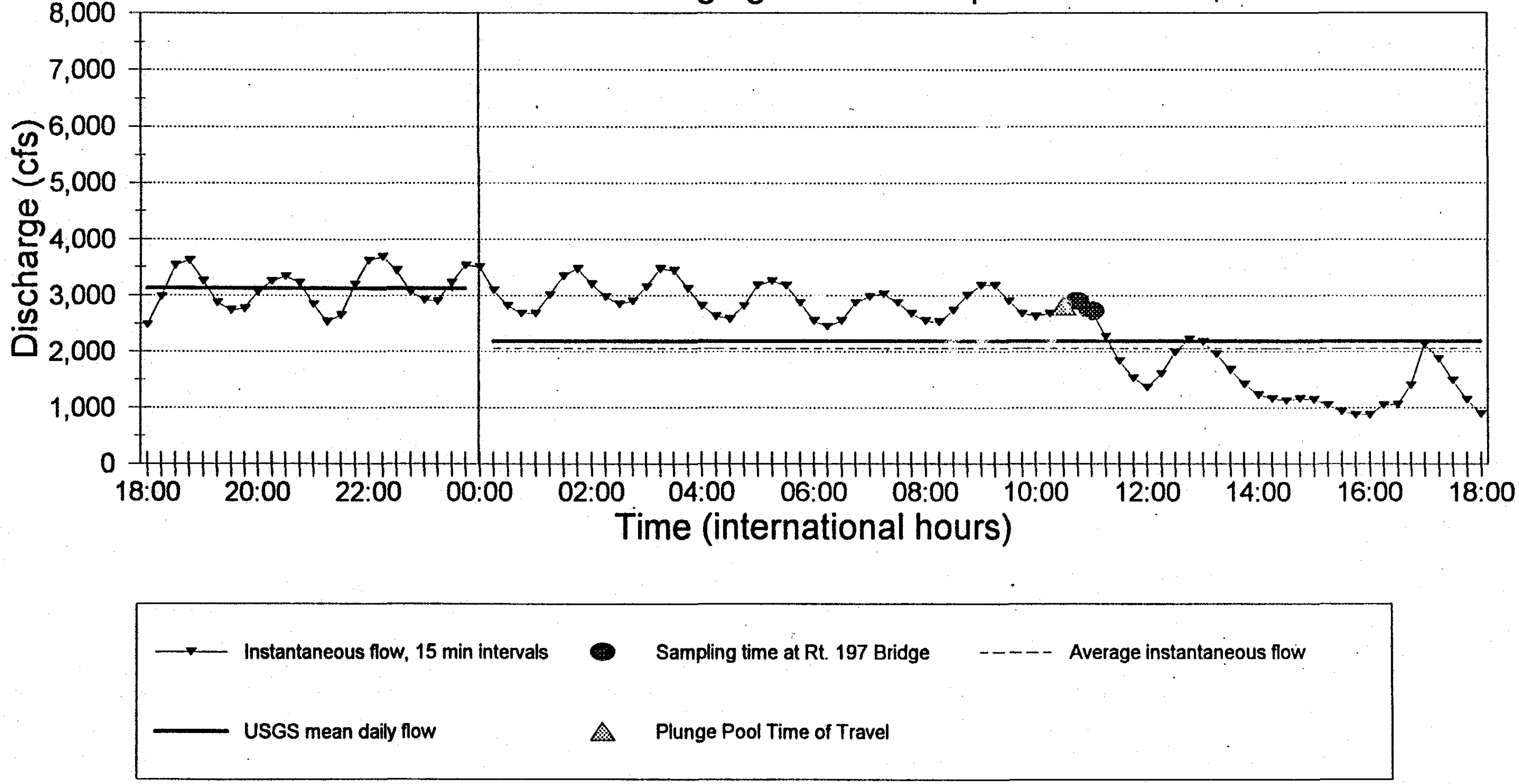
Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-47
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: September 10, 1996



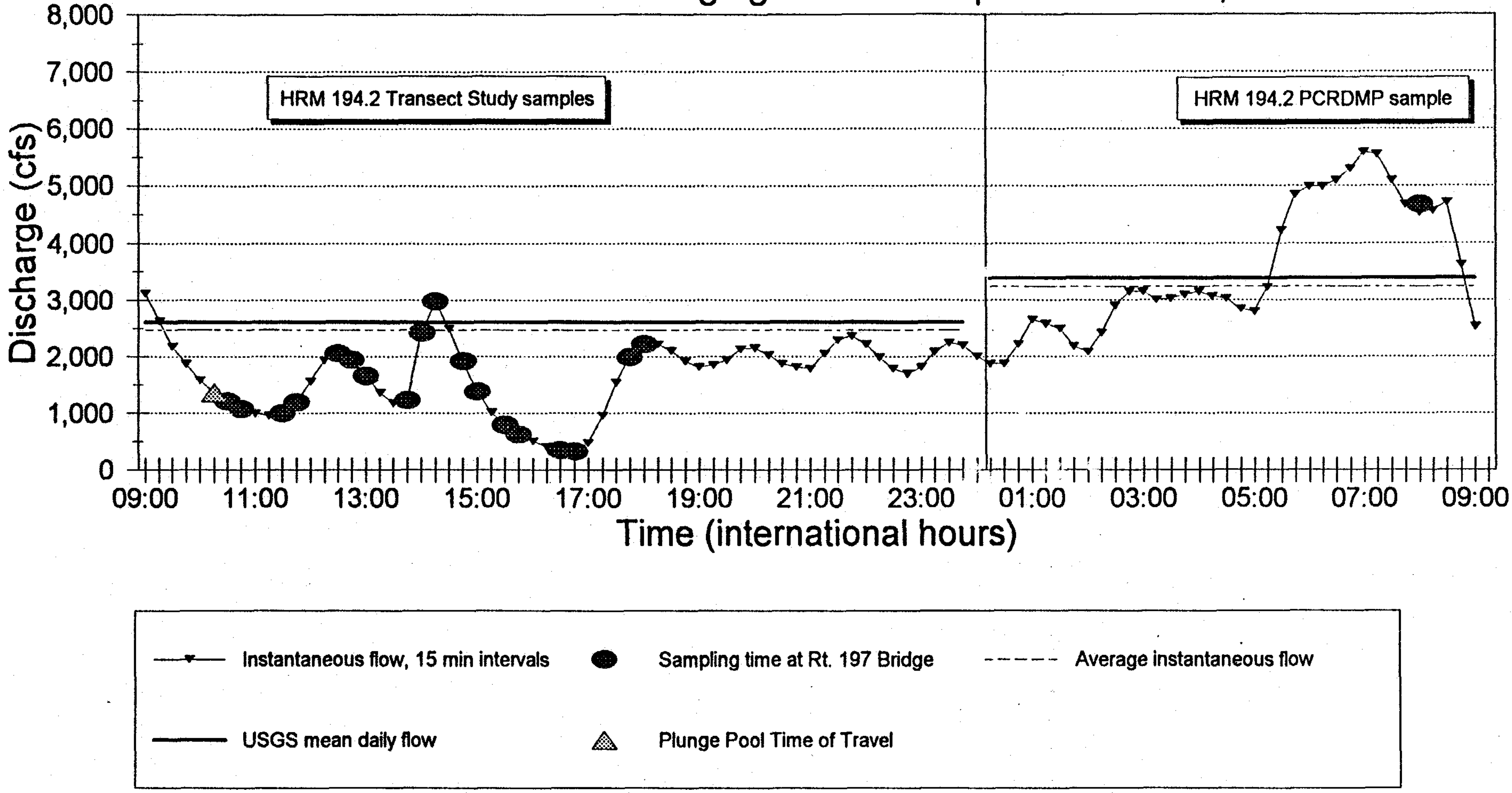
Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-48
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: September 12-13, 1996



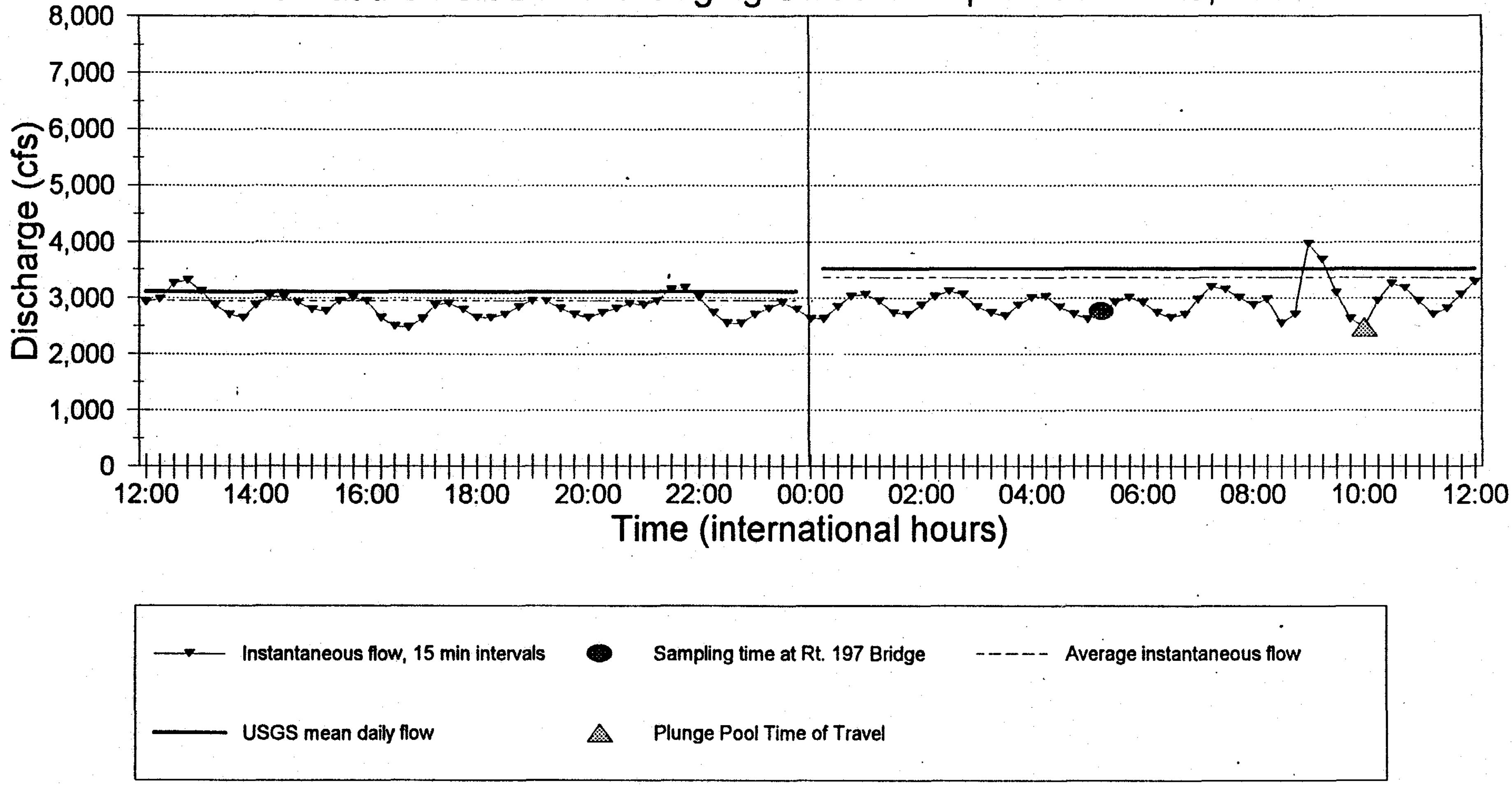
Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-49
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: September 17-18, 1996



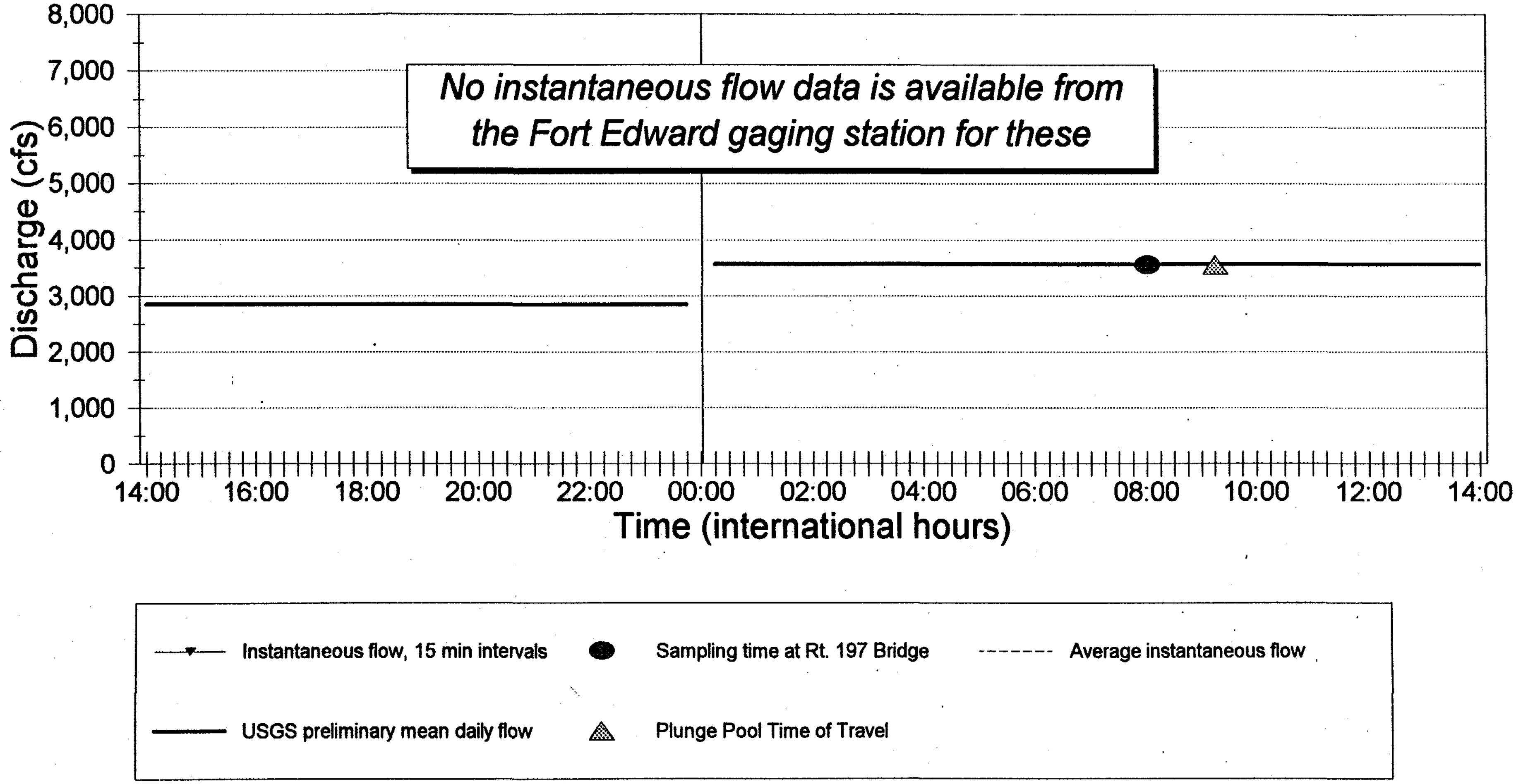
Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-50
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: September 24-25, 1996



Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is final values published by the USGS. Daily averages are based on midnight to midnight time periods.

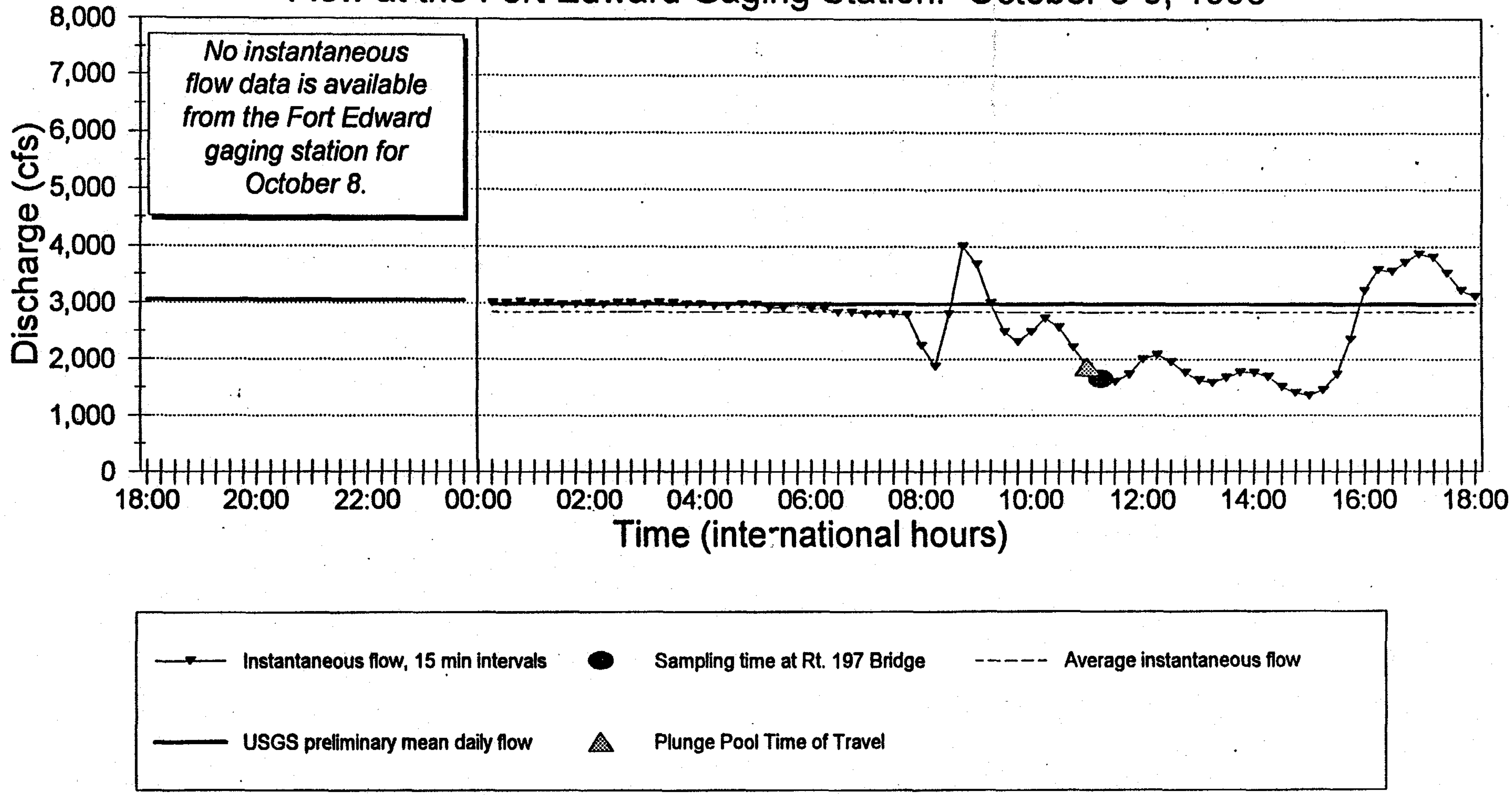
Figure C-51
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: October 1-2, 1996



Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is preliminary data adjusted by the USGS. Daily averages are based on midnight to midnight time periods.

321840

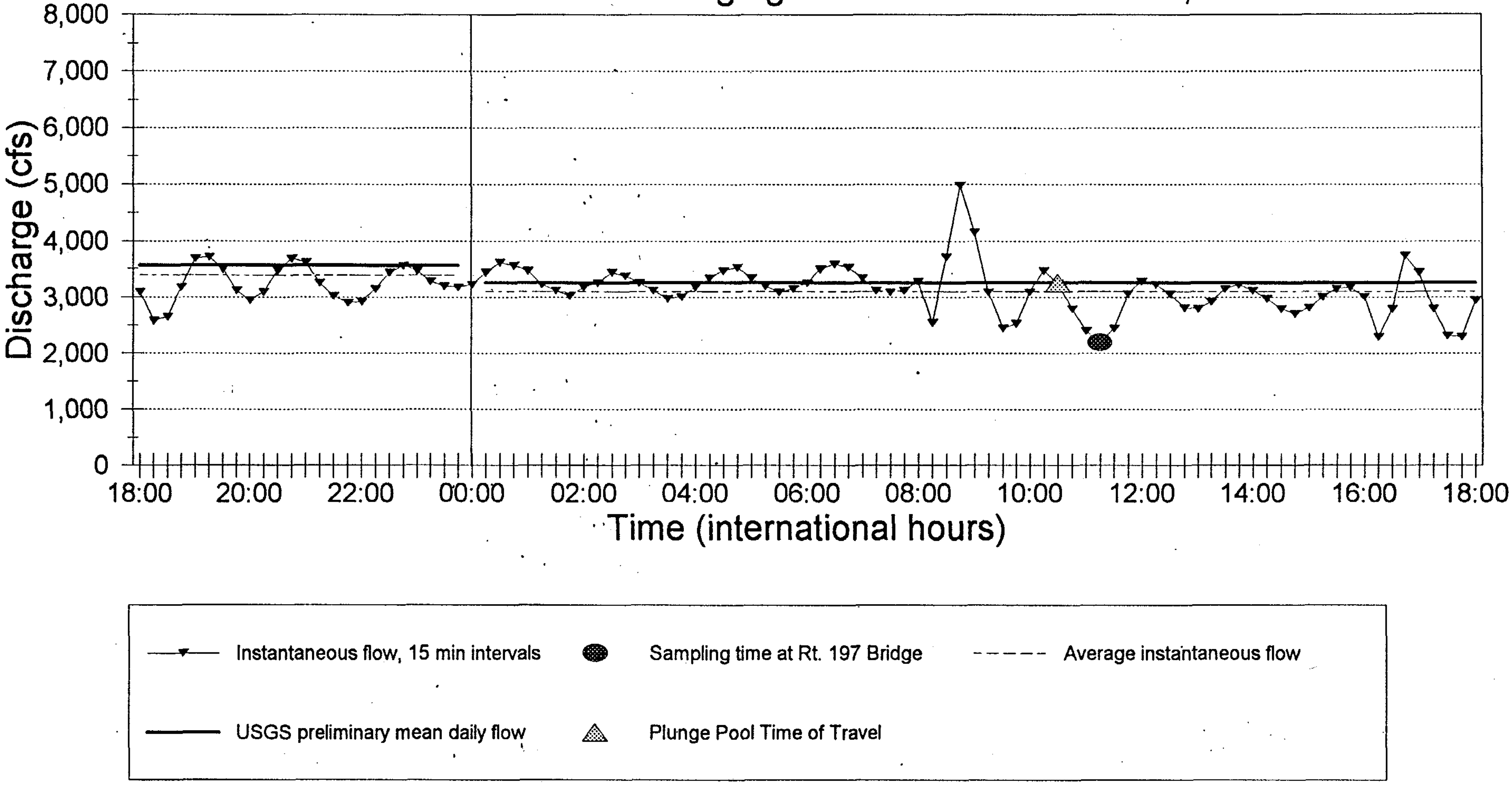
Figure C-52
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: October 8-9, 1996



Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is preliminary data adjusted by the USGS. Daily averages are based on midnight to midnight time periods.

321841

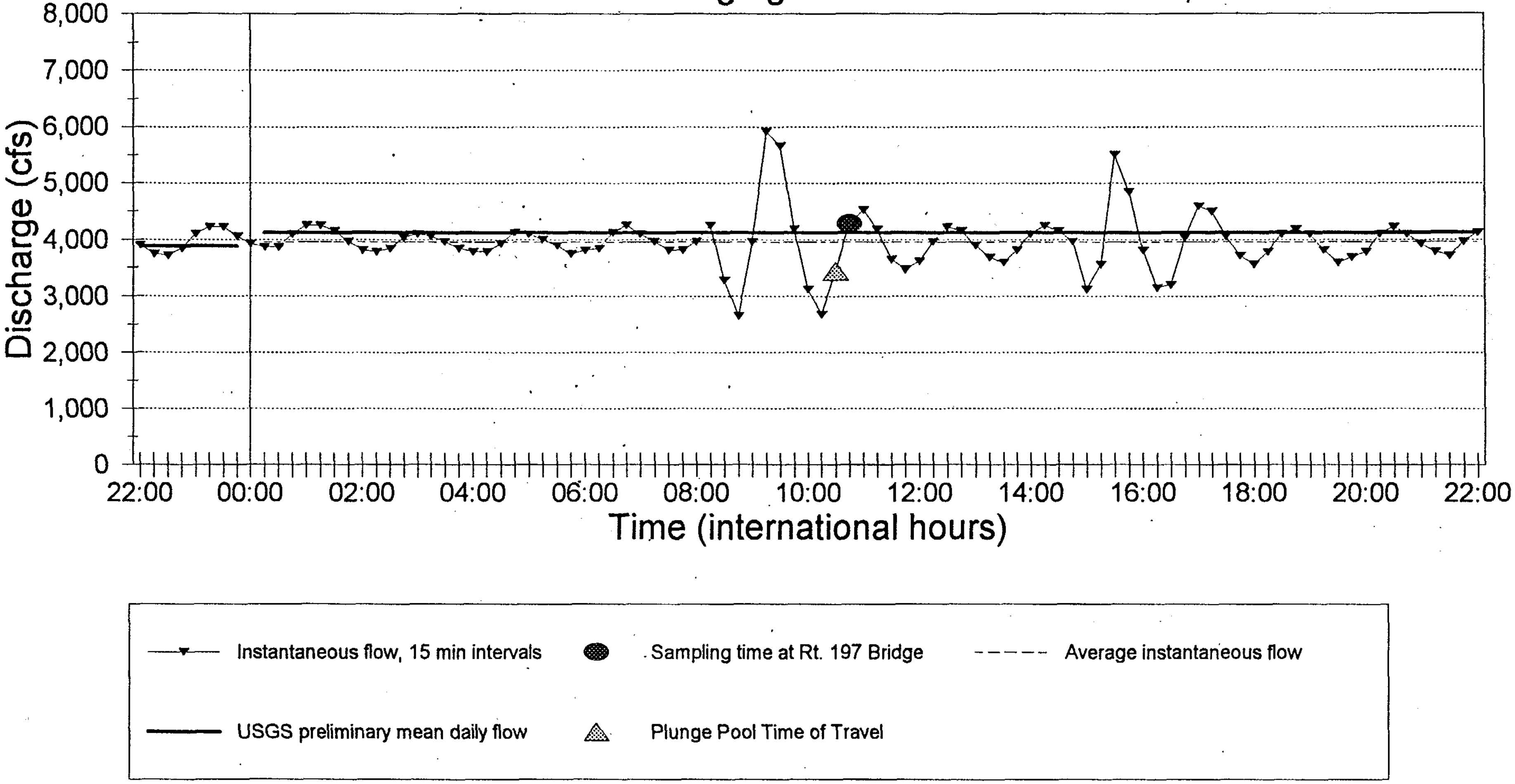
Figure C-53
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: October 15-16, 1996



Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is preliminary data adjusted by the USGS. Daily averages are based on midnight to midnight time periods.

321842

Figure C-54
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: October 22-23, 1996

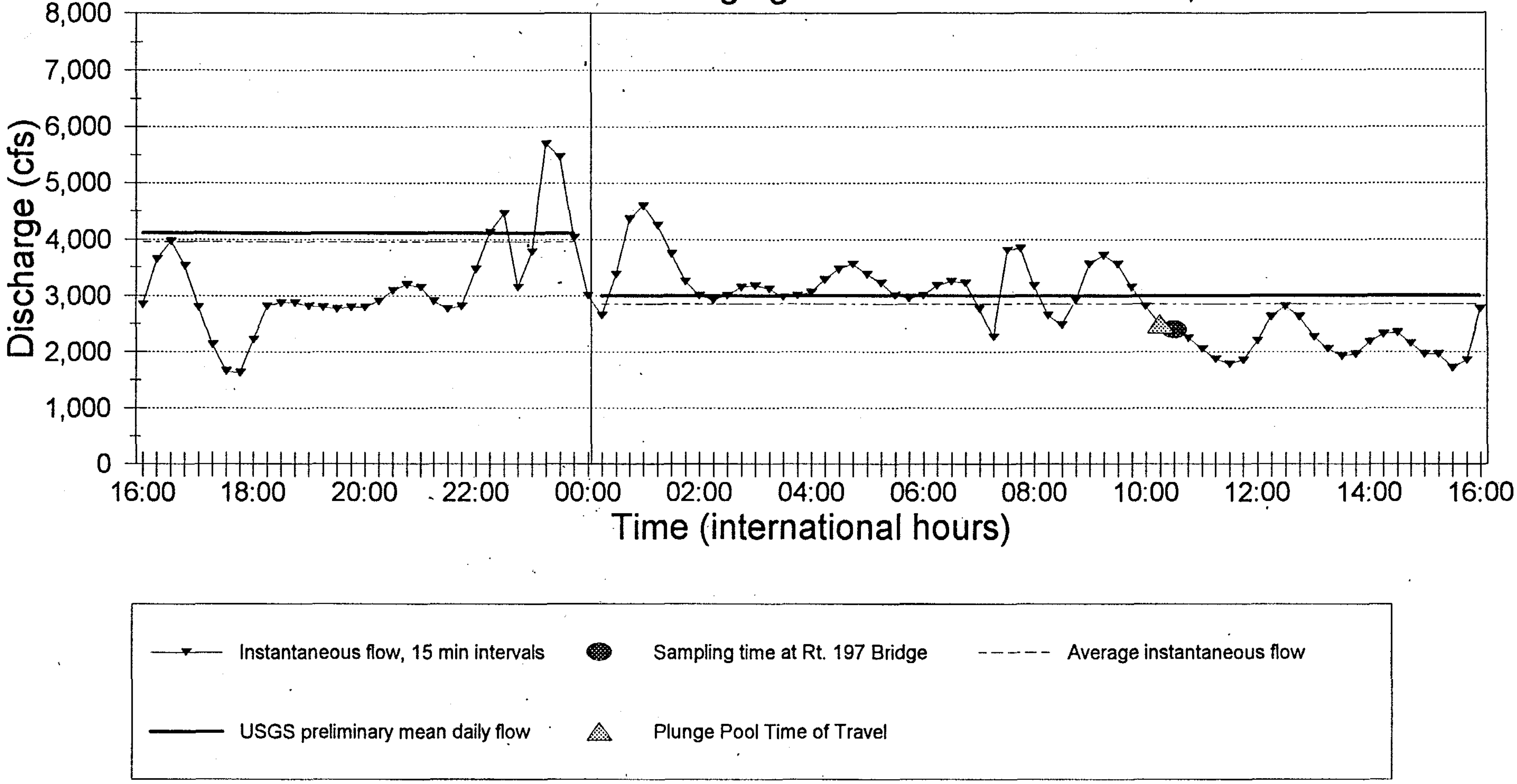


Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is preliminary data adjusted by the USGS. Daily averages are based on midnight to midnight time periods.

Figure C-55

General Electric Company - Hudson River Project

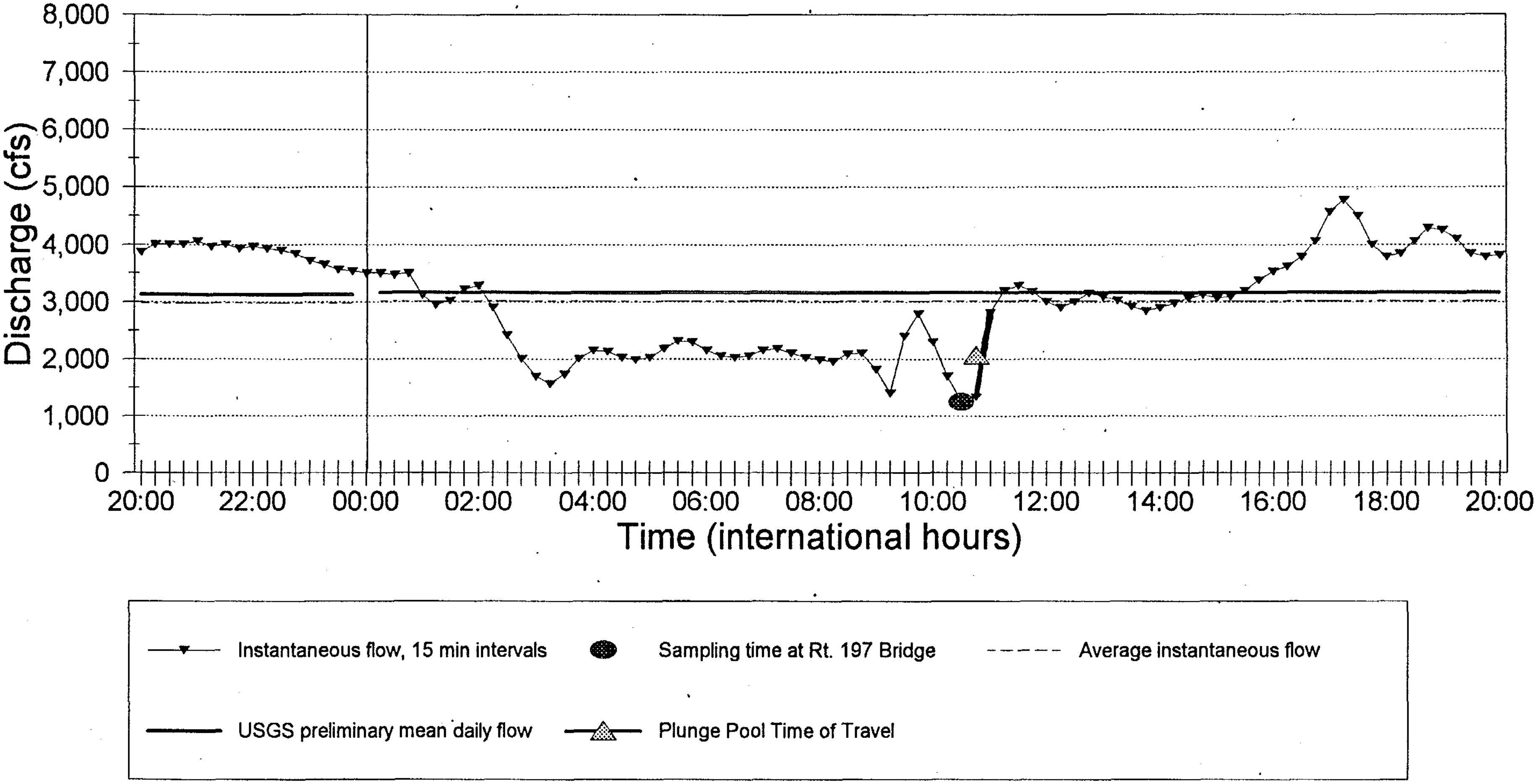
Flow at the Fort Edward Gaging Station: October 28-29, 1996



Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is preliminary data adjusted by the USGS. Daily averages are based on midnight to midnight time periods.

321844

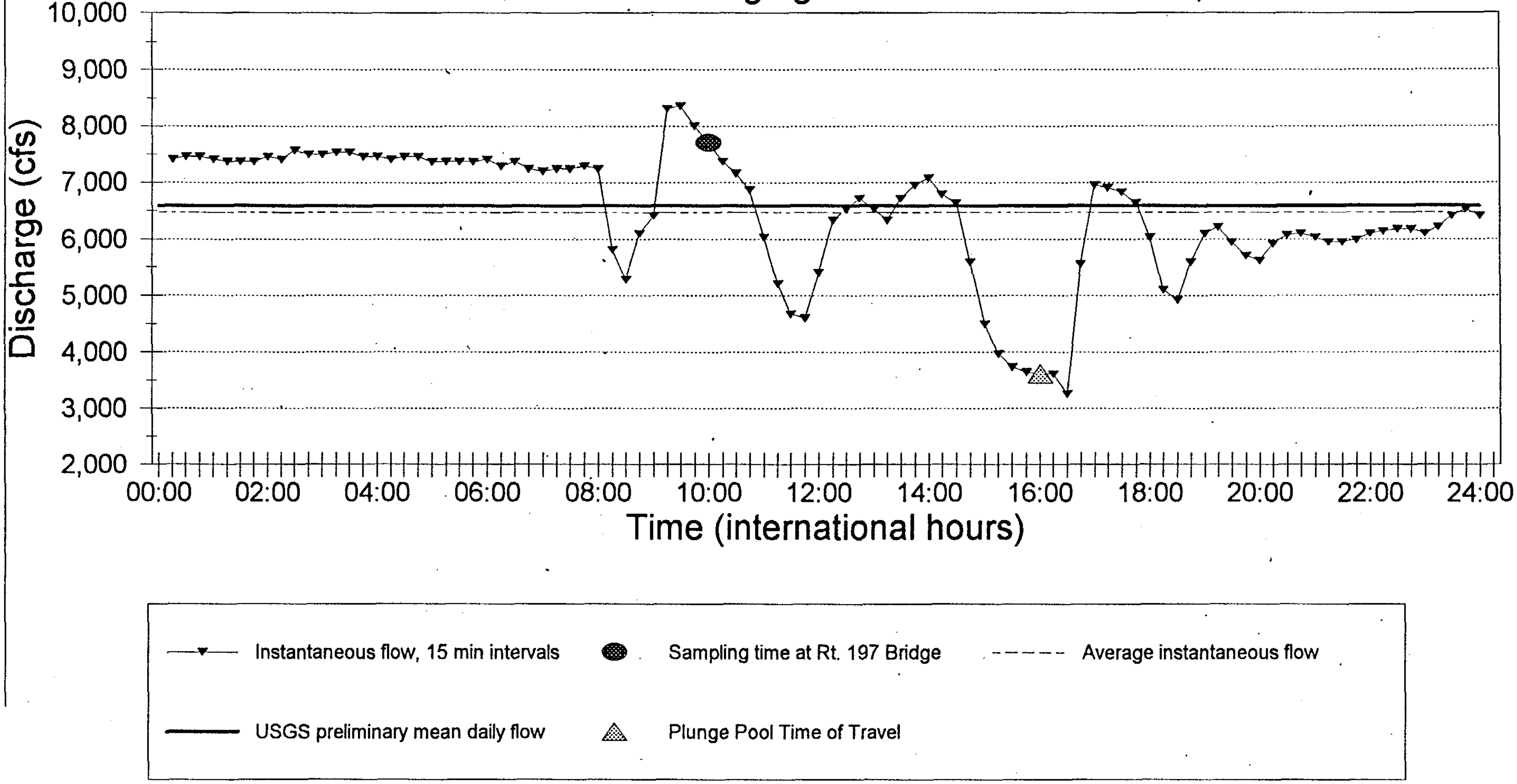
Figure C-56
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: November 5-6, 1996



Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is preliminary data adjusted by the USGS. Daily averages are based on midnight to midnight time periods.

321845

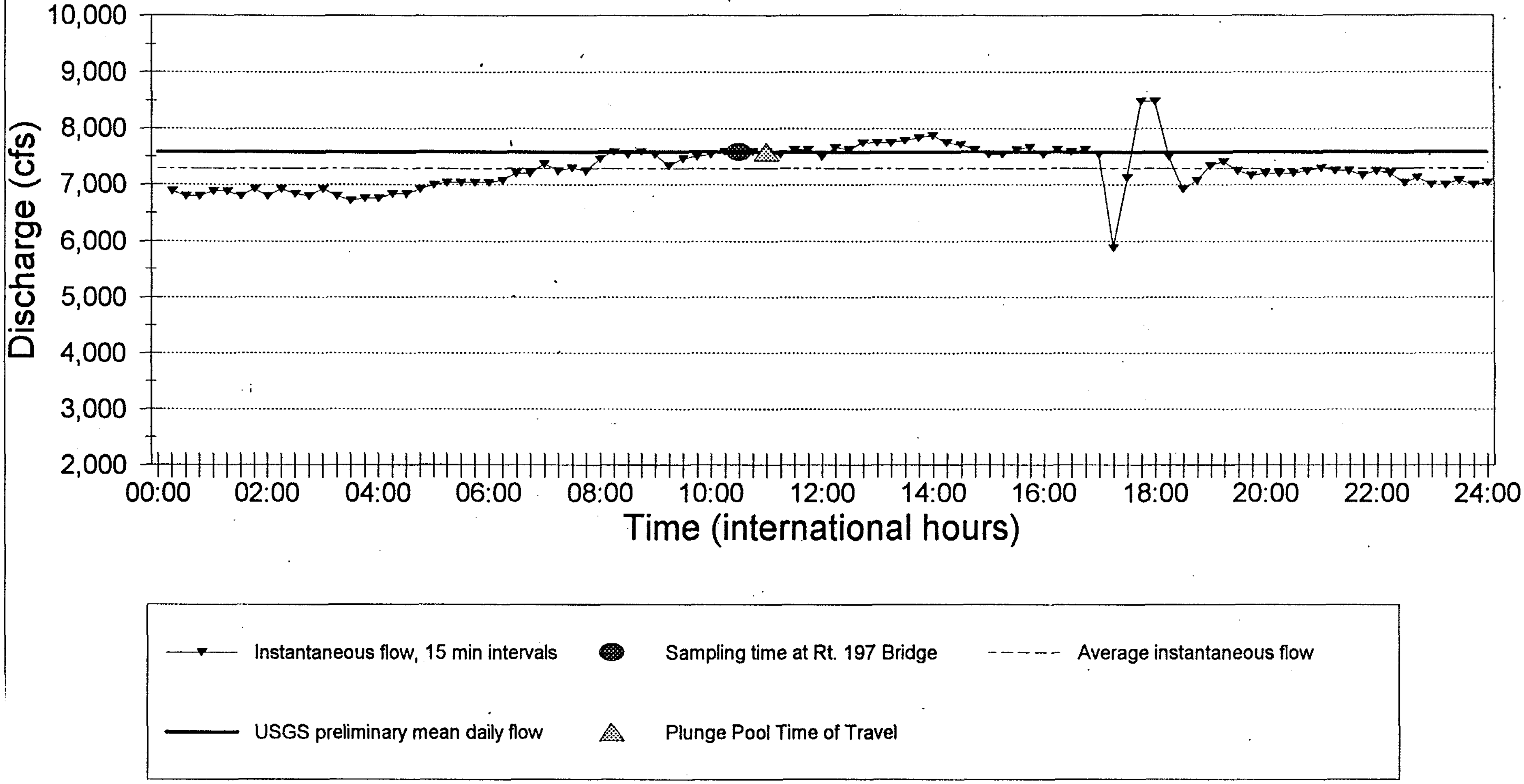
Figure C-57
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: November 14, 1996



321846

Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is preliminary data adjusted by the USGS. Daily averages are based on midnight to midnight time periods.

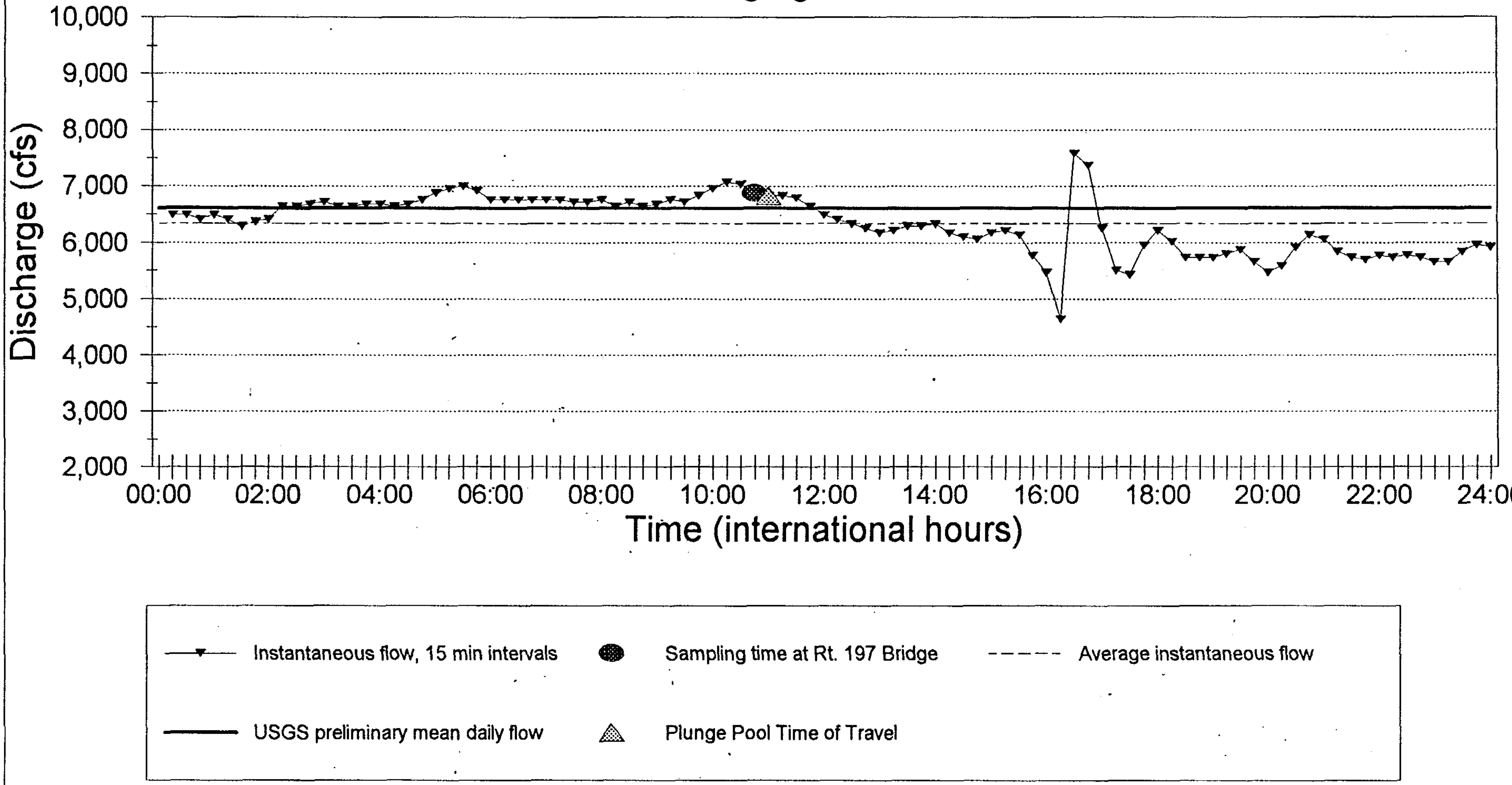
Figure C-58
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: November 20, 1996



Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is preliminary data adjusted by the USGS. Daily averages are based on midnight to midnight time periods.

321847

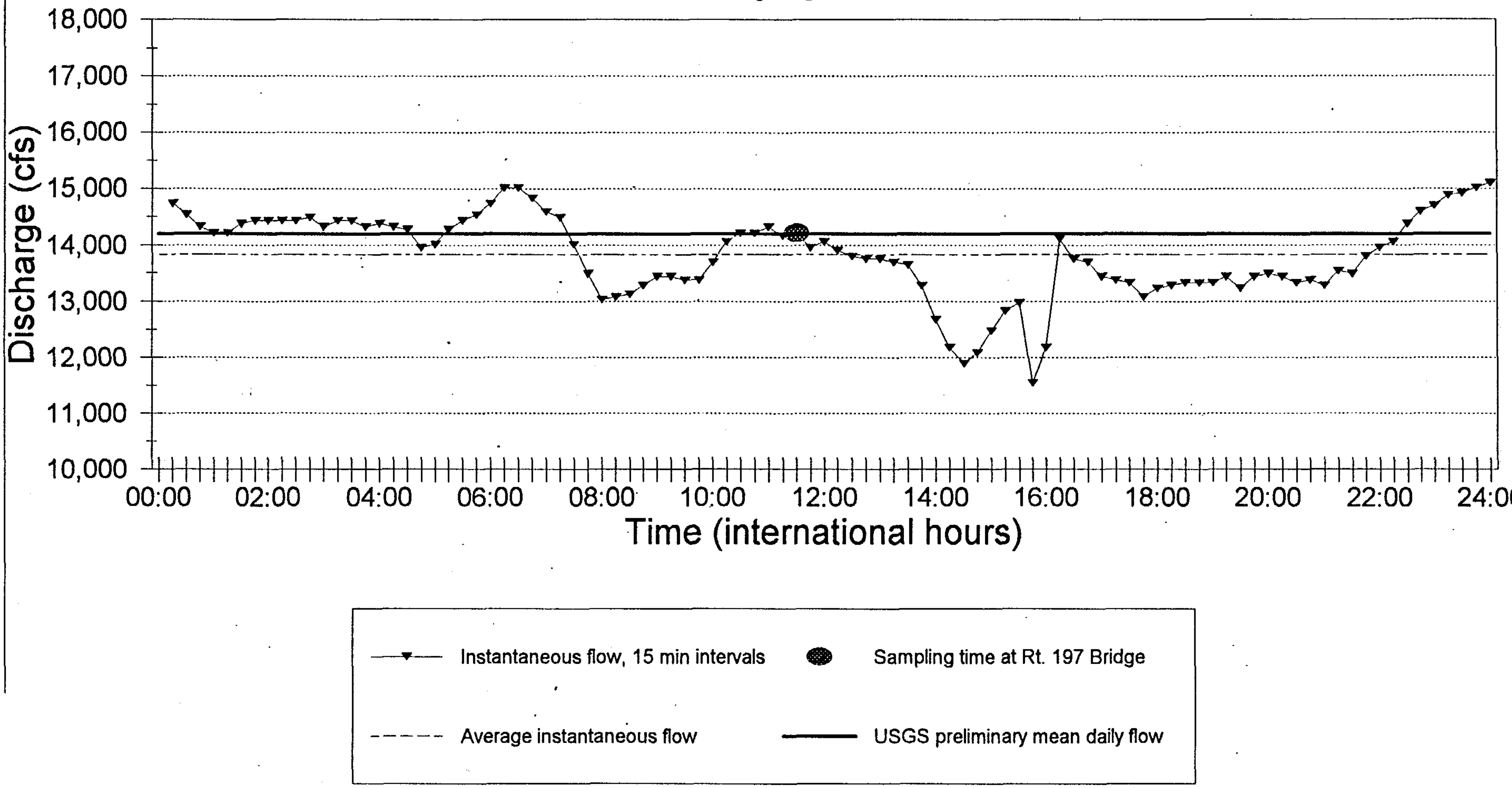
Figure C-59
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: November 27, 1996



Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is preliminary data adjusted by the USGS. Daily averages are based on midnight to midnight time periods.

321848

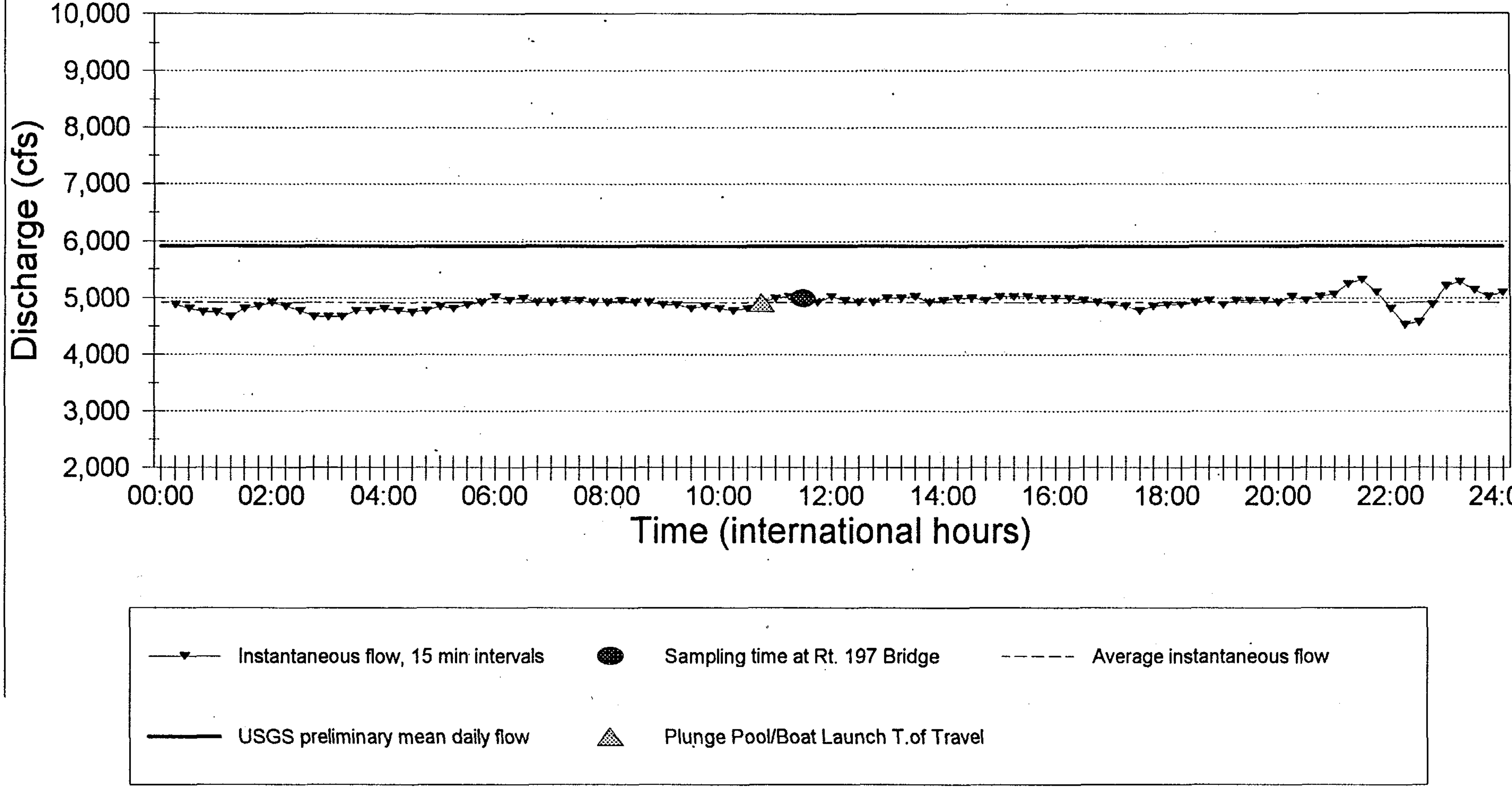
Figure C-60
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: December 4, 1996



321849

Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is preliminary data adjusted by the USGS. Daily averages are based on midnight to midnight time periods.

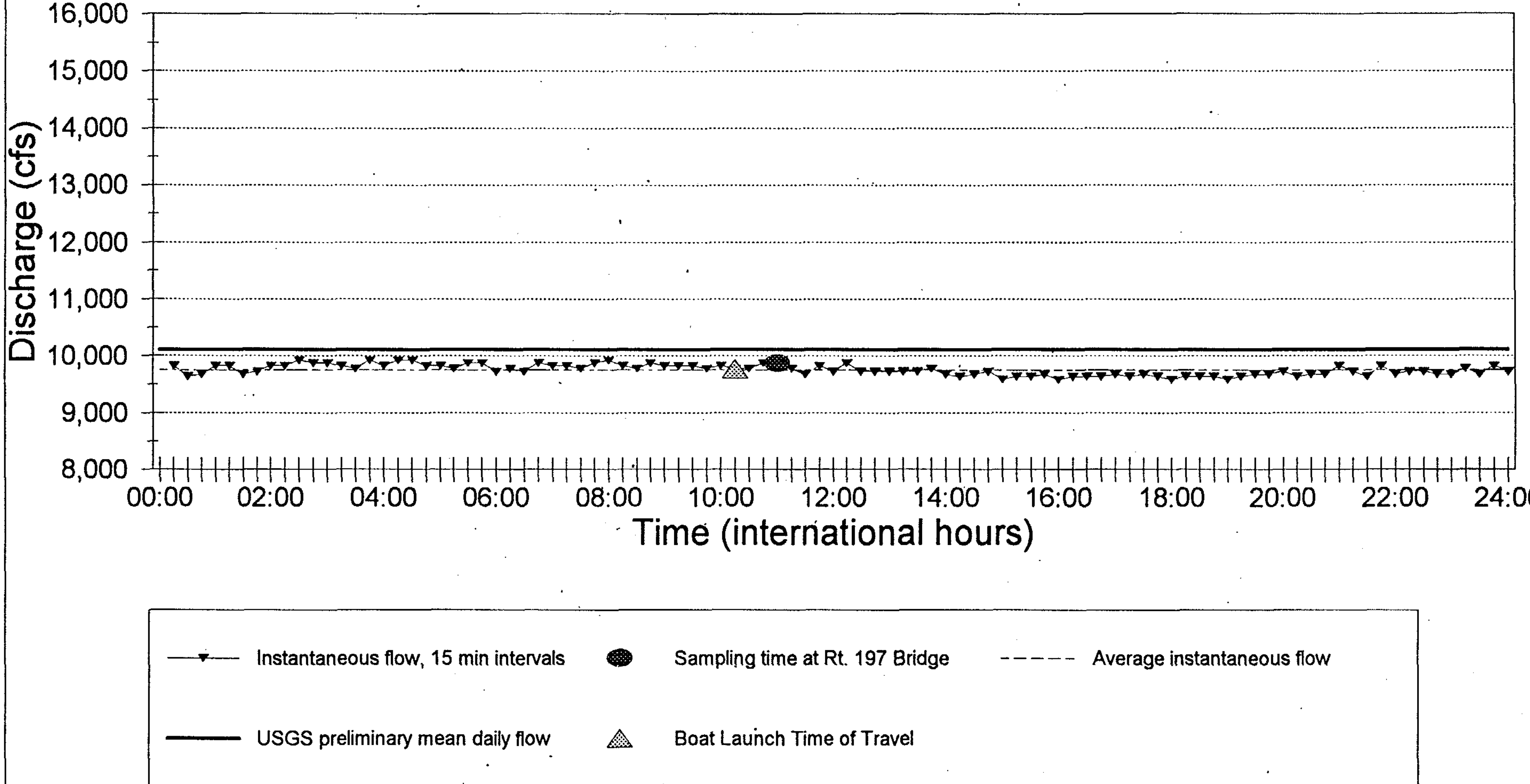
Figure C-61
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: December 11, 1996



321850

Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is preliminary data adjusted by the USGS. Daily averages are based on midnight to midnight time periods.

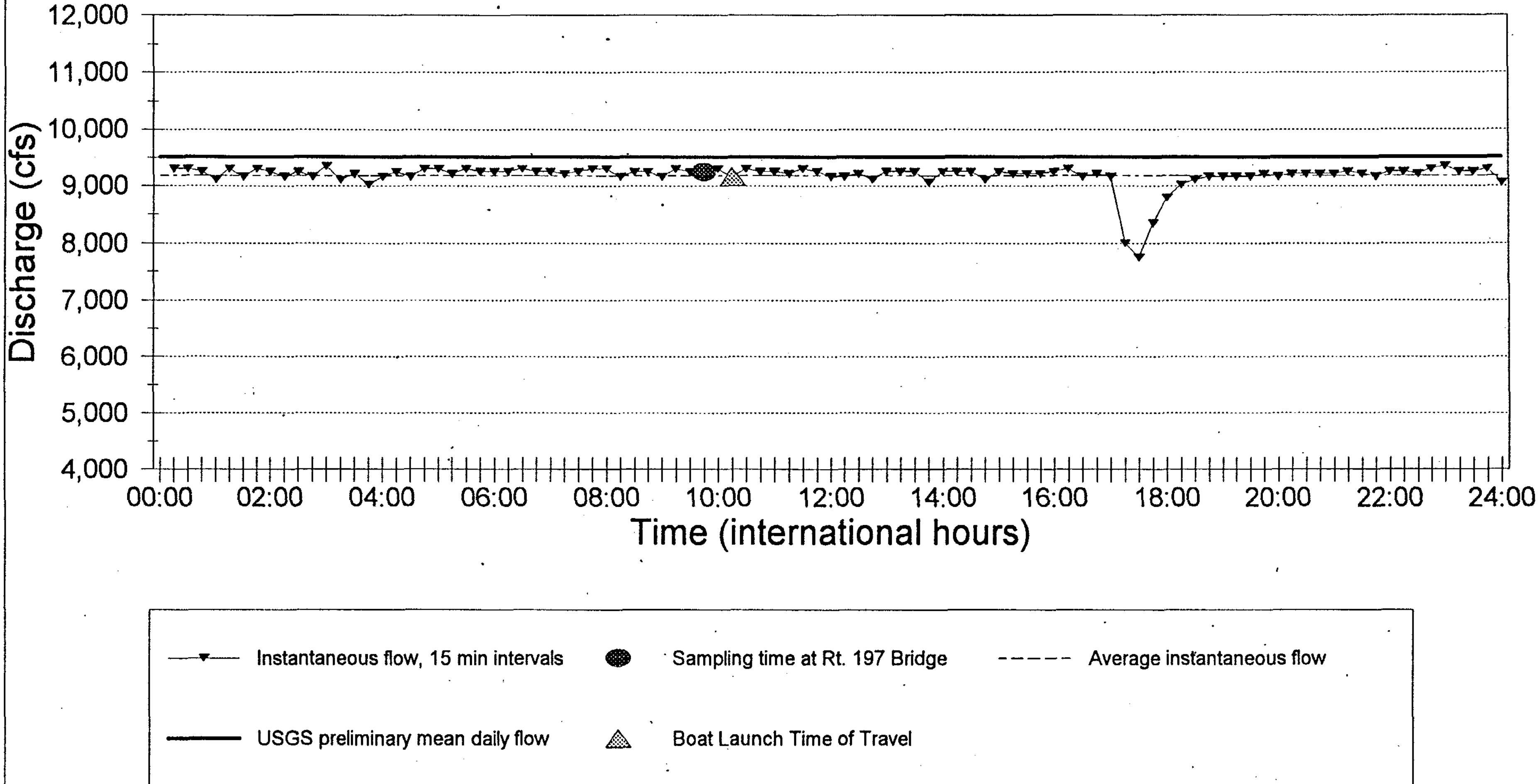
Figure C-62
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: December 18, 1996



Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is preliminary data adjusted by the USGS. Daily averages are based on midnight to midnight time periods.

321851

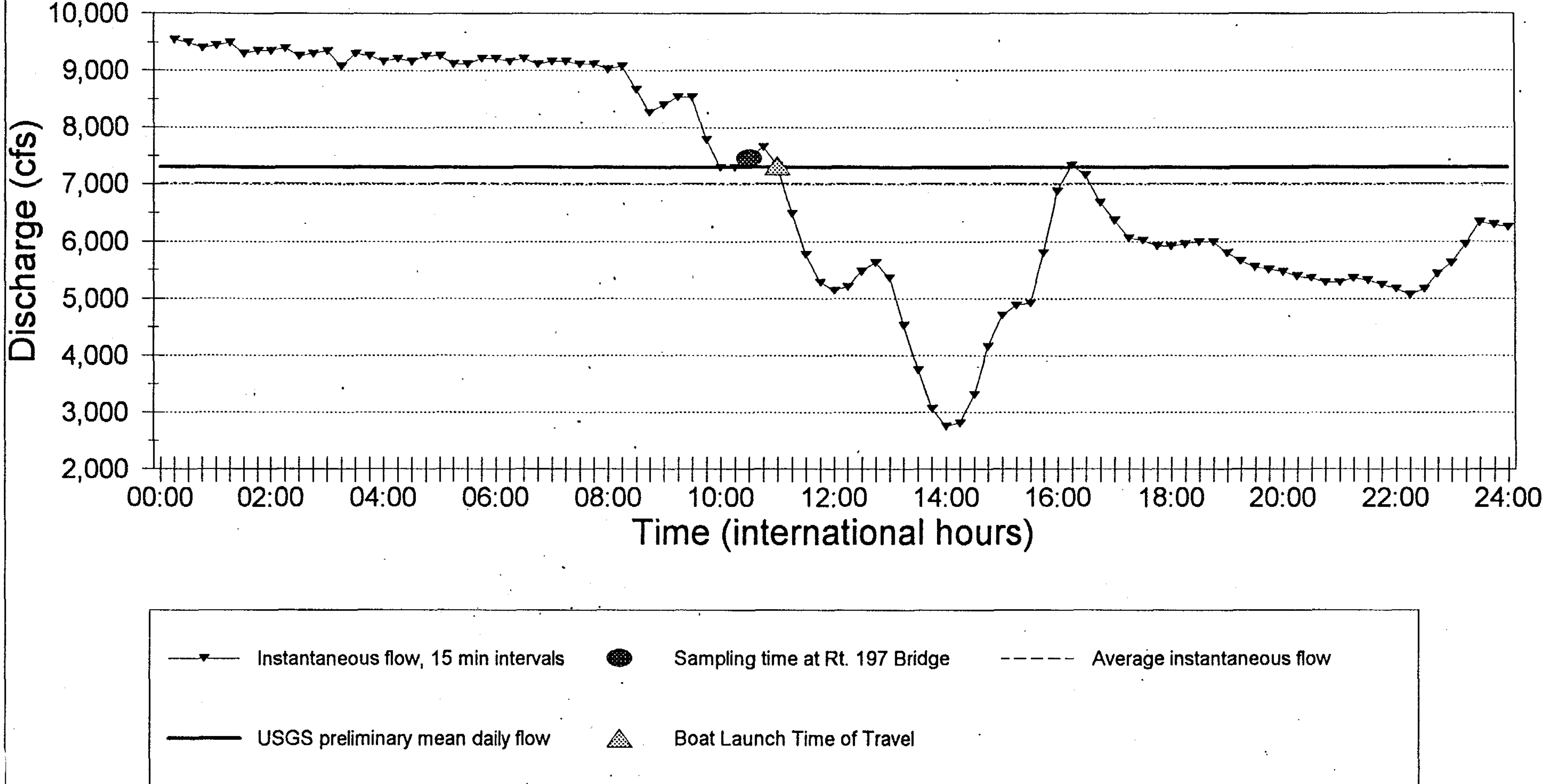
Figure C-63
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: December 23, 1996



Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is preliminary data adjusted by the USGS. Daily averages are based on midnight to midnight time periods.

321852

Figure C-64
General Electric Company - Hudson River Project
Flow at the Fort Edward Gaging Station: December 30, 1996



Note: Instantaneous flow data obtained from the USGS for the gaging station at Fort Edward are raw, unadjusted values. Average instantaneous flow is based on these raw values. USGS calculated mean daily flow is preliminary data adjusted by the USGS. Daily averages are based on midnight to midnight time periods.

321853

APPENDIX D

Field logs

Field logs
PCRDMP Weekly Sampling

321855

GENERAL ELEC IC COMPANY
FORD EDWARD DAM - PCB REMNANT DEPOSIT CONTAINMENT
1996 POST-CONSTRUCTION MONITORING PROGRAM
(Project 612.204)

FIELD LOG

Site	Date	Time	Sample Type	Approximate Water Depth	Water Temp.	Comments
HRM 197.0 (Fenmore Bridge)	1/19/96	9:15a	Kemmerer Comp	~~4'~~ 6-8' CB	4°C	Collect Blind dups here
HRM 196.8 (West Shore)	"	9:38a	Grab	2'	2°C	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	"	11:00	Kemmerer Comp.	6-8'	2°C	Collect MS Samples here
HRM 188.5 (Thompson Island Dam)	"	11:40	Comp.	3-4'	2°C	open Water 10-15' from dam
Ft. Edward Staff Gage						

Additional Notes:

Weather Data

Temperature: 50°
Wind: 10-20 mph, some Gusts
Precipitation: rainy

Sampled by: Chris Bablin, OBG

GENERAL ELEC IC COMPANY
FORD EDWARD DAM - PCB REMNANT DEPOSIT CONTAINMENT
1996 POST-CONSTRUCTION MONITORING PROGRAM
(Project 612.204)

FIELD LOG

Site	Date	Time	Sample Type	Approximate Water Depth	Water Temp.	Comments
HRM 197.0 (Fenmore Bridge)	1/24/96	13:15	Kemmerer Comp & Stainless steel Grab	4-6'	2°C	Swift current
HRM 196.8 (West Shore)	"	14:00	GRAB	3-4'	1°C	Swift current, Collect MS here Yellow tinge to water
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	"	15:00	Kemmerer Comp & stainless steel grab	4-6'	4°C	
HRM 188.5 (Thompson Island Dam)	"	15:50	Grab	3-5'	2°C	Collect Blind dups. here
Ft. Edward Staff Gage						

Additional Notes:

Weather Data

Temperature: 45°
Wind: 5-10 mph
Precipitation: rain

Sampled by: Chris Boblin
Janet Forsell

GENERAL ELEC[illegible]C COMPANY
FORD EDWARD DAM - PCB REMNANT DEPOSIT CONTAINMENT
1996 POST-CONSTRUCTION MONITORING PROGRAM
(Project 612.204)

FIELD LOG

Site	Date	Time	Sample Type	Approximate Water Depth	Water Temp.	Comments
HRM 197.0 (Fenmore Bridge)	1/31/96	12:50	Composite		0°C	~~MS~~ EQBL
HRM 196.8 (West Shore)		13:10	Grab		0°C	PCB DUP
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)		14:00	Composite			MS
HRM 188.5 (Thompson Island Dam)		14:45	Grab			TSS DUP
Hex 197.0		9:55				
Hex 194.2		9:30				
Ft. Edward Staff Gage		15:38				23.48

Additional Notes: Hrm 197.0 & Hrm 194.2 collected w/ Kemmerer, distributed directly to bottles (no compositing bucket)

Weather Data

Temperature: ~25°F @ 1:30

Wind: breezy

Precipitation: none

Sampled by: William Ayling

January 17, 1996
(:djt/data/field_log)

321858

O'Brien & Gere Engineers, Inc.

GENERAL ELEC RIC COMPANY
FORD EDWARD DAM - PCB REMNANT DEPOSIT CONTAINMENT
1996 POST-CONSTRUCTION MONITORING PROGRAM
(Project 612.204)

FIELD LOG

Site	Date	Time	Sample Type	Approximate Water Depth	Water Temp.	Comments
HRM 197.0 (Fenmore Bridge)	2/7/96	11:45	Composite		0°C	MS
HRM 196.8 (West Shore)	↓	12:15	Grab		0°C	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	↓	12:45	Composite		0°C	EQBL
HRM 188.5 (Thompson Island Dam)	↓	13:30	Composite		0°C	Blind Dup
Ft. Edward Staff Gage	2/7/96	12:30	-			22.74

Additional Notes:

Weather Data

Temperature: 31°F @ 12:31
Wind: South
Precipitation: NONE

Sampled by: W A Ayling / J Forsell

GENERAL ELECTRIC COMPANY
FORD EDWARD DAM - PCB REMNANT DEPOSIT CONTAINMENT
1996 POST-CONSTRUCTION MONITORING PROGRAM
(Project 612.204)

FIELD LOG

Site	Date	Time	Sample Type	Approximate Water Depth	Water Temp.	Comments
HRM 197.0 (Fenmore Bridge)	2/14/96	11:54	Composite		1°C	#4 HR-4 95 Kemmerer
HRM 196.8 (West Shore)	↓	12:20	Grab		0°C	#1 HR-1
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)		13:15	Composite		0°C	#3 HR-3 Duplicate 95 Kemmerer
HRM 188.5 (Thompson Island Dam)		13:45	Grab		0°C	#2 HR-2 Matrix spike, New bucket
HEX BLANK		7:30				
EQBL		7:45				
Ft. Edward Staff Gage	2/14/96	12:40				22.11

Additional Notes: Kemmerer messenger off

Weather Data

Temperature: ________
Wind: ________
Precipitation: ________

Sampled by: W Ayling C Bablin

GENERAL ELECTRIC COMPANY
FORD EDWARD DAM - PCB REMNANT DEPOSIT CONTAINMENT
1996 POST-CONSTRUCTION MONITORING PROGRAM
(Project 612.204)

2/21/96

FIELD LOG

Site	Date	Time	Sample Type	Approximate Water Depth	Water Temp.	Comments
HRM 197.0 (Fenmore Bridge)	2/21/96	10:15	COMPOSITE ('95 Kemmerer)		2°C	BLIND DUP
HRM 196.8 (West Shore)	↓	10:45	GRAB		2°C	Bakers Falls - too foggy to see MS
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)		11:45	COMPOSITE ('95 Kemmerer)		2°C	EQBL (11:30)
HRM 188.5 (Thompson Island Dam)		12:00	GRAB		2°C	
Ft. Edward Staff Gage	✓	10:57				22.27

Additional Notes: Field decon Kemmerer using soapy water, spray rinse w/ hot water rinse, then QAPP procedures

Weather Data Foggy
Temperature: 8°C @ 12:00
Wind: Calm
Precipitation: light rain

Sampled by: W. Ayling

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE February 28, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Comments
HRM 197.0 (Bridge Street Bridge)	9:45	Type: Composite Kemmerer: 95	2°C	0-4'	MS	Bakers Falls: clustered, except small amount through drains
HRM 196.8 (West Shore)	10:20	Type: Grab	2°C	Surface	Dup	Bakers Falls: dry
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	11:10	Type: Composite Kemmerer: 95	2°C	0-4'	—	
HRM 188.5 (Thompson Island Dam)	11:30	Type: Grab	2°C	Surface	—	
Equipment blank: HRM 188.5	6:15	Type: Grab Kemmerer: —				
HEXBL-1	6:20	GRAB Kemmerer 95	—	—	—	
HEXBL-2	6:30	GRAB Kemmerer 96	—	—	—	
Ft. Edward Staff Gage (518) 747-9900	~~??~~ 11:20					Level: 22.38 ≈ 7,000 cfs

Additional Notes:

Weather Data
Temperature: 10°C
Wind: light west
Precipitation: light rain 9:45 - Clearing

Sampled by: William Ayling

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE MARCH 6, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	9:00	Type: Composite Kemmerer: 95	1°C	0-4'	—	Bakers Falls: Dry dam
HRM 196.8 (West Shore)	9:45	Type: Grab	1°C	Surface	—	Bakers Falls: Snow covering, falls dry
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	10:20	Type: Composite Kemmerer: 95	2°C	0-4'	DUP	
HRM 188.5 (Thompson Island Dam)	11:00	Type: Grab	0°C	Surface	MS	
Equipment blank: HRM 197.0	5:30	Type: Grab Kemmerer: 95				
HRX BL-96	5:45	Grab Kemmerer: 96	—	—	—	
Ft. Edward Staff Gage (518) 747-9900	10:40					Level: 22.07 = 5,800 cfs

Additional Notes:

Weather Data Cloudy
Temperature: 3°C
Wind: calm to breezy NE@10mph
Precipitation: none, had snowed over night 2-3"

Sampled by: William Ayling / Chris Boblin

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE MARCH 13, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	9:10	Type: Composite Kemmerer: 95	2°C	0-4'	DUP	Bakers Falls: Dry
HRM 196.8 (West Shore)	9:45	Type: Grab	2°C	Surface	MS	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	10:15	Type: Composite Kemmerer: 96	2-3°C	0-4'	—	
HRM 188.5 (Thompson Island Dam)	10:50	Type: Grab	2°C	Surface	—	
Equipment blank: HRM 194.2	6:00	Type: Grab Kemmerer: 96				
Ft. Edward Staff Gage (518) 747-9900	10:33					Level: 22.12

Additional Notes:

Weather Data Sunny - clear
Temperature: 42°F
Wind: Calm
Precipitation: none

Sampled by: W. Ayling

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE MARCH 21, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	7:10	Type: Composite Kemmerer: 95	4°C	0-4'	MS	Bakers Falls: dry
HRM 196.8 (West Shore)	7:35	Type: Grab	3°C	SURFACE	DUP	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	7:55 E 8:15 W	Type: Composite Kemmerer: 96	3°C	0-4	—	
HRM 188.5 (Thompson Island Dam)	8:40	Type: Grab	3°C	SURFACE	—	
Equipment blank: HRM 197.0	6:25	Type: Grab Kemmerer: 95				AT MOTEL
Ft. Edward Staff Gage (518) 747-9900	8:45					Level: 22.29

Additional Notes:

Weather Data
Temperature: ~30s F
Wind: CALM
Precipitation: LIGHT RAIN

Sampled by: [signature]

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE March 26, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	10:45	Type: Composite Kemmerer: 95	4°C	0.4'	—	pool above dam low velocity flow dam outlet valves open 8. Bakers Falls: Water flowing over dam
HRM 196.8 (West Shore)	11:10	Type: Grab	5°C	Surface	—	(11:22) flow irregular over dam.
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	11:55 E 12:15 W	Type: Composite Kemmerer: 9695	5°C	0.4'	DUP	
HRM 188.5 (Thompson Island Dam)	12:40	Type: Grab	4°C	Surface	MS	
Equipment blank: HRM ~~194.2~~ 197.0	7:30	Type: Grab Kemmerer: 9695				96 Kemmerer - discharge valve broken.
Ft. Edward Staff Gage (518) 747-9900	12:20					Level: 22.27 (6,600 cfs)

Additional Notes:

Weather Data: Sunny
Temperature: 8°C
Wind: Calm
Precipitation: None

Sampled by: W. Ayling

321866

March 8, 1996

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE April 3, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	10:00	Type: Composite Kemmerer: 95	6°C	0-4'	—	✓	Bakers Falls: occassional trickle over dam
HRM 196.8 (West Shore)	10:25	Type: Grab	6°C	Surface	—	✓	no archive sample - bottle broke
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	11:00E 11:26W	Type: Composite Kemmerer: 96	7°C	0-4'	MS	✓	
HRM 188.5 (Thompson Island Dam)	11:45	Type: Grab	7°C	SURFACE	DUP	✓	
Equipment blank: HRM 194.2	6:50	Type: Grab Kemmerer: 96					
Ft. Edward Staff Gage (518) 747-9900	9:45 11:35						Level: 22.39 7,000 cfs 22.46 7,300 cfs

Additional Notes:

Weather Data

Description: Sunny
Temperature: ~72°
Wind: light N
Precipitation: none

Sampled by: William Ayling

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE APRIL 10, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	10:50	Type: Composite Kemmerer: 95	5°C	0-4'	DUP	✓	water depth ~8' white caps Bakers Falls: occassional trickle over da
HRM 196.8 (West Shore)	11:10	Type: Grab	6°C	SURFACE	—	✓	Algae growth along shoreline
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	11:45E 12:05W	Type: Composite Kemmerer: 96	6°C	0-4'	—	✓	waterdepth east channel ~5' west channel ~7'
HRM 188.5 (Thompson Island Dam)	12:30	Type: Grab	6°C	SURFACE	MS	✓	
Equipment blank: HRM 188.5	7:20	Type: Grab Kemmerer: NA					
Ft. Edward Staff Gage (518) 747-9900	10:40 11:30						Level: 21.85 21.95

Additional Notes:

Weather Data
Description: Cloudy, Windy
Temperature: 5°C @ 1340
Wind: North - Strong
Precipitation: light snow in air begin @ noon

Sampled by: William Ayling

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE APRIL 17, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	13:15	Type: Composite Kemmerer: 95	6°C	0.5'	–	✓	River ~~brown~~ typical appearance. Small particulates visible in sample, typical but more size quant. Bakers Falls: water flowing over dam
HRM 196.8 (West Shore)	13:45	Type: Grab	6°C	SURFACE	DUP	✓	original sample: fine particulates, 1 pinhead size phytoplankton, 1 wood chip 1/2 eraser size duplicate: fine particulate
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	14:30 14:50	Type: Composite Kemmerer: 96	6°C	0.4'	MS	✓	
HRM 188.5 (Thompson Island Dam)	15:10	Type: Grab	6°C	SURFACE	–	✓	slightly opaque/murky
Equipment blank: HRM 194.2	6:30	Type: Grab Kemmerer: 96					
Ft. Edward Staff Gage (518) 747-9900	12:45 15:17						Level: 25.24 25.07

Additional Notes: Spoke w/ workers at Adirondack Hydro - water came up over night was not over dam Tues Eve when they left work

Weather Data
Description: Overcast
Temperature: ~ 30's
Wind: light
Precipitation: Spits of rain/hail

Sampled by: William Ayling

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE April 24, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	10:10	Type: Composite Kemmerer: 95	8°C	0-4'	—	✓	Bakers Falls: Water flowing over dam at this loc.
HRM 196.8 (West Shore)	10:40	Type: Grab	9°C	Surface	MS	✓	Particulates observed in all samples inc. pinhead size wood chip etc.
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	11:10E 11:30M	Type: Composite Kemmerer: 96	8°C	0-4'	DUP	✓	
HRM 188.5 (Thompson Island Dam)	11:50	Type: Grab	9°C	Surface	—	✓	
Equipment blank: HRM 197.0	9:45	Type: Grab Kemmerer: 95					Sample collected at parking area entrance to facility on ~~West~~ shore
Ft. Edward Staff Gage (518) 747-9900	10:58						Level: 25.97

Additional Notes:

Weather Data
Description: overcast, partly sunny
Temperature: 7°C
Wind: light N
Precipitation: None

Sampled by: William Ayling

321870

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE May 1, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	13:45	Type: Composite Kemmerer: 95	10°C	0-4'	MS	✓	Bakers Falls: water flowing over dam
HRM 196.8 (West Shore)	14:10	Type: Grab	10°C	SURFACE	—	✓	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	14:30E 14:50M	Type: Composite Kemmerer: 96	10°C	0-4'	—	✓	
HRM 188.5 (Thompson Island Dam)	15:30	Type: Grab	10°C	SURFACE	DUP	✓	
Equipment blank: HRM HRM 194.2	10:00	Type: Grab Kemmerer: 96					
Ft. Edward Staff Gage (518) 747-9900	14:20						Level: 25.64 ~~&~~ 22,500

Additional Notes: Photographs of Sampling locations
Snook Kill & Moses Kill Muddy, discharge/migration along shore apparent

Weather Data
Description: Sunny
Temperature: 65°F
Wind: light
Precipitation: NONE

Sampled by: William Ayling

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE May 8, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	10:45	Type: Composite Kemmerer: 95	11°C	0-4'	DUP	✓	Bakers Falls: water flowing over dam
HRM 196.8 (West Shore)	11:15	Type: Grab	11°C	Surface	—	✓	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	11:45E 12:00M	Type: Composite Kemmerer: 96	11°C	0-4'	—	✓	
HRM 188.5 (Thompson Island Dam)	12:20	Type: Grab	12°C	Surface	MS ~~Dup~~	✓	
Equipment blank: HRM 188.5	7:30	Type: Grab Kemmerer: NA					
Ft. Edward Staff Gage (518) 747-9900	10:30 12:30						Level: 24.25 24.35 16,100

Additional Notes: USGS ON WEST BRIDGE AT RT 197 FT Edward TO CALIBRATE STAFF GAGE.

Weather Data
Description: Sunny, light breeze
Temperature: 60's
Wind: West
Precipitation: NONE

Sampled by: William Ayling

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE May 15, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	12:40	Type: Composite Kemmerer: 95	11°C	0.4'	—	✓	Bakers Falls: Water flowing over dam
HRM 196.8 (West Shore)	13:00	Type: Grab	11°C	Surface	Dup	✓ ✓	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	13:35E 14:00W	Type: Composite Kemmerer: 96	13°C	0.4'	MS	✓ ✓	
HRM 188.5 (Thompson Island Dam)	14:15	Type: Grab	11°C	Surface	—	✓	Dandelion seed type materials flowing along west shore @ dam
Equipment blank: HRM 197.0	5:30	Type: Grab Kemmerer: 95					
Ft. Edward Staff Gage (518) 747-9900	12:15 14:04						Level: 25.85 25.83

Additional Notes: 95 Kemmerer used at HRM 194.2W (96 Kemmerer valve broke following sample collection at HRM 194.2 E) 95 Kemmerer field deconed before use

Weather Data
Description: Sunny
Temperature: 65 - 70°F
Wind: light breeze
Precipitation: None

Sampled by: William Ayling

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE May 22, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	10:35	Type: Composite Kemmerer: 95	16°C	0-4'	—	✓	Bakers Falls: water flowing over dam
HRM 196.8 (West Shore)	11:05	Type: Grab	16°C	SURFACE	MS	✓	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	11:55	Type: Composite Kemmerer: 96	16°C	0-4'	DUP	✓	
HRM 188.5 (Thompson Island Dam)	12:15	Type: Grab	16°C	SURFACE	—	✓	
Equipment blank: HRM 194.2	7:30	Type: Grab Kemmerer: 96					
Ft. Edward Staff Gage (518) 747-9900	10:20 13:20						Level: 24.70 24.78 ~16,200

Additional Notes:

Sampled by: William Ayling

Weather Data
Description: Sunny
Temperature: ~70°F
Wind: Light South
Precipitation: NONE

321874

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE May 29, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	10:25	Type: Composite Kemmerer: 95	15°C	0-4'	MS	✓	Bakers Falls: Water not flowing over, ~~dry~~ but dam face wet
HRM 196.8 (West Shore)	11:00	Type: Grab	15°C	Surface	–	✓	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	11:15E 11:35W	Type: Composite Kemmerer: 96	15°C	0-4'	–	✓	
HRM 188.5 (Thompson Island Dam)	12:00	Type: Grab	15°C	Surface	DUP	✓	
Equipment blank: HRM ~~198.0~~ 197.0	7:30	Type: Grab Kemmerer: 95					
Ft. Edward Staff Gage (518) 747-9900	11:14						Level: 23.66

Additional Notes:

Weather Data
Description: overcast
Temperature: 50's F
Wind: light
Precipitation: none

Sampled by: William Ayling

321875

April 22, 1996

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE June 5, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	13:15	Type: Composite Kemmerer: 95	20°C	0-4'	DUP	✓	Total water depth ~8.5' Bakers Falls: Dry
HRM 196.8 (West Shore)	13:45	Type: Grab	20°C	Surface	—	✓	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	14:05E 14:10W	Type: Composite Kemmerer: 96	20°C	0-4'	—	✓	Total water depth East, 7.5' West, 7.5'
HRM 188.5 (Thompson Island Dam)	14:35	Type: Grab	20°C	Surface	MS	✓	
Equipment blank: HRM 194.2	9:30	Type: Grab Kemmerer: 96					
Ft. Edward Staff Gage (518) 747-9900	13:00						Level: 21.97 5400

Additional Notes:

Weather Data
Description: Sunny
Temperature: ~80°F
Wind: breezy W
Precipitation: NONE

Sampled by: William [signature]

April 22, 1996

321876

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE JUNE 12, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	11:10	Type: Composite Kemmerer: 95	21°C	0-6'	—	✓	Bakers Falls: trickle over mid-section of dam
HRM 196.8 (West Shore)	11:40	Type: Grab	21°C	SURFACE	DUP	✓	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	12:10 E 12:20 W	Type: Composite Kemmerer: 96	21°C	0-6'	MS	✓	Kemmerer broke loose
HRM 188.5 (Thompson Island Dam)	12:45	Type: Grab	21°C	SURFACE	—	✓	
Equipment blank: HRM 188.5	7:30	Type: Grab Kemmerer: NA					
Ft. Edward Staff Gage (518) 747-9900							Level:

Additional Notes: 12:05 Suspect problems w/ staff gage 19.86 = 500 cfs. Looks more like 6,000-8,000 cfs. Water at dam suggests ~8,000+

Installed new valve in Kemmerer sampler for HRM 194.2

Weather Data
Description: Partly Sunny
Temperature: ~80°F
Wind: light W
Precipitation: NONE

Sampled by: William Ayling

321877

April 22, 1996

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE June 19 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	10:45	Type: Composite Kemmerer: 95	22°C	0-6'	—	✓	Bakers Falls: dry
HRM 196.8 (West Shore)	11:20	Type: Grab	22°C	Surface	MS	✓	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	12:00E 12:20W	Type: Composite Kemmerer: 95	22°C	0-6'	DUP	✓	Equipment cleaned in field prior to sampling
HRM 188.5 (Thompson Island Dam)	12:45	Type: Grab	22°C	Surface	—	✓	
Equipment blank: HRM ~~194.2~~ 197.0	7:15	Type: Grab Kemmerer: 95					EqBL prepared using OBG lab water from pilot room
Ft. Edward Staff Gage (518) 747-9900	1036 12:54						Level: 21.93 22.04 > 5,500

Additional Notes:

Weather Data
Description: Cloudy
Temperature: 70s
Wind: Calm
Precipitation: Sprinkling

Sampled by: William Ayling

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE JUNE 26, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	10:05	Type: Composite Kemmerer: 95	21°C	0-6'	MS	✓	Bakers Falls: dry (water in wing dam pool)
HRM 196.8 (West Shore)	10:25	Type: Grab	21°C	Surface	—	✓	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	11:15	Type: Composite Kemmerer: 95	21°C	0-6'	—	✓	
HRM 188.5 (Thompson Island Dam)	11:40	Type: Grab	21°C	Surface	DUP	✓	
Equipment blank: HRM 194.2	10:55	Type: Grab Kemmerer: 95					prepared in field at Rogers Island
Ft. Edward Staff Gage (518) 747-9900	9:42 11:47						Level: 21.81 21.51

Additional Notes:

Weather Data
Description: Sunny
Temperature: upper 60's F - 70's
Wind: NW gusty at times
Precipitation: NONE

Sampled by: William Ayling

321879

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE July 1, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	11:35	Type: Composite Kemmerer: 95	23°C	0-6'	DUP	✓	Bakers Falls: dry
HRM 196.8 (West Shore)	11:55	Type: Grab	23°C	SURFACE	—	✓	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	1230E 12:45W	Type: Composite Kemmerer: 95	23°C	0-6'	MS	✓	
HRM 188.5 (Thompson Island Dam)	13:05	Type: Grab	23°C	SURFACE	—	✓	
Equipment blank: HRM 197.0	8:00	Type: Grab Kemmerer: 95					
Ft. Edward Staff Gage (518) 747-9900	12:07 13:14						Level: 21.34 } 3320 21.03 } 2475

Additional Notes:

Sampled by: William Ayling

Weather Data
Description: Sunny
Temperature: 75-80°F
Wind: Breezy - W
Precipitation: NONE

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE July 10, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	10:05	Type: Composite Kemmerer: 95	23°C	0-6'	—	✓	Stream flowing from wing dam pool Bakers Falls: occassional trickle over dam
HRM 196.8 (West Shore)	10:30	Type: Grab	23°C	Surface	MS	✓	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	11:30 E 11:45 M	Type: Composite Kemmerer: 95	23°C	0-6	—	✓	
HRM 188.5 (Thompson Island Dam)	12:05	Type: Grab	23°C	Surface	DUP	✓	TSS Samples collected last (Dup the only)
Equipment blank: HRM 194.2	11:15	Type: Grab Kemmerer: 95					Sample collected at East Bridge @ HRM 194.2
Ft. Edward Staff Gage (518) 747-9900	11:54						Level: 21.68

Additional Notes: Dames & Moore plunge pool sample rec'd to deliver to NEA

Weather Data
Description: Sunny Breezy
Temperature: 70's
Wind: W
Precipitation: NONE

Sampled by: William Ayling

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE July 17, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	10:10	Type: Composite Kemmerer:	24°C	0-6'	MS	✓	No stream from wing dam pool Bakers Falls: dry
HRM 196.8 (West Shore)	10:35	Type: Grab	24°C	Surface	DUP	✓	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	11:30	Type: Composite Kemmerer:	24°C	0-6'	—	✓	Field decon 10:50
HRM 188.5 (Thompson Island Dam)	11:50	Type: Grab	24°C	Surface	—	✓	
Equipment blank: HRM 188.5	6:45	Type: Grab Kemmerer: —					
Ft. Edward Staff Gage (518) 747-9900	11:10						Level: 22.36

Additional Notes:

Sampled by: [signature]

Weather Data
Description: Sunny
Temperature: 80s
Wind: light
Precipitation: none

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE July 24, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	9:50	Type: Composite Kemmerer: 95	22°C	0-6'	—	✓	Bakers Falls: Dry
HRM 196.8 (West Shore)	10:15	Type: Grab	22°C	SURFACE	—	✓	Observed Dunn & Moore hovercraft downstream of sampling station heading to Rogers Island!
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	10:50E 11:10W	Type: Composite Kemmerer: 96A	22°C	0-6'	DUP	✓ ✓	New Kemmerer
HRM 188.5 (Thompson Island Dam)	11:30	Type: Grab	23°C	SURFACE	MS	✓ ✓	
Equipment blank: HRM 194.2	6:30	Type: Grab Kemmerer: 96A					New Kemmerer
Ft. Edward Staff Gage (518) 747-9900	10:40						Level: 21.82

Additional Notes:

Weather Data
Description: Overcast
Temperature: 70's
Wind: calm
Precipitation: none

Sampled by: [signature]

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE July 31, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	9:45	Type: Composite Kemmerer: 95	22°C	0-6'	DUP.	✓ ✓	Bakers Falls: water flowing over east and middle sections
HRM 196.8 (West Shore)	10:10	Type: Grab	22°C	Surface	—	✓	Dames & Moore Boat at plunge pool during sample collection
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	10:50E 11:10W	Type: Composite Kemmerer: 96A	22°C	0-6'	MS	✓	INCLUDES Sample for 24 hr TAT, Method 8080
HRM 188.5 (Thompson Island Dam)	11:25	Type: Grab	22°C	Surface	—	✓	INCLUDES Sample for 24 hr TAT, Method 8080
Equipment blank: HRM 197.0	630	Type: Grab Kemmerer: 95					
Ft. Edward Staff Gage (518) 747-9900	10:46						Level: 22.18

Additional Notes:

Sampled by: William Ayling

Weather Data
Description: Cloudy
Temperature: 70's F
Wind: Calm
Precipitation: light

321884

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE August 2, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	9:50	Type: Composite Kemmerer: 95	—	0-6'	—	✓	Bakers Falls: Dry wing dam pool downstream
HRM 196.8 (West Shore)	—	Type: Grab	—	—	—	—	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	10:25 10:40	Type: Composite Kemmerer: 96A	—	0-6'	—		
HRM 188.5 (Thompson Island Dam)	11:00	Type: Grab	—	Surface	—		
Equipment blank: HRM 194.2	630	Type: Grab Kemmerer: 96A					
Ft. Edward Staff Gage (518) 747-9900	938 10:56						Level: 22.01 22.00

Additional Notes:

Weather Data
Description: ______
Temperature: ______
Wind: ______
Precipitation: ______

Sampled by: W Ayling

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE August 5, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	9:35	Type: Composite Kemmerer: 95		0-6'	—		Bakers Falls: dry, wing dam pool dry
HRM 196.8 (West Shore)	~~10:00~~ ~~10:00~~	Type: Grab	—	—	—	—	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	10:10 ~~10:05~~ ~~10:00~~	Type: Composite Kemmerer: 96A		0-6'	—		
HRM 188.5 (Thompson Island Dam)	10:25	Type: Grab		SURFACE	—		
Equipment blank: HRM 197.0	6:20	Type: Grab Kemmerer: 95					
Ft. Edward Staff Gage (518) 747-9900	9:46						Level: 22.17

Additional Notes:

Weather Data
Description: hot - sunny
Temperature: 80°F
Wind: none
Precipitation: NONE

Sampled by: [signature]

321886

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GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE August 7, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	8:50	Type: Composite Kemmerer: 95	24°C	0-6'	MS	✓ ✓ ✓	Bakers Falls: east & middle sections water flowing over dam → water in ding dam pool
HRM 196.8 (West Shore)	9:10	Type: Grab	24°C	Surface	—	✓	wood chips & zooplankton observed in sample
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	9:35E 9:40W	Type: Composite Kemmerer: 96A	24°C	0-6'	—	✓ ✓	
HRM 188.5 (Thompson Island Dam)	10:10	Type: Grab	25°C	Surface	DUP	✓ ✓ ✓	
Equipment blank: HRM 194.2	5:30	Type: Grab Kemmerer: 96A					
Ft. Edward Staff Gage (518) 747-9900	8:26 9:26 10:22						Level: 21.64 ~ 4260 21.55 ~ 3970 22.38 ~ 7000

Additional Notes: Samples for 24hr TAT by Method 8080 also collected at HRM 197.0, HRM 194.2 and HRM 188.5

10:30 Bakers Falls = no water flowing over dam. Dames & Moore collected plunge pool sample @ 11:09

Sampled by: William [signature]

Weather Data
Description: hazy hot humid
Temperature: 80s
Wind: light breeze
Precipitation: none

321887

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE August 9, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	9:00	Type: Composite Kemmerer: 95	24°C	0-6'	—	✓	Bakers Falls: no water over dam
HRM 196.8 (West Shore)	—	Type: Grab	—	—	—	—	—
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	9:30E 9:40W	Type: Composite Kemmerer: 96A	24°C	0-6'	—	✓	
HRM 188.5 (Thompson Island Dam)	10:00	Type: Grab		SURFACE	—	✓	
Equipment blank: HRM 197.0	5:45	Type: Grab Kemmerer: 95					
Ft. Edward Staff Gage (518) 747-9900	8:45 10:05						Level: 22.03 5,700 21.78 4,700

Additional Notes:

Weather Data
Description: Rain, heavy at times
Temperature: 70s
Wind: calm
Precipitation: rain

Sampled by: W. Ayling

321888

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE August 13, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	9:40	Type: Composite Kemmerer: 95	23°C	0-6' Tot depth 8.6'	—	✓	Wingdam pool empty; dam free dump; Bakers Falls: no water flowing over dam
HRM 196.8 (West Shore)	—	Type: Grab	—	—	—	—	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	10:10E 10:20W	Type: Composite Kemmerer: 96A	23°C	0-6'	—	✓	Total depth east 7.7 west 6.5
HRM 188.5 (Thompson Island Dam)	10:40	Type: Grab	24°C	Surface	—	✓	28' total depth
Equipment blank: HRM 194.2	6:30	Type: Grab Kemmerer: 96A					
Ft. Edward Staff Gage (518) 747-9900	9:46 10:28						Level: 21.96 21.54

Additional Notes:

Weather Data
Description: Sunny & high clouds
Temperature: 80's F
Wind: light breeze
Precipitation: none

Sampled by: W. Ayling

321889

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE August 14, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	9:50	Type: Composite Kemmerer: 95	24°C	0-6'	—	✓	Total water depth 9.5' Bakers Falls: water flowing over dam
HRM 196.8 (West Shore)	10:10	Type: Grab	24°C	SURFACE	—	✓	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	11:20	Type: Composite Kemmerer: 96A	24°C	0-5'	DUP	✓	
HRM 188.5 (Thompson Island Dam)	11:40	Type: Grab	24°C	SURFACE	MS		
Equipment blank: HRM 197.0	6:35	Type: Grab Kemmerer: 95					
Ft. Edward Staff Gage (518) 747-9900	10:45						Level: 21.98

Additional Notes:

Weather Data
Description: Sunny
Temperature: 80s
Wind: light
Precipitation: none

Sampled by: W. Ayling

321890

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE August 20, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	10:50	Type: Composite Kemmerer: 95	24°C	0-6'	DUP	✓	flashboards being installed on east portion of dam. Bakers Falls: dam face damp, no flow over
HRM 196.8 (West Shore)	11:15	Type: Grab	24°C	Surface	MS	✓	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	11:50E 12:05W	Type: Composite Kemmerer: 96A	24°C	0-5'	—	✓	
HRM 188.5 (Thompson Island Dam)	12:20	Type: Grab	24°C	Surface	—	✓	
Equipment blank: HRM 194.2	7:00	Type: Grab Kemmerer: 96A					
Ft. Edward Staff Gage (518) 747-9900	10:25 12:12						Level: 21.84 21.80

Additional Notes:

Weather Data
Description: Sun & Clouds
Temperature: 80's F
Wind: light
Precipitation: none

Sampled by: William [signature]

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE AUGUST 22, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	9:45	Type: Composite Kemmerer: 95	24°C	0-6'	—	✓	flashboards middle to east shore Bakers Falls: dam face damp, no water flowing over
HRM 196.8 (West Shore)	—	Type: Grab	—	—	—	—	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	10:20E 10:30M	Type: Composite Kemmerer: 96A	24°C	0-5'	—	✓	
HRM 188.5 (Thompson Island Dam)	10:45	Type: Grab	25°C	Surface	—	✓	
Equipment blank: HRM 197.0	6:30	Type: Grab Kemmerer: 95					
Ft. Edward Staff Gage (518) 747-9900	10:12						Level: 21.71

Additional Notes:

Weather Data
Description: Sunny
Temperature: 80's F
Wind: light
Precipitation: none

Sampled by: W. Ayling

321892

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE August 28, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	10:00	Type: Composite Kemmerer: 95	24°C	0-6'	MS	✓	Flashboards mid-east portion of dam Bakers Falls: water flowing over west portion at 10:00 stopped by 11:30
HRM 196.8 (West Shore)	10:20	Type: Grab	24°C	SURFACE	DUP	✓	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	11:00	Type: Composite Kemmerer: 96M	24°C	0-5'	—	✓	
HRM 188.5 (Thompson Island Dam)	11:20	Type: Grab	24°C	SURFACE	—	✓	
Equipment blank: HRM 188.5	635	Type: Grab Kemmerer:					
Ft. Edward Staff Gage (518) 747-9900	10:35						Level: 22.01

Additional Notes:

Sampled by: W Ayling

Weather Data
Description: foggy/overcast then clearing by 11
Temperature: 80's F
Wind: light to calm
Precipitation: NONE

321893

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE Sep 4, 1996 - Rizzmo Routine

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	12:20	Type: Composite Kemmerer: 95	24°C	0-6'	—	Bakers Falls:
HRM 196.8 (West Shore)	12:45	Type: Grab	24°C	Surface	—	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	13:30E 13:50W	Type: Composite Kemmerer: 96A	24°C	0-5'	MS	
HRM 188.5 (Thompson Island Dam)	14:20	Type: Grab	24°C	Surface	DUP	
Equipment blank: HRM 197.0	11:25	Type: Grab Kemmerer: 95				Decon [HRM 194.2 & HRM 197.0 Equip at Rogers Is. staging area.
Ft. Edward Staff Gage (518) 747-9900	12:35 13:05					Level: 21.89 5137 21.85 4991

ETA 13:26

22:26

Additional Notes: See Round 3 Field Log Time of Travel Study

Weather Data
Temperature:
Wind: Calm
Precipitation:

Sampled by: W Ayling

March 8, 1996

321894

O'Brien & Gere Engineers, Inc.

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE September 6, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	9:45	Type: Composite Kemmerer: 95	24°C	0.6'	—	✓	Total water depth 9' Bakers Falls: clear free dump, no flow over
HRM 196.8 (West Shore)	—	Type: Grab	—	—	—	—	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	10:20	Type: Composite Kemmerer: 96A	24°C	0.5'	—	✓	Sample collected based on est. time of travel from Falls area and collection of plunge pool sample at 197.0
HRM 188.5 (Thompson Island Dam)	10:45	Type: Grab			—	✓	aquatic weeds & plant material floating on surface of water. phytoplankton(?) observed in sample
Equipment blank: HRM 194.2	6:15	Type: Grab Kemmerer: 96A					
Ft. Edward Staff Gage (518) 747-9900	8:25 9:30						Level: 21.52 21.58

Additional Notes: Calibrate sampler cables of HRM 197.0, HRM 194.2 bottles

Weather Data
Description: Hazy & warm
Temperature: 70-80's F
Wind: Calm
Precipitation: none

Sampled by: William Ayling

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE September 10, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	9:45	Type: Composite Kemmerer: 95	23°C	0-6'	DUP	✓	Suds observed at sampling area Bakers Falls: Water flowing over dam
HRM 196.8 (West Shore)	10:15	Type: Grab	23°C	SURF.	MS	✓	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	10:35E 11:00M	Type: Composite Kemmerer: 96A	23°C	0-5'	—	✓	Suds observed at Sampling area Collect sample simultaneous w/ USGS at east bridge.
HRM 188.5 (Thompson Island Dam)	11:15	Type: Grab	23°C	SURF	—	✓	
Equipment blank: HRM 194.2	6:25	Type: Grab Kemmerer: 96A					
Ft. Edward Staff Gage (518) 747-9900	10:26						Level: 21.91

Additional Notes: DEM reported that gates were open to hydro facility during sampling of plunge pool

Weather Data
Description: Overcast - Clearing
Temperature: 70's
Wind: Calm
Precipitation: None

Sampled by: W Ayling

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE September 13, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	10:25	Type: Composite Kemmerer: 95	22°C	0-6'	—	✓	Adirondack hydro dredging in front of facility intake Bakers Falls: dam face wet no flow over water flowing through two drains in dam
HRM 196.8 (West Shore)	—	Type: Grab	—	—	—	—	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	11:00E 11:15W	Type: Composite Kemmerer: 96A	22°C	0.5'	—	✓	
HRM 188.5 (Thompson Island Dam)	11:35	Type: Grab	21°C	Surf.	—	✓	
Equipment blank: HRM 197.0	6:25	Type: Grab Kemmerer: 95					
Ft. Edward Staff Gage (518) 747-9900	10:53						Level: 21.74

Additional Notes:

Weather Data
Description: Overcast
Temperature: low 70s
Wind: light
Precipitation: ~~began~~ Sprinkling @ ~11:10

Sampled by: William Ayling

April 22, 1996 321897
(dil/data/field_log)

O'Brien & Gere Engineers, Inc.

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE September 18, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	7:05	Type: Composite Kemmerer: 95	19°C	0-6'	MS	✓	Bakers Falls: no flow over dam, discharge from two outlets
	—	—	~~19°C~~	~~0-5~~	—	—	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	7:35 E 7:50 W	Type: Composite Kemmerer: 96A	19°C	0-5'	DUP		
HRM 188.5 (Thompson Island Dam)	8:15	Type: Grab	19°C	Surf.	—		
Equipment blank: HRM 197.0	5:00	Type: Grab Kemmerer: 95					
Ft. Edward Staff Gage (518) 747-9900	7:25						Level: 22.52

Additional Notes: 4:00 21.81 ~ 4,800
7:25 22.52 ~ 7,600

rained overnight

Weather Data
Description: Overcast
Temperature: 60's
Wind: Calm
Precipitation: None

Sampled by: W. Ayling

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE September 25, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	4:35	Type: Composite Kemmerer: 95	17°C	0-6'	—		Bakers Falls: water flowing over dam
	—	—	—	—	—	—	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	5:05 5:20	Type: Composite Kemmerer: 96A	17°C	0-5'	DUP		
HRM 188.5 (Thompson Island Dam)	5:50	Type: Grab	16°C	SURFACE	MS		
Equipment blank: HRM 188.5 9/24/96	20:15	Type: Grab Kemmerer: —					
Ft. Edward Staff Gage (518) 747-9900							Level:

Additional Notes:

2:35 21.82 4,900
3:45 21.73 4,600

Weather Data
Description: WET
Temperature:
Wind:
Precipitation:

Sampled by: W Ayling

GENERAL ELEC.RIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE October 2, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	7:20	Type: Composite Kemmerer: 45	17°C	0-6	—		Bakers Falls: Wet, no flow over
	—	—	—	—	—	—	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	7:55E 8:15W	Type: Composite Kemmerer: 96A	16°C	0-5'	MS		
HRM 188.5 (Thompson Island Dam)	8:30	Type: Grab	16°C	Surface	DUP		
Equipment blank: HRM 194.2	7:00	Type: Grab Kemmerer: 96A					
Ft. Edward Staff Gage (518) 747-9900	5:45 6:10						Level: 21.11 2680 21.29 3200

Additional Notes: Used DI water from store for EQBL

Weather Data
Description: overcast
Temperature: 60°F
Wind: Calm
Precipitation: none

Sampled by: W Ayling

GENERAL ELE_ RIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE October 9, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	9:45	Type: Composite Kemmerer: 95	6°C	0-6'	DUP	✓ ✓	Bakers Falls: On arrival water trickling over West portion, Stopped before sampling
—	—	—	—	—	—	—	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	11:10W 11:25E	Type: Composite Kemmerer: 96A	6°C	0-5'W 0-6'E	—	✓ ✓	
HRM 188.5 (Thompson Island Dam)	11:45	Type: Grab	6°C	Surface	MS	✓	
Equipment blank: HRM 197.0	9:25	Type: Grab Kemmerer: 95					
Ft. Edward Staff Gage (518) 747-9900	0922 1008 11:50						Level: 21.22 ~3000 cfs 21.04 ~2500 cfs 20.79 ~1900 cfs

Additional Notes:

Weather Data
Description: Sun & Clouds
Temperature: 50s-60s
Wind: light - N
Precipitation: none

Sampled by: W Ayling

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE October 16, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	10:15	Type: Composite Kemmerer: 95	See below	0-6'	–		Bakers Falls: face wet, water discharge through two outlets
—	—	—	—	—	—	—	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	11:05 W 11:25 E	Type: Composite Kemmerer: 96A		0-5' W 0-7' E	MS	✓	
HRM 188.5 (Thompson Island Dam)	11:50	Type: Grab			DUP	✓	
Equipment blank: HRM 194.2	0630	Type: Grab Kemmerer: 96A					
Ft. Edward Staff Gage (518) 747-9900	7:44 10:42						Level: 21.25 ~3100 21.31 ~3200

Additional Notes: Thermometer broke - readings erroneous, also for previous week

Weather Data
Description: Overcast then clearing
Temperature: 50's F to ~60's F
Wind: light breeze
Precipitation: none

Sampled by: W Ayling

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE October 23, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	8:50	Type: Composite Kemmerer: 95	10°C	0-6'	MS	✓	leaves on water surface of river Bakers Falls: water flowing over dam on arrival @ 815 stopped by 830, started again @ 930
—	—	—	—	—	—	—	—
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	10:25E 10:50W	Type: Composite Kemmerer: 96W	11°C	0-6'E 0-5'W	DUP	✓ ✓	
HRM 188.5 (Thompson Island Dam)	11:15	Type: Grab	11°C	SURFACE	—	✓	
Equipment blank: 10/22/96 HRM 188.5	17:00	Type: Grab Kemmerer: —					store DI water
Ft. Edward Staff Gage (518) 747-9900	~~21.32~~	0821					Level: 21.32 ~3300

Additional Notes: Lab thermometer used for temp data

Sampled by: William Ayling

Weather Data
Description: Overcast - foggy
Temperature: 6°C @ 0932
Wind: Calm
Precipitation: None

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE October 29, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	10:10	Type: Composite Kemmerer: 95A	11°C	0-6'	MS	✓	Bakers Falls: dam face wet, occasional splashing over trickle
—	—	—	—	—	—	—	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	10:25W 10:45E	Type: Composite Kemmerer: 96A	11°C	0-5' 0-6'	—	✓	
HRM 188.5 (Thompson Island Dam)	11:30	Type: Grab	11°C	SURFACE	DUP	✓	Archive collected as separate aliquot
Equipment blank: HRM 10/28/96	17:00	Type: Grab Kemmerer: 95,96A,96B					Includes Kemmerer samplers and stainless steel buckets
Ft. Edward Staff Gage (518) 747-9900	10:50						Level: 20.94 ~ 2200

Additional Notes:

Weather Data
Description: Sunny
Temperature: 10°C @ 10:15
Wind: North
Precipitation: None

Sampled by: W. Ayling

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE NOVEMBER 6, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	09:30	Type: Composite Kemmerer: 95	7.5°C	0-6'	MS	✓ ✓	Bakers Falls: no flow over dam, face wet
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	11:10W 11:25E	Type: Composite Kemmerer: 96A	9°C	0.5'W 0.6'E	Dup	✓ ✓	one algae strand in original sample two strands of algae in duplicate sample
HRM 188.5 (Thompson Island Dam)	11:50	Type: Grab	9°C	Surface	—	✓	
Equipment blank: HRM 194.2 11/5/96	17:00	Type: Grab Kemmerer: 96A					
Ft. Edward Staff Gage (518) 747-9900	0915 1110						Level: 20.76 ~ 1800 cfs 21.15 ~ 2800 cfs

Additional Notes:

Weather Data
Description: Overcast
Temperature: 10°C
Wind: Calm
Precipitation: NONE

Sampled by: [signature]

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE November 14, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	09:10	Type: Composite Kemmerer: 95	3°C	0-6'	—	✓	Total water depth ~10' Bakers Falls: water flowing over dam
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	09:45E 10:05W	Type: Composite Kemmerer: 96A	4°C	0-6'E 0-6W	DUP	✓ ✓	Total Depth east ~10' West ~10'
HRM 188.5 (Thompson Island Dam)	10:30	Type: Grab	5°C	Surface	MS	✓ ✓	
Equipment blank: HRM 194.2	05:30	Type: Grab Kemmerer: 96A					
Ft. Edward Staff Gage (518) 747-9900	08:30 09:55						Level: 22.11 22.58

Additional Notes: no plunge pool sample due to high flows

Sampled by: William Ayling

Weather Data
Description: Sunny
Temperature: 20°F 27°F @ 9:30 (bank temp)
Wind: Calm
Precipitation: None

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE NOVEMBER 20, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	10:00	Type: Composite Kemmerer: 95	6°C	0-6'	—	✓	AHDC dredging at hydrofacility intake area Bakers Falls: Water flowing over dam
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	10:25W 10:40E	Type: Composite Kemmerer: 96A	5°C	0-5'W 0-6'E	MS	✓ ✓	Sampled west channel simultaneous w/ USGS
HRM 188.5 (Thompson Island Dam)	11:20	Type: Grab	5°C	Surface	DUP	✓ ✓	
Equipment blank: HRM 1970	6:00	Type: Grab Kemmerer: 95					
Ft. Edward Staff Gage (518) 747-9900	10:30						Level: 22.52

Additional Notes:

Weather Data
Description: mostly overcast
Temperature: 30s°F
Wind: Calm
Precipitation: NONE

Sampled by: W. Ayling

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE November 27, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	9:35	Type: Composite Kemmerer: 95	2°C	0-6'	MS	✓	Bakers Falls: water flowing over dam (mid-east)
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	10:20W 10:50E	Type: Composite Kemmerer: 96A	2°C	0-5'W 0-6'E	DUP		
HRM 188.5 (Thompson Island Dam)	11:50	Type: Grab Kemmerer 96B	2.5°C	Surf.	—		
Equipment blank: HRM 194.2	5:45	Type: Grab Kemmerer: 96A					
Ft. Edward Staff Gage (518) 747-9900	12:06						Level: 22.23

Additional Notes:

Weather Data
Description: Sunny
Temperature: 20's F
Wind: Calm → N Breeze
Precipitation: None

Sampled by: W. Ayling

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE December 4, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	10:10	Type: Composite Kemmerer: 95	43F	0-6'	—	✓	High flow - water flowing over dam including portion of flashboards Bakers Falls:
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	1135	Type: Composite Kemmerer: 96A	44.1F	0-6'	DUP		
HRM 188.5 (Thompson Island Dam)	12:00	Type: Grab Kemmerer 96B	43°F	Surface	MS		
Equipment blank: HRM 188.5	06:00	Type: Grab Kemmerer: ~~96B~~ NONE					old stainless steel bucket used (small)
Ft. Edward Staff Gage (518) 747-9900	09:5						Level: 23.76 ~ 13,400 cfs

Additional Notes:

Weather Data
Description: Overcast, light drizzle
Temperature: 3°C
Wind: Calm
Precipitation: rain

Sampled by: W. Ayling

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE December 11, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	10:45	Type: Composite Kemmerer: 95	4.5°C	0-6	—	✓	Bakers Falls: full wet
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	11:35 11:50	Type: Composite Kemmerer: 96A	4.2°C	0-6' 0-5'	MS	✓	
HRM 188.5 (Thompson Island Dam)	12:25	Type: Grab	4.1°C	Surface	DUP	—	
Equipment blank: HRM 197.0	7:45	Type: Grab Kemmerer: 95					
Ft. Edward Staff Gage (518) 747-9900	12:18						Level: 21.83

Additional Notes:

Weather Data
Description: Overcast
Temperature: 40°F @ 1130
Wind: Calm
Precipitation: None

Sampled by: W. Ayling

321910

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE December 18, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	10:10	Type: Composite Kemmerer: 95	4.7°C	0-6'	MS		Bakers Falls: water flowing over dam
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	11:05W	Type: Composite Kemmerer: 96A	4.9°C	0-6' E 0-5 W	DUP		
HRM 188.5 (Thompson Island Dam)	11:20	Type: Grab	4.3°C	Surface	—		
Equipment blank: HRM 194.2	0645	Type: Grab Kemmerer: 96A					
Ft. Edward Staff Gage (518) 747-9900	12:55						Level: 23.00

Additional Notes:

Sampled by: W Ayling

321911

Weather Data
Description: Overcast
Temperature: ~40°F
Wind: Calm
Precipitation: none

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE December 23, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	0900	Type: Composite Kemmerer: 95	1.5°C	0-6'	—		Bakers Falls: Water flowing over mid & west portion of dam
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	0922E 0950W	Type: Composite Kemmerer: 96A	1.4°C	0-6' 0-6'	MS		
HRM 188.5 (Thompson Island Dam)	1035	Type: Grab	1.4°C (1.2)	Surface	DUP		
Equipment blank: HRM 188.5	10:25	Type: Grab Kemmerer: —					
Ft. Edward Staff Gage (518) 747-9900	0852						Level: 22.88

Additional Notes:

Weather Data
Description: Overcast
Temperature: ~32
Wind: Calm
Precipitation: light mist/snow mix

Sampled by: W Ayling

321912

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE December 30, 1996

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Inspect Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	0915	Type: Composite Kemmerer: 95	1.2°C	0-6'	MS	✓	Bakers Falls: Intermittent flow over dam
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	10:15W 10:45E	Type: Composite Kemmerer: 96A	0.7°C	0-5'W 0-6'E	DUP	✓	
HRM 188.5 (Thompson Island Dam)	1130	Type: Grab	1.7°C	Surface	–	✓	
Equipment blank: HRM 194.2		Type: Grab Kemmerer: 96A					
Ft. Edward Staff Gage (518) 747-9900	0850						Level: 22.71

Additional Notes:

Weather Data
Description: Sunny
Temperature: 30's F
Wind: Light N
Precipitation: None

Sampled by: [illegible signature]

321913

Field logs
Hydroelectric facility monitoring
September 4, 1996

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE Sep. 4, 1996, Round 1

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Comments	
HRM 197.0 (County Rt. 27 Bridge)	820	Type: Composite Kemmerer: 95	23°C	0-6'	MS	Bakers Falls: clear free clamp, no flow over	820
HRM 196.8 (West Shore)	—	Type: Grab	—	—	—		
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	9:15 E ~~9:45 W~~ 9:25 W	Type: Composite Kemmerer: 96A	23°C	0-5'	—		9:15
HRM 188.5 (Thompson Island Dam)	17:10	Type: Grab			—	6,000 5,750 5,500	1644 (4:44) 1735 (5:35)
Equipment blank: HRM 194.2	4:30	Type: Grab Kemmerer: 96A					
Ft. Edward Staff Gage (518) 747-9900	8:15 735 8:51					Level: 22.09 ≈ 5879 22.08 ≈ 5,842 22.05 ≈ 5732	

Additional Notes:

9:45 slight trickle over portions of dam (22.05)
16:15 21.99 ~5,512
15:00 light rain begins; 1630 rain ends
17:00 21.63 4,220

Weather Data
Temperature: 22°C @ 1:56
Wind: Calm
Precipitation: None (see notes)

Sampled by: W Ayling

321915

March 8, 1996
(:djb/data/field_log)

O'Brien & Gere Engineers, Inc.

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE Sep 4, 1996, Round 2

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Comments	
HRM 197.0 (County Rt. 27 Bridge)	10:20	Type: Composite Kemmerer: 95	23°C	0-6	—	Bakers Falls: (Round 3) 12:10 - no flow over, drying	
HRM 196.8 (West Shore)	—	Type: Grab	—	—	—		ETA
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	11:35 E 11:55 W	Type: Composite Kemmerer: 96A	24°C	0-5	DUP		11:15 11:26
HRM 188.5 (Thompson Island Dam)	20:30	Type: Grab	23°C	Surface	—	Time of travel estimated based on ave of hourly monitoring	18:44 20:20 (1835)
Equipment blank: HRM 194.2	10:00	Type: Grab Kemmerer: 96A				Field decon of equip at Adirondack hydro lot next to dam	
Ft. Edward Staff Gage (518) 747-9900	10:14 10:35 10:50					22.06 5969 21.86 ~ 5020 Level: 21.86 11:05 21.95 ~ 5360 11:29 ~ same	

Additional Notes: Adirondack hydro to begin cleaning racks at 10am will take approximately 1/2 hour at our request to obtain adequate parcel size to track downstream; usually takes ~15-20 min. Noticeable flow increase at ~ 10:10 w/ flow over dam, dam reported gates open at ~ 10:15

Weather Data hazy & clouds
Temperature: 29°C @ 10pm
Wind: calm
Precipitation: none

Sampled by: [signature]

321916

March 8, 1996
(:djb/data/field_log)

O'Brien & Gere Engineers, Inc.

GENERAL ELECTRIC COMPANY
1996 POST-CONSTRUCTION REMNANT DEPOSIT MONITORING PROGRAM
(Project 612.204)

FIELD LOG

SAMPLING DATE SEP 4, 1996, ROUND 3

Station	Time	Sample Data	Water Temp.	Sample Depths	QA/QC Sample	Comments
HRM 197.0 (County Rt. 27 Bridge)	12:20	Type: Composite Kemmerer: 95	24°	0.6'	—	12:35 water flowing over Bakers Falls: 12:10 no flow, drying
HRM 196.8 (West Shore)	—	Type: Grab	—	—	—	
HRM 194.2 (Rt. 197 Bridges Comp. - East and Main Channel)	13:30 E 13:50 W	Type: Composite Kemmerer: 96A		0.5'	—	
HRM 188.5 (Thompson Island Dam)	~~22:30~~ (10:30 pm)	Type: Grab		Surface	—	
Equipment blank: HRM ~~197.0~~	—	Type: Grab Kemmerer: ~~95~~				
Ft. Edward Staff Gage (518) 747-9900						Level:

Additional Notes: See PCRDMP 9/4 Field Log

Sampled by: W Ayling

Weather Data
Temperature:
Wind:
Precipitation:

321917

March 8, 1996
(:djb/data/field_log)

O'Brien & Gere Engineers, Inc.

Field logs
FED transect sampling
September 17, 1996

GENERAL ELECTRIC COMPANY
HUDSON RIVER PROJECT
1996 WATER COLUMN MONITORING STUDY

HRM 194.2W Field Log

Station I.D.	Date	Time	Sample Type: PCB aliquot	Sample Type: TSS aliquot	Approximate Water Depth	Water Velocity (ft^2/sec)	Comments
HRM 194.2W-1	9/17/96	11:35	✓	✓	0-5'		
HRM 194.2W-2	↓	12:20	✓	✓	↓		
HRM 194.2W-3		13:20	✓	✓			
HRM 194.2W-4		14:20	✓	✓			95 Kemmerer used
HRM 194.2W-5		15:30					
HRM 194.2W-6		16:30					
~~HRM 194.2W-6MS~~		~~16:30~~					
HRM 194.2W-7		17:30					
HRM 194.2W-8	↓	18:30			↓		
194.2W-5MS		15:30					
HRM 194.2W EQBL							

Water temperature: 20°C
Weather data:
Air temperature ______
Wind: ______
Precipitation: ______

Notes: 15:25 26.91

321919

Sampled by:
Team Leader: [signature]
Crew #1: ______
Crew #2: ______

O'Brien & Gere Engineers
(WAA:djb/52:612.205)

FILE: 612.205

GENERAL ELECTRIC COMPANY
HUDSON RIVER PROJECT
1996 WATER COLUMN MONITORING STUDY

HRM 194.2E Field Log

Station I.D.	Date	Time	Sample Type: PCB aliquot	Sample Type: TSS aliquot	Approximate Water Depth	Water Velocity (ft²/sec)	Comments
HRM 194.2E-1	9/17/96	11:15	✓	✓	0-5'		
HRM 194.2E-2	↓	12:35	✓	✓	↓		
HRM 194.2E-3		13:40	✓	✓			0-2, 3-5'
HRM 194.2E-4		14:45	✓	✓			
HRM 194.2E-4 dup		14:45	✓	✓			COC: dup HR-2
HRM 194.2E-5		15:50					
HRM 194.2E-6		16:45					
HRM 194.2E-7		17:45					
HRM 194.2E-8	↓	18:40			↓		
HRM 194.2E EQBL							

11:10 2150

Water temperature: 20°C
Weather data:
Air temperature
Wind:
Precipitation:

Notes:

321920

Sampled by:
Team Leader: W Aziling
Crew #1:
Crew #2:

O'Brien & Gere Engineers
(WAA:djb/52:612.205)

GENERAL ELECTRIC COMPANY
HUDSON RIVER PROJECT
1996 WATER COLUMN MONITORING STUDY

HRM 197.0 Field Log

Station I.D.	Date	Time	Sample Type		Approximate Water Depth	Water Velocity (ft²/sec)	Comments
			PCB aliquot	TSS aliquot			
HRM 197.0-1	9/17/96	10:15	✓	✓	0-6'	—	no water flowing over dam water discharging from two dam outlets
~~HRM 197.0-1~~		~~12:08~~ 12:00 WM	✓	✓	0-6'	—	
HRM 197.0-2		12:00 WM	✓	✓	0-6	—	occassional trickle over dam
HRM 197.0-3		13:00	✓	✓			
HRM 197.0-4		13:55	✓	✓			Showers, no flow over dam
HRM 197.0-5		15:00					" "
HRM 197.0-6		1640					
HRM 197.0-7		17:05					
HRM 197.0-8		18:05					
HRM 197.0 EQBL							

10:33 21.09 2600

Water temperature: 20°C
Weather data:
Air temperature ______
Wind: ______
Precipitation: ______

Notes:

321921

Sampled by:
Team Leader: W Ayling
Crew #1: ______
Crew #2: ______

O'Brien & Gere Engineers
(WAA:djb/52:612.198)

FILE: 612.205

GENERAL ELECTRIC COMPANY
HUDSON RIVER PROJECT - RIVER MONITORING TEST
1996 WATER COLUMN MONITORING STUDY

Transect FED Field Log: Round 1

Station I.D.	Date	Time	Sample Type: PCB aliquot	Sample Type: TSS aliquot	Approximate Water Depth	Water Velocity (ft^2/sec)	Comments
(near west shore) FED1-1	9/17/96	10:30	✓	✓	1.35'	0.52	
FED1-1MS		10:30	✓	✓	~~2.2~~ 1.35	~~1.05~~ 0.52	
FED2-1		1041	✓	✓	2.20	~~1.70~~ 1.05	
FED3-1		1051	✓	✓	1.70'	~~1.70~~ 0.65	
FED4-1		1056.	✓	✓	2.05	0.80	
FED5-1		1059	✓	✓	2.02	0.82	
(near east shore) FED6-1		11 03	✓	✓	1.90	0.92	
FED6-1dup		11 03	✓	✓	1.90	0.92	COC: HRdup1
FED EQBL	9/17/96	5:30	✓	—	—	—	WAA

ater temperature: ______

eather data:

ir temperature 70°F ±

Vind: CALM

Precipitation: LT. MIST, LT RAIN

Notes:

321922

Sampled by:

Team Leader: CHRIS BA'BLIN

Crew #1: DICK RYBINSKI

Crew #2: ______

O'Brien & Gere Engineers
(WAA:djb/52:612.198)

General Electric Company
Hudson River Project
1996 Water Column Monitoring Study

File: 612.205

Transect FED Field Log: Round 2

Station I.D.	Date	Time	Sample Type: PCB aliquot	Sample Type: TSS aliquot	Approximate Water Depth	Water Velocity (ft³/sec)	Comments
(near west shore) FED1-2	9/17/96	1130	✓	✓	1.09	0.85	
FED1-2MS	↓	1130	✓	✓	1.09	0.85	
FED2-2		1135	✓	✓	2.06	1.33	
FED3-2		1138	✓	✓	1.52	0.93	
FED4-2		1142	✓	✓	1.94	0.9	
FED5-2		1149	✓	✓	2.00	1.19	
(near east shore) FED6-2		1152	✓	✓	1.90	1.08	
FED6-2 dup		1152	✓	✓	1.90	1.08	COC: HRdup1
TRAP BET FED #1 & #2		11 32				1.20	
TRAP BET #4 & 5							
		1145			1.15	1.19	MIDDLE SAMPLER @ T. WATER TOP SAMPLER OUT

321923

Water temperature: ______
Weather data: 70 °F
Air temperature ______
Wind: ~~LT.~~ LT. BREEZE
Precipitation: LT. RAIN

Notes:
at 197 Bridge (East)
flow = 0.87 ft/sec
depth = 6.6 ft.

at filtering device near East Bridge
flow = 0.7 ft/sec
depth = 6.7 ft.

Sampled by:
Team Leader: CHRIS BABLIN
Crew #1: DICK RYBINSKI
Crew #2: ______

O'Brien & Gere Engineers
(WAA:djb/52:612.196

GENERAL ELECTRIC COMPANY
HUDSON RIVER PROJECT
1996 WATER COLUMN MONITORING STUDY

Transect FED Field Log: Round 3

Station I.D.	Date	Time	Sample Type: PCB aliquot	Sample Type: TSS aliquot	Approximate Water Depth	Water Velocity (ft^2/sec)	Comments
(near west shore) FED1-3	9/17/96	12:30	✓	✓	1.26	1.55	
FED1-3MS	↓	12:30	✓	✓	1.26	1.55	
FED2-3		12:34	✓	✓	2.22	2.58	
FED3-3		12 38	✓	✓	1.75	2.13	
FED4-3		12 43	✓	–	2.10	1.93	
FED5-3		1248	✓	✓	2.13	1.75	
(near east shore) FED6-3		1253	✓	–	2.10	1.48	
FED6-3 dup	↓	1253	–	✓	2.10	1.48	COC: HRdup1
TRAP BOT #2 & #3		1232			2.38	2.30	
TRAP Bot. #4 & #5		12 46			1.30	1.88	BOT. TOP TRAP @ J. H2O

321924

Water temperature: ____________

Weather data:

Air temperature: 70°F

Wind: LT. BREEZE (NE)

Precipitation: LT RAIN

Notes:

at East Bridge
flow = 0.87 ft/sec
depth = 6.6ft. @ 1[illegible]

at trap near East Bridge
flow = 0.7
depth = 6.7ft @ 12:[illegible]

Sampled by:
Team Leader: CHRIS BABLIN
Crew #1: DICK RYBINSKI
Crew #2: ____________

O'Brien & Gere Engineers
(WAA:djb/52:612.198)

General Electric Company
Hudson River Project
1996 Water Column Monitoring Study

File: 612.205

Transect FED Field Log: Round 4

Station I.D.	Date	Time	Sample Type		Approximate Water Depth	Water Velocity (ft³/sec)	Comments
			PCB aliquot	TSS aliquot			
(near west shore) FED1-4	9/17/96	1330	✓	✓	1.06	0.84	
FED1-4MS	↓	1330	✓	✓	1.06	0.84	
FED2-4		1334	✓	✓	2.00	1.65	
FED3-4		1338	✓	✓	1.45	1.01	
FED4-4		1343	✓	✓	1.86	0.94	
FED5-4		1348	✓	✓	1.86	1.46	
(near east shore) FED6-4		1353	✓	✓	1.90	0.96	
FED6-4 dup		1353	✓	✓	1.90	0.96	COC: HRdup1
TRAP Bet #1 & 2		1333			2.35	1.47	
Trap Bet #4 & #5		1347			1.05	1.30	

at Rt 197 Bridge (13:20) West | at Trap near West Bridge)

Water temperature: ______
Weather data:
Air temperature ______
Wind: ______
Precipitation: ______

Notes:
depth = 5.8 ft. | depth = 7.5
Vel. = 0.84 ft/? | Vel. = 0.4?

East Bridge (14:00) | East Trap (1?:??)
depth = ?.9 ft

Sampled by:
Team Leader: CHRIS BABLIN
Crew #1: DICK RYBINSKI
Crew #2: ______

O'Brien & Gere Engineers
(WAA:djb/52:612.198)

321925

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HUDSON RIVER PROJECT
1996 WATER COLUMN MONITORING STUDY

FILE: 612.205

Transect FED Field Log: Round 5

Station I.D.	Date	Time	Sample Type: PCB aliquot	Sample Type: TSS aliquot	Approximate Water Depth	Water Velocity (ft²/sec)	Comments
(near west shore) FED1-5	9/17/96	1430	✓	✓	1.50	1.96	
FED1-5MS	↓	1430	✓	✓	1.50	1.96	
FED2-5		14:35	✓	✓	3.30	3.40	
FED3-5		14:39	✓	✓	1.80	2.25	
FED4-5		14:44	✓	✓	.10	2.13	
FED5-5		14:50	✓	✓	2.10	1.70	
(near east shore) FED6-5		1455	✓	✓	2.00	1.61	
FED6-5 dup	↓	1455	✓	✓	2.00	1.61	COC: HRdup1
Trap bridge					2.80	3.03	
Trap lures					1.27	2.26	

Water temperature: ______
Weather data:
Air temperature 70°F ±
Wind: LT. BREEZE
Precipitation: MOD RAIN

Notes: [illegible]

Sampled by:
Team Leader: CHRIS BAGLIN
Crew #1: DICK RYBINSKI
Crew #2: ______

O'Brien & Gere Engineers
(WAA:djb/52:612.198)

321926

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HUDSON RIVER PROJECT
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Transect FED Field Log: Round 6

Station I.D.	Date	Time	Sample Type: PCB aliquot	Sample Type: TSS aliquot	Approximate Water Depth	Water Velocity (ft^2/sec)	Comments
(near west shore) FED1-6	9/17/96	1530	—	—	1.04	0.77	
FED1-6MS	9/17/96	1530	—	—	1.04	0.77	
FED2-6		1534	—	—	~~2.25~~ 2.04	~~0.95~~ 1.25	
FED3-6		1537	—	—	1.38	0.62	
FED4-6		1544	—	—	1.75	0.60	
FED5-6		15:49	✓	✓	1.74	0.91	
(near east shore) FED6-6		1554	—	—	1.66		
FED6-6 dup		1554	—		1.66		COC: HRdup1
TRAP BET #1	E2	1532					
TRAP #25		15:49			2.25	0.95	
					0.43	0.80	

321927

Water temperature: ______
Weather data:
Air temperature ______
Wind: ______
Precipitation: ______

Notes:

Sampled by:
Team Leader: CHRIS BABLIN
Crew #1: DICK RYBINSKI
Crew #2: ______

O'Brien & Gere Engineers
(WAA:djb/52:612.198)

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HUDSON RIVER PROJECT
1996 WATER COLUMN MONITORING STUDY

Transect FED Field Log: Round 7

Station I.D.	Date	Time	Sample Type: PCB aliquot	Sample Type: TSS aliquot	Approximate Water Depth	Water Velocity (ft²/sec)	Comments
(near west shore) FED1-7	9/17/96	1633	✓	✓	0.78	0.32	
FED1-7MS	↓	1633	✓	✓	0.78	0.32	
FED2-7		1640	✓	✓	1.78	0.41	
FED3-7		1643	✓	✓	1.10	0.34	
FED4-7		1646	✓	✓	1.51	0.26	
FED5-7		1651	✓	✓	1.52	0.35	
(near east shore) FED6-7		1655	✓	✓	1.45	0.23	
FED6-7	↓	1655	✓	✓	1.45	0.23	COC: HRdup1
Trap #2		1636			2.01	0.33	1.90' centerline of middle screen
							(top screen out of water)
Trap #4.5		1649	1.08' center	line middle screen	0.56	0.48	flow = 0.53 ft/sec

321928

Water temperature: ______
Weather data:
Air temperature ______
Wind: ______
Precipitation: [illegible]

Notes: RT 197 bridge (east)
flow - 0.5 ft/sec
depth - 6.6 ft

at trap (first bridge)
flow = 0.35 ft/sec

Sampled by:
Team Leader: CHRIS BABLIN
Crew #1: DICK RYBINSKI
Crew #2: ______

O'Brien & Gere Engineers
(WAA:djb/52:612.198)

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HUDSON RIVER PROJECT
1996 WATER COLUMN MONITORING STUDY

FILE: 612.205

Transect FED Field Log: Round 8

Station I.D.	Date	Time	Sample Type		Approximate Water Depth	Water Velocity (ft^3/sec)	Comments
			PCB aliquot	TSS aliquot			
(near west shore) FED1-8	9/17/96	1730	✓	✓	0.90	0.98	
FED1-8MS	↓	1730	✓	✓	0.90	0.98	
FED2-8		1734	✓	✓	2.55	2.37	
FED3-8		1737	✓	✓	1.38	1.71	
FED4-8		1740	✓	✓	1.85	1.70	
FED5-8		1743	✓	✓	1.95	2.10	
(near east shore) FED6-8		1746	✓	✓	1.90	1.93	
FED6-8 dup	↓	1746	✓	✓	1.90	1.93	COC: HRdup1
Trap@1 & 2		17:32			2.30	1.74	
TRAP 5 & 6		~~1742~~			1.00	1.84	

Water temperature: ______
Weather data:
Air temperature ______
Wind: ______
Precipitation: ______

Notes: West Bridge @17:56
flow = 1 ft/sec
depth = 6.4 ft
West Bridge trap depth = 7.~~4~~4 flow = 0.7

Sampled by:
Team Leader: CHRIS BABLIN
Crew #1: Dick RYBINSKI
Crew #2: ______

O'Brien & Gere Engineers
(WAA:djb/52:612.198)

321929

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HUDSON RIVER PROJECT - RIVER MONITORING TEST
1996 WATER COLUMN MONITORING STUDY

FILE: 612.205

Transect FED Field Log: Round 1

Station I.D.	Date	Time	Sample Type: PCB aliquot	Sample Type: TSS aliquot	Approximate Water Depth	Water Velocity (ft³/sec)	Comments
(near west shore) FED1-1	9/17/96	10:30	✓	✓	1.35'	0.52	
FED1-1MS	↓	10:30	✓	✓	~~2.2~~ 1.35	~~1.05~~ 0.52	
FED2-1	↓	1041	✓	✓	2.20	~~1.70~~ 1.05	
FED3-1	↓	1051	✓	✓	1.70'	~~1.70~~ 0.65	
FED4-1	↓	1056	✓	✓	2.05	0.80	
FED5-1	↓	1059	✓	✓	2.02	0.82	
(near east shore) FED6-1	↓	1103	✓	✓	1.90	0.92	
FED6-1dup	↓	1103	✓	✓	1.90	0.92	COC: HRdup1
FED EQBL	9/17/96	5:30	✓	—	—	—	WAA

Water temperature: ________
Weather data:
Air temperature 70°F ±
Wind: CALM
Precipitation: LT. MIST, LT RAIN

Notes:

Sampled by:
Team Leader: CHRIS BA'BLIN
Crew #1: DICK RYBINSKI
Crew #2: ________

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Hudson River Project
1996 Water Column Monitoring Study

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Transect FED Field Log: Round 2

Station I.D.	Date	Time	Sample Type: PCB aliquot	Sample Type: TSS aliquot	Approximate Water Depth	Water Velocity (ft²/sec)	Comments
(near west shore) FED1-2	9/17/96	1130	✓	✓	1.09	0.85	
FED1-2MS	↓	1130	✓	✓	1.09	0.85	
FED2-2		1135	✓	✓	2.06	1.33	
FED3-2		1138	✓	✓	1.52	0.93	
FED4-2		1142	✓	✓	1.94	0.91	
FED5-2		1149	✓	✓	2.00	1.19	
(near east shore) FED6-2		1152	✓	✓	1.90	1.08	
FED6-2 dup	↓	1152	✓	✓	1.90	1.08	COC: HRdup1
TRAP BET FED #1 & #2		11.32				1.20	
TRAP BET #4 & 5							
		1145			1.15	1.19	MIDDLE SAMPLER @ T. WATER TOP SAMPLER OUT

321931

Water temperature: ______
Weather data:
Air temperature: 70 °F
Wind: ~~LT.~~ LT. BREEZE
Precipitation: [illegible] RAIN

Notes:
at 197 Bridge (last)
flow - 0.87 ft/sec
depth = 6.6 ft.

at [illegible] bridge
flow = 0.7 ft/sec
depth [illegible]

Sampled by:
Team Leader: CHRIS BABLIN
Crew #1: DICK RYBINSKI
Crew #2: ______

O'Brien & Gere Engineers
(WAA:djb/52:612.198)

General Electric Company
Hudson River Project
1996 Water Column Monitoring Study

File: 612.205

Transect FED Field Log: Round 3

Station I.D.	Date	Time	Sample Type: PCB aliquot	Sample Type: TSS aliquot	Approximate Water Depth	Water Velocity (ft^2/sec)	Comments
(near west shore) FED1-3	9/17/96	12:30	✓	✓	1.26	1.55	
FED1-3MS	↓	12:30	✓	✓	1.26	1.55	
FED2-3	↓	12:34	✓	✓	2.22	2.58	
FED3-3	↓	12 38	✓	✓	1.75	2.13	
FED4-3	↓	12 43	✓	–	2.10	1.93	
FED5-3	↓	1248	✓	✓	2.13	1.75	
(near east shore) FED6-3	↓	1253	✓	✓	2.10	1.48	
FED6-3 dup	↓	1253		✓	2.10	1.48	COC: HRdup1
TRAP BET #2 & #3		1232			2.30	2.30	
TRAP Bet. #4 & #5		1246			1.30	1.88	BOT. TOP TRAP [illegible]

321932

Water temperature: ________

Weather data:

Air temperature 70°F

Wind: LT. BREEZE (NE)

Precipitation: LT RAIN

Notes: at East Bridge
flow = 0.87 ft/sec
depth = 6.6ft.

[illegible] East Bridge
[illegible] = 0.7
depth [illegible]

Sampled by:
Team Leader: CHRIS BABLIN
Crew #1: DICK RYBINSKI
Crew #2: ________

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(WAA:djb/52:612.198)

④

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1996 WATER COLUMN MONITORING STUDY

FILE: 612.205

Transect FED Field Log: Round 4

Station I.D.	Date	Time	Sample Type PCB aliquot	Sample Type TSS aliquot	Approximate Water Depth	Water Velocity (ft³/sec)	Comments
(near west shore) FED1-4	9/17/96	1330	✓	✓	1.06	0.84	
FED1-4MS	↓	1330	✓	[illegible]	1.06	0.84	
FED2-4		1334	[illegible]	✓	[illegible].00	1.65	
FED3-4		1338	[illegible]	[illegible]	1.45	1.01	
FED4-4		1343	✓	✓	1.86	0.94	
FED5-4		1348	✓	✓	[illegible]	1.1[illegible]	
(near east shore) FED6-4		1353	✓	✓	1.90	0.96	
FED6-4 dup		1353	✓	✓	1.90	0.96	COC: HRdup1
TRAP Bet #1 [illegible]		1333			2.35	1.47	
trap bet #4 & #5		134[illegible]			1.[illegible]	[illegible]	

Water temperature: ______________
Weather data:
Air temperature ______________
Wind: ______________
Precipitation: ______________

Notes: at RI 197 Bridge (13:20) west
depth = 5.8 ft.
Vel. = 0.5[illegible]

at trap near [illegible]
depth [illegible]
vel. [illegible]

Sampled by:
Team Leader: CHRIS BABLIN
Crew #1: DICK RYBINSKI
Crew #2: ______________

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321933

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1996 WATER COLUMN MONITORING STUDY

Transect FED Field Log: Round 5

Station I.D.	Date	Time	Sample Type: PCB aliquot	Sample Type: TSS aliquot	Approximate Water Depth	Water Velocity (ft^2/sec)	Comments
(near west shore) FED1-5	9/17/96	1430			1.50	1.96	
FED1-5MS		1430			1.50	1.96	
FED2-5		14:35			3.30	3.40	
FED3-5		[illegible]			1.80	[illegible]	
FED4-5		14:14			.10	2.13	
FED5-5		[illegible]			[illegible]	[illegible]	
(near east shore) FED6-5		[illegible]455			[illegible]	[illegible]	
FED6-5 dup		[illegible]			[illegible]	[illegible]	COC: HRdup1
[illegible]					[illegible]	[illegible].13	
[illegible]					[illegible]	[illegible]	

Water temperature: ____________

Weather data: [illegible]

Air temperature ____________

Wind: [illegible]

Precipitation: MOD RAIN

Notes:

Sampled by:

Team Leader: CHRIS BAALIN

Crew #1: Dick RYBINSKI

Crew #2: ____________

O'Brien & Gere Engineers

(WAA:djb/52:612.198)

321934

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HUDSON RIVER PROJECT
1996 WATER COLUMN MONITORING STUDY

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Transect FED Field Log: Round 6

Station I.D.	Date	Time	Sample Type: PCB aliquot	Sample Type: TSS aliquot	Approximate Water Depth	Water Velocity (ft²/sec)	Comments
(near west shore) FED1-6	9/~~16~~/96	1530	✓	✓	1.04	0.77	
FED1-6MS	9/17/96	1530	✓	✓	1.04	0.77	
FED2-6	↓	1534	✓	✓	~~2.25~~ 2.04	~~0.95~~ 1.25	
FED3-6	↓	1537	✓	✓	1.38	0.62	
FED4-6	↓	1544	✓	✓	1.75	0.60	
FED5-6	↓	15[illegible]	✓	✓	1.74	[illegible]	
(near east shore) FED6-6	↓	1554	✓	✓	1.66		
FED6-6 dup	↓	1554			1.66		COC: HRdup1
TRAP BET #1	& 2	1532					
[illegible]		15[illegible]			2.25	[illegible]	
					[illegible]	0.80	

321935

Water temperature: ______________
Weather data:
Air temperature ______________
Wind: ______________
Precipitation: ______________

Notes:

Sampled by:
Team Leader: CHRIS BABLIN
Crew #1: DICK RYBINSKI
Crew #2: ______________

O'Brien & Gere Engineers
(WAA:djb/52:612.198)

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1996 WATER COLUMN MONITORING STUDY

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Transect FED Field Log: Round 7

Station I.D.	Date	Time	Sample Type: PCB aliquot	Sample Type: TSS aliquot	Approximate Water Depth	Water Velocity (ft^2/sec)	Comments
(near west shore) FED1-7	9/17/96	1633	✓	✓	0.78	0.32	
FED1-7MS	↓	1633	✓	✓	0.78	0.32	
FED2-7		1640	✓	✓	1.[illegible]8	0.41	
FED3-7		1643	✓	✓	1.10	0.34	
FED4-7		1646	✓	✓	1.51	0.26	
FED5-7		[illegible]	[illegible]	✓		[illegible]	
(near east shore) FED6-7		165[illegible]	[illegible]	[illegible]	1.[illegible]	[illegible]	
FED6-7		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	COC: HRdup1
TRAP [illegible] 2		1636			[illegible]	[illegible]33	[illegible] middle [illegible]
							[illegible]
[illegible]		[illegible]	[illegible]	[illegible]	0.[illegible]	[illegible]	[illegible]

321936

Water temperature: ____________

Weather data:

Air temperature ____________

Wind: ____________

Precipitation: [illegible]

Notes: [illegible]

Sampled by:

Team Leader: CHRIS BABLIN

Crew #1: DICK RYBINSKI

Crew #2: ____________

O'Brien & Gere Engineers

(WAA:djb/52:612.198)

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HUDSON RIVER PROJECT
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Transect FED Field Log: Round 8

Station I.D.	Date	Time	Sample Type: PCB aliquot	Sample Type: TSS aliquot	Approximate Water Depth	Water Velocity (ft³/sec)	Comments
(near west shore) FED1-8	9/17/96	1730	✓	✓	0.90	0.98	
FED1-8MS	↓	1730	✓	✓	0.90	0.98	
FED2-8		1734	✓	✓	2.05	2.37	
FED3-8		1737	✓	✓	1.38	1.71	
FED4-8		1740	✓	✓	1.85	1.70	
FED5-8		1743	✓	✓	1.95	2.10	
(near east shore) FED6-8		1746	✓	✓	1.90	1.93	
FED6-8 dup	↓	1746	✓	✓	1.90	1.93	COC: HRdup1
Trap @ 1 1/2		17:32			2.30	1.74	
TRAP 5 1/2		17:42			1.00	1.84	

Water temperature: ________
Weather data:
Air temperature ________
Wind: ________
Precipitation: ________

Notes: West Bridge @ 17:56
flow = 1 ft/sec
depth = 6.4 ft
West Bridge trap depth = 7.4 ft flow = 0.7

Sampled by:
Team Leader: CHRIS BABLIN
Crew #1: DICK RYBINSKI
Crew #2: ________

O'Brien & Gere Engineers
(WAA:djb/52:612.198)

321937

Data validation technical memorandum

(not included with this copy of the report)

APPENDIX F

PCB data summary packages

and

APPENDIX G

Total suspended solids data summary packages

(not included in this copy of the report)

Comparison of laboratory reported Method NEA608-CAP PCB data and bias-adjusted PCB data

Table H-1. Hudson River water column PCB monitoring results: comparison of laboratory data and results corrected for analytical bias (1)

Date Collected	Sampling Program (2)	Location (3)		Total PCBs (ng/l)	Mono	Di	Tri	Tetra	Penta	Hexa	Hepta
					Homolog Distribution (weight percent) (4)						
01/19/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 197 BD		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		22	0.0	13.8	32.2	36.0	15.1	3.0	0.0
			revised	23	0.0	16.3	32.3	31.4	16.8	3.2	0.0
		HRM 188.5		24	13.6	25.8	32.2	20.1	6.7	1.6	0.0
			revised	30	11.0	37.8	28.0	15.4	6.3	1.5	0.0
01/24/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8		23	0.0	6.4	29.6	50.4	11.4	2.3	0.0
			revised	24	0.0	5.4	31.6	46.8	13.6	2.6	0.0
		HRM 194.2		29	0.0	4.7	28.6	41.4	18.4	6.9	0.0
			revised	29	0.0	2.9	29.7	38.9	21.8	6.7	0.0
		HRM 188.5		229	1.3	16.6	41.1	32.9	6.3	1.9	0.0
			revised	232	1.4	14.0	44.9	30.5	7.4	1.8	0.0
		HRM 1885. Arch		22	0.0	21.5	39.5	28.9	8.2	2.1	0.0
			revised	25	0.0	26.3	38.2	24.8	8.7	2.1	0.0
		HRM 188.5 BD		22	0.0	23.4	36.2	31.0	7.5	1.9	0.0
			revised	27	0.0	34.2	31.3	25.2	7.6	1.8	0.0
01/31/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8 BD		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		<11	--	--	--	--	--	--	--
			revised	11	0.0	18.6	29.3	25.3	20.5	6.2	0.0
		HRM 188.5		22	13.2	19.1	28.8	33.6	5.0	0.2	0.0
			revised	26	11.8	26.6	29.4	26.5	5.5	0.3	0.0
02/07/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		11	0.0	13.1	28.8	38.0	15.8	4.4	0.0
			revised	11	0.0	8.6	30.4	37.1	19.1	4.8	0.0
		HRM 188.5		12	0.0	22.2	35.5	27.2	11.9	3.3	0.0
			revised	13	0.0	23.8	34.7	24.8	13.2	3.5	0.0
		HRM 188.5 BD		12	0.0	24.2	34.1	27.1	11.4	3.3	0.0
			revised	13	0.0	25.2	34.2	24.3	12.8	3.5	0.0

Table H-1. Hudson River water column PCB monitoring results: comparison of laboratory data and results corrected for analytical bias (1)

Date Collected	Sampling Program (2)	Location (3)		Total PCBs (ng/l)	Mono	Di	Tri	Tetra	Penta	Hexa	Hepta
					Homolog Distribution (weight percent) (4)						
02/14/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2 BD		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 188.5		15	6.8	26.5	32.6	23.6	8.2	2.3	0.0
			revised	17	6.3	29.6	31.5	20.9	9.4	2.3	0.0
02/21/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 197.0 BD		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 188.5		29	8.2	17.3	38.0	26.3	8.6	1.7	0.0
			revised	34	7.2	24.2	35.9	22.2	8.7	1.8	0.0
02/28/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8 BD		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 188.5		20	0.0	19.9	30.3	31.7	12.1	6.0	0.0
			revised	24	0.0	27.6	28.4	26.6	11.7	5.7	0.0
03/06/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2 BD		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 188.5		124	6.2	17.7	35.0	30.9	8.0	2.2	0.0
			revised	143	5.6	24.9	33.2	26.0	8.4	1.9	0.0

Table H-1. Hudson River water column PCB monitoring results: comparison of laboratory data and results corrected for analytical bias (1)

Date Collected	Sampling Program (2)	Location (3)		Total PCBs (ng/l)	Homolog Distribution (weight percent) (4) Mono	Di	Tri	Tetra	Penta	Hexa	Hepta
03/13/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 197.0 BD		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 188.5		16	20.3	11.2	36.3	20.4	9.0	2.9	0.0
			revised	19	18.1	17.5	34.4	17.7	9.7	2.7	0.0
03/21/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8 BD		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 188.5		14	0.0	20.7	37.8	26.8	12.8	1.9	0.0
			revised	18	0.0	31.4	33.2	21.4	12.2	1.9	0.0
03/28/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		<11	--	--	--	--	--	--	--
			revised	11	0.0	25.9	29.6	23.7	16.2	4.6	0.0
		HRM 194.2 BD		<11	--	--	--	--	--	--	--
			revised	12	0.0	22.9	27.3	25.9	19.1	4.9	0.0
		HRM 188.5		23	0.0	24.2	34.0	30.5	9.7	1.6	0.0
			revised	29	0.0	35.6	30.2	23.2	9.5	1.4	0.0
04/03/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 188.5		15	0.0	21.5	40.8	27.0	9.2	1.5	0.0
			revised	17	0.0	26.9	38.9	23.0	9.5	1.7	0.0
		HRM 188.5 BD		15	0.0	22.2	37.4	30.6	8.4	1.5	0.0
			revised	17	0.0	27.4	36.0	26.2	8.8	1.6	0.0

Table H-1. Hudson River water column PCB monitoring results: comparison of laboratory data and results corrected for analytical bias (1)

Date Collected	Sampling Program (2)	Location (3)	Total PCBs (ng/l)	Homolog Distribution (weight percent) (4) Mono	Di	Tri	Tetra	Penta	Hexa	Hepta
04/10/96	PCRDMP	HRM 197.0	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 197.0 BD	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 196.8	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 194.2	13	0.0	11.1	23.2	45.1	17.7	2.9	0.0
		revised	13	0.0	5.8	24.7	44.8	21.4	3.4	0.0
		HRM 188.5	53	1.9	13.7	36.1	35.6	9.6	3.2	0.0
		revised	60	1.8	18.9	35.6	30.7	10.0	3.0	0.0
04/17/96	PCRDMP	HRM 197.0	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 196.8	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 196.8 BD	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 194.2	13	0.0	9.6	38.5	34.9	14.1	3.1	0.0
		revised	13	0.0	5.6	41.8	31.7	17.4	3.5	0.0
		HRM 188.5	54	8.1	15.1	35.8	31.2	8.7	1.1	0.0
		revised	62	7.4	22.5	33.8	26.0	9.2	1.1	0.0
04/24/96	PCRDMP	HRM 197.0	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 196.8	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 194.2	17	0.0	7.9	38.6	40.5	11.0	2.0	0.0
		revised	17	0.0	4.9	40.9	38.3	13.6	2.3	0.0
		HRM 194.2 BD	17	0.0	8.6	38.1	39.8	11.3	2.2	0.0
		revised	18	0.0	5.0	40.4	38.2	13.8	2.5	0.0
		HRM 188.5	102	8.2	10.5	39.0	36.1	5.0	1.2	0.0
		revised	115	7.6	17.6	36.0	32.3	5.5	1.1	0.0
05/01/96	PCRDMP	HRM 197.0	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 196.8	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 194.2	13	0.0	15.7	35.1	33.7	13.3	2.3	0.0
		revised	14	0.0	19.4	35.3	28.8	14.2	2.4	0.0
		HRM 188.5	47	7.2	18.9	36.9	28.2	7.2	1.5	0.0
		revised	56	6.3	27.9	34.1	22.8	7.5	1.5	0.0
		HRM 188.5 BD	47	7.3	17.9	36.6	28.9	7.7	1.6	0.0
		revised	56	6.3	27.1	33.9	23.3	7.9	1.5	0.0

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Table H-1. Hudson River water column PCB monitoring results: comparison of laboratory data and results corrected for analytical bias (1)

Date Collected	Sampling Program (2)	Location (3)	Total PCBs (ng/l)	Homolog Distribution (weight percent) (4)						
				Mono	Di	Tri	Tetra	Penta	Hexa	Hepta
05/08/96	PCRDMP	HRM 197.0	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 197.0 BD	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 196.8	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 194.2	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 188.5	37	10.6	22.3	34.1	25.2	6.5	1.4	0.0
		revised	46	8.7	34.7	29.6	19.2	6.3	1.4	0.0
05/15/96	PCRDMP	HRM 197.0	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 196.8	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 196.8 BD	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 194.2	16	0.0	11.8	39.2	35.5	10.9	2.8	0.0
		revised	17	0.0	13.3	40.4	31.3	12.2	2.8	0.0
		HRM 188.5	19	0.0	7.9	41.3	39.7	9.5	1.6	0.0
		revised	21	0.0	10.1	41.2	35.7	11.4	1.6	0.0
05/22/96	PCRDMP	HRM 197.0	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 196.8	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 194.2	<11	--	--	--	--	--	--	--
		revised	11	0.0	18.8	35.1	28.5	13.8	3.8	0.0
		HRM 194.2 BD	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 188.5	53	14.3	24.2	33.3	21.7	5.6	1.0	0.0
		revised	67	11.8	36.2	29.2	16.6	5.4	0.8	0.0
05/29/96	PCRDMP	HRM 197.0	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 196.8	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 194.2	13	0.0	12.9	33.1	40.6	10.4	3.0	0.0
		revised	14	0.0	15.0	32.9	37.3	11.7	3.1	0.0
		HRM 188.5	103	17.0	23.0	32.0	21.7	5.0	1.3	0.0
		revised	132	14.0	35.9	27.6	16.7	4.9	1.0	0.0
		HRM 188.5 BD	102	17.4	22.7	31.4	22.1	5.2	1.4	0.0
		revised	129	14.4	34.9	27.4	17.2	5.0	1.1	0.0

Table H-1. Hudson River water column PCB monitoring results: comparison of laboratory data and results corrected for analytical bias (1)

Date Collected	Sampling Program (2)	Location (3)		Total PCBs (ng/l)	Homolog Distribution (weight percent) (4) Mono	Di	Tri	Tetra	Penta	Hexa	Hepta
06/05/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 197.0 BD		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		17	0.0	15.6	30.5	36.4	14.1	3.4	0.0
			revised	19	0.0	17.7	30.4	32.1	16.2	3.6	0.0
		HRM 188.5		212	18.7	22.1	32.1	20.2	5.6	1.3	0.0
			revised	271	15.3	34.6	27.9	15.8	5.4	1.0	0.0
06/12/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8 BD		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		15	0.0	15.4	33.0	33.2	15.6	2.8	0.0
			revised	17	0.0	18.7	32.1	28.9	17.3	3.0	0.0
		HRM 188.5		108	16.2	22.9	33.9	19.8	5.3	1.8	0.0
			revised	131	14.0	31.7	30.9	16.3	5.4	1.7	0.0
06/19/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		18	0.0	20.5	38.8	28.1	10.6	2.0	12.0
			revised	21	0.0	22.2	39.9	24.0	11.8	2.1	10.4
		HRM 194.2 BD		17	0.0	21.1	39.8	28.3	8.7	2.1	0.0
			revised	20	0.0	22.6	41.7	23.8	9.8	2.2	0.0
		HRM 188.5		128	18.8	20.8	33.5	20.0	5.3	1.6	0.0
			revised	163	15.4	32.9	29.8	15.4	5.1	1.3	0.0
06/26/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8		<11	--	--	--	--	--	--	--
			revised	11	0.0	21.7	41.0	21.1	12.0	4.1	0.0
		HRM 194.2		29	0.0	14.5	43.2	32.1	8.7	1.6	0.0
			revised	31	0.0	12.8	47.0	28.3	10.0	1.8	0.0
		HRM 188.5		187	17.2	18.2	34.8	22.3	6.0	1.5	0.0
			revised	232	14.5	29.1	31.4	17.8	5.9	1.2	0.0
		HRM 188.5 BD		181	17.2	18.2	33.7	23.0	6.2	1.7	0.0
			revised	223	14.6	28.8	30.6	18.5	6.2	1.3	0.0

Table H-1. Hudson River water column PCB monitoring results: comparison of laboratory data and results corrected for analytical bias (1)

Date Collected	Sampling Program (2)	Location (3)		Total PCBs (ng/l)	Homolog Distribution (weight percent) (4) Mono	Di	Tri	Tetra	Penta	Hexa	Hepta
07/01/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 197.0 BD		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		13	0.0	11.9	36.1	38.3	11.3	2.6	0.0
			revised	15	0.0	13.9	36.0	34.1	13.2	2.8	0.0
		HRM 188.5		86	15.4	22.5	33.6	23.0	4.7	0.8	0.0
			revised	112	12.2	36.5	28.9	17.3	4.6	0.7	0.0
07/10/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		12	0.0	6.5	35.3	43.2	12.5	2.6	0.0
			revised	12	0.0	4.0	37.6	40.8	14.6	3.0	0.0
		HRM 188.5		132	17.9	22.9	34.8	19.0	4.5	0.9	0.0
			revised	172	14.3	36.5	29.5	14.6	4.4	0.7	0.0
		HRM 188.5 BD		127	17.7	22.8	34.3	19.9	4.4	1.0	0.0
			revised	164	14.2	36.1	29.3	15.4	4.2	0.8	0.0
		Plunge Pool		65	0.0	24.9	46.5	23.2	4.9	0.6	0.0
			revised	65	0.0	19.1	52.1	22.3	5.9	0.6	0.0
		RB 960710		71	0.0	34.8	42.7	17.7	4.1	0.7	0.0
			revised	66	0.0	24.0	51.6	18.3	5.4	0.8	0.0
07/17/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8 BD		318	1.0	8.9	43.3	40.1	5.7	1.0	0.0
			revised	321	1.1	6.8	46.6	37.6	6.9	1.0	0.0
		HRM 196.8 BDArch		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		19	0.0	17.9	34.7	34.4	11.0	1.9	0.0
			revised	20	0.0	17.6	35.5	31.8	13.0	2.0	0.0
		HRM 188.5		92	22.3	23.2	30.5	18.4	4.4	1.3	0.0
			revised	118	18.1	35.9	26.3	14.5	4.2	1.0	0.0
		Plunge Pool		867	0.0	15.0	49.3	31.9	3.3	0.5	0.0
			revised	878	0.0	11.0	54.2	30.3	4.0	0.5	0.0
		RB 960717		79	0.0	36.6	41.0	16.3	4.0	2.2	0.0
			revised	73	0.0	26.0	49.8	16.7	5.3	2.2	0.0

Table H-1. Hudson River water column PCB monitoring results: comparison of laboratory data and results corrected for analytical bias (1)

Date Collected	Sampling Program (2)	Location (3)		Total PCBs (ng/l)	Homolog Distribution (weight percent) (4) Mono	Di	Tri	Tetra	Penta	Hexa	Hepta
07/24/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		15	0.0	14.3	30.3	42.5	10.5	2.3	0.0
			revised	17	0.0	20.5	29.4	36.1	11.6	2.5	0.0
		HRM 194.2 BD		18	0.0	12.1	28.2	44.9	12.0	2.8	0.0
			revised	21	0.0	17.1	27.5	39.5	13.1	2.8	0.0
		HRM 188.5		56	11.6	23.6	36.0	22.3	5.6	0.9	0.0
			revised	73	9.2	37.4	30.2	17.0	5.4	0.8	0.0
		Plunge Pool		44	0.0	14.4	32.9	37.5	12.0	3.2	0.0
			revised	46	0.0	12.1	35.7	34.8	14.2	3.1	0.0
		RB 960724		39	0.0	30.2	42.7	22.1	4.2	0.8	0.0
			revised	36	0.0	20.5	50.5	22.3	5.7	1.0	0.0
07/31/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 197.0 BD		<11	--	--	--	--	--	--	--
				<11	--	--	--	--	--	--	--
		HRM 196.8		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		55	0.0	4.1	41.4	43.9	8.7	2.0	0.0
			revised	56	0.0	3.0	44.0	41.0	10.2	1.9	0.0
		HRM 188.5		55	0.0	28.4	39.2	23.0	7.4	1.9	0.0
			revised	77	0.0	44.1	31.3	16.7	6.5	1.4	0.0
		Plunge Pool		1417	0.0	8.1	43.7	39.1	7.3	1.7	0.1
			revised	1450	0.0	6.9	46.8	36.0	8.6	1.7	0.1
08/07/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8		336	0.0	12.1	45.9	35.0	5.8	1.2	0.0
			revised	341	0.0	9.2	50.0	32.8	6.9	1.2	0.0
		HRM 194.2		21	0.0	18.1	34.8	29.4	13.4	4.3	0.0
			revised	25	0.0	24.1	33.4	24.5	13.7	4.3	0.0
		HRM 188.5		96	15.1	25.6	35.2	19.7	3.6	0.9	0.0
			revised	129	11.7	39.7	29.8	14.7	3.3	0.8	0.0
		HRM 188.5 BD		92	16.7	23.1	35.6	20.3	3.4	0.9	0.0
			revised	118	13.5	35.5	31.3	15.7	3.3	0.8	0.0
		Plunge Pool		85	0.0	10.2	44.2	37.8	6.3	1.5	0.0
			revised	88	0.0	10.6	46.2	34.3	7.3	1.5	0.0

Table H-1. Hudson River water column PCB monitoring results: comparison of laboratory data and results corrected for analytical bias (1)

Date Collected	Sampling Program (2)	Location (3)		Total PCBs (ng/l)	Homolog Distribution (weight percent) (4) Mono	Di	Tri	Tetra	Penta	Hexa	Hepta
08/14/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		23	0.0	15.7	39.7	32.3	9.8	2.6	0.0
			revised	26	0.0	19.9	39.1	27.8	10.4	2.8	0.0
		HRM 194.2 BD		22	0.0	16.0	41.7	32.5	8.7	1.2	0.0
			revised	24	0.0	19.9	41.0	28.2	9.7	1.3	0.0
		HRM 188.5		63	14.7	24.0	36.1	21.1	3.4	0.8	0.0
			revised	85	11.4	38.8	30.6	15.4	3.1	0.7	0.0
		Plunge Pool		97	0.0	7.6	49.4	37.2	4.9	1.0	0.0
			revised	103	0.0	8.3	51.6	33.6	5.4	1.1	0.0
08/20/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 197.0 BD		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		17	0.0	12.7	38.8	35.1	11.0	2.4	0.0
			revised	19	0.0	17.2	37.5	30.5	12.3	2.5	0.0
		HRM 188.5		111	16.4	23.5	36.0	18.0	4.3	1.9	0.0
			revised	150	12.7	38.9	29.7	13.5	3.9	1.3	0.0
		Plunge Pool		33	0.0	14.5	41.2	31.8	10.2	2.4	0.0
			revised	36	0.0	17.0	41.2	28.2	11.2	2.5	0.0
08/28/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 196.8 BD		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		13	0.0	19.9	32.6	32.0	12.3	3.2	0.0
			revised	14	0.0	21.8	32.3	28.7	13.8	3.4	0.0
		HRM 188.5		86	18.7	21.7	36.4	18.1	4.4	0.7	0.0
			revised	113	14.8	35.7	30.5	14.1	4.2	0.6	0.0
		Plunge Pool		12	0.0	16.1	39.8	30.6	9.8	3.8	0.0
			revised	12	0.0	14.8	41.9	27.5	11.4	4.4	0.0

Table H-1. Hudson River water column PCB monitoring results: comparison of laboratory data and results corrected for analytical bias (1)

Date Collected	Sampling Program (2)	Location (3)	Total PCBs (ng/l)	Mono	Di	Tri	Tetra	Penta	Hexa	Hepta
				Homolog Distribution (weight percent) (4)						
09/04/96	HydroMon	HRM 188.5 Round 1	42	0.0	16.1	45.9	28.6	8.1	1.4	0.0
		revised	51	0.0	24.3	42.0	23.9	8.5	1.4	0.0
		HRM 188.5 Round 2	86	12.7	23.9	37.5	19.6	5.5	0.9	0.0
		revised	114	10.0	37.9	31.2	15.1	5.1	0.8	0.0
		HRM 188.5 Round 3	90	14.0	24.1	36.8	19.2	5.0	0.9	0.0
		revised	118	11.1	37.3	31.1	15.0	4.7	0.7	0.0
	PCRDMP	HRM 197.0	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 196.8	<11	--	--	--	--	--	--	--
		revised	13	0.0	27.9	33.0	20.6	14.0	4.5	0.0
		HRM 194.2	23	0.0	18.3	38.1	33.3	7.5	2.9	0.0
		revised	23	0.0	17.6	39.4	31.3	8.9	2.9	0.0
		HRM 188.5	80	9.2	22.1	35.1	22.9	8.3	2.4	0.0
		revised	104	7.5	34.9	30.1	17.7	7.8	2.1	0.0
		HRM 188.5 BD	78	10.9	22.7	36.7	23.3	5.2	1.1	0.0
		revised	102	8.8	36.7	30.9	17.9	5.0	0.8	0.0
		Plunge Pool	24	0.0	16.4	39.9	31.2	9.2	3.3	0.0
		revised	26	0.0	16.6	41.1	28.7	10.5	3.2	0.0
09/10/96	PCRDMP	HRM 197.0	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 197.0 BD	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 196.8	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 194.2	16	0.0	12.7	37.2	39.1	7.8	3.2	0.0
		revised	17	0.0	12.2	39.0	35.7	9.5	3.6	0.0
		HRM 188.5	43	8.3	23.4	37.6	22.0	7.1	1.6	0.0
		revised	55	6.8	35.5	32.8	17.0	6.6	1.4	0.0
		Plunge Pool	1424	0.0	8.0	45.9	39.3	5.7	1.1	0.0
		revised	1453	0.0	6.4	49.4	36.3	6.8	1.1	0.0
09/17/96	TRANSECTS	Plunge Pool	37	0.0	13.6	36.1	31.8	14.3	4.3	0.0
		revised	38	0.0	11.6	37.2	29.3	17.1	4.8	0.0
09/18/96	PCRDMP	HRM 197.0	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 194.2	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 194.2 BD	<11	--	--	--	--	--	--	--
		revised	<11	--	--	--	--	--	--	--
		HRM 188.5	49	13.5	26.5	36.8	18.3	4.1	0.7	0.0
		revised	65	10.6	40.3	30.5	14.2	3.9	0.6	0.0

Table H-1. Hudson River water column PCB monitoring results: comparison of laboratory data and results corrected for analytical bias (1)

Date Collected	Sampling Program (2)	Location (3)	Total PCBs (ng/l)	Homolog Distribution (weight percent) (4) Mono	Di	Tri	Tetra	Penta	Hexa	Hepta
09/24/96	TIP SURVEY	HRM 197.0	<11	–	–	–	–	–	–	–
		revised	<11	–	–	–	–	–	–	–
09/25/96	PCRDMP	HRM 197.0	<11	–	–	–	–	–	–	–
		revised	<11	–	–	–	–	–	–	–
		HRM 194.2	<11	–	–	–	–	–	–	–
		revised	<11	–	–	–	–	–	–	–
		HRM 194.2 BD	<11	–	–	–	–	–	–	–
		revised	<11	–	–	–	–	–	–	–
		HRM 188.5	37	16.1	31.5	28.6	18.9	4.3	0.8	0.0
		revised	53	11.7	48.5	22.4	13.0	3.7	0.6	0.0
		Plunge Pool	34	0.0	15.9	45.2	32.1	5.7	1.2	0.0
		revised	34	0.0	11.8	49.4	30.5	7.1	1.3	0.0
10/02/96	PCRDMP	HRM 197.0	<11	–	–	–	–	–	–	–
		revised	<11	–	–	–	–	–	–	–
		HRM 194.2	<11	–	–	–	–	–	–	–
		revised	<11	–	–	–	–	–	–	–
		HRM 188.5	35	0.0	50.8	28.9	15.7	3.6	1.0	0.0
		revised	58	0.0	67.7	19.3	9.7	2.7	0.7	0.0
		HRM 188.5 BD	35	0.0	46.9	31.8	15.8	4.5	1.0	0.0
		revised	55	0.0	63.2	22.4	10.2	3.5	0.8	0.0
		Plunge Pool	14	0.0	45.1	30.7	18.4	4.1	1.7	0.0
		revised	15	0.0	43.1	33.2	17.3	4.4	2.0	0.0
10/09/96	PCRDMP	HRM 197.0	<11	–	–	–	–	–	–	–
		revised	<11	–	–	–	–	–	–	–
		HRM 197.0 BD	<11	–	–	–	–	–	–	–
		revised	<11	–	–	–	–	–	–	–
		HRM 194.2	<11	–	–	–	–	–	–	–
		revised	<11	–	–	–	–	–	–	–
		HRM 188.5	38	24.4	35.5	22.1	14.7	2.8	0.4	0.0
		revised	54	17.8	51.9	17.0	10.5	2.4	0.4	0.0
		Plunge Pool	<11	–	–	–	–	–	–	–
		revised	12	0.0	37.6	38.7	15.1	7.6	1.0	0.0
10/16/96	PCRDMP	HRM 197.0	<11	–	–	–	–	–	–	–
		revised	<11	–	–	–	–	–	–	–
		HRM 194.2	<11	–	–	–	–	–	–	–
		revised	<11	–	–	–	–	–	–	–
		HRM 188.5	56	39.8	26.8	19.9	9.3	3.4	0.7	0.0
		revised	75	30.7	42.1	16.4	7.0	3.2	0.6	0.0
		HRM 188.5 BD	58	40.7	27.3	18.0	9.3	3.9	0.7	0.0
		revised	79	31.1	43.5	14.4	7.0	3.4	0.6	0.0
		Plunge Pool	27	0.0	27.5	36.6	25.1	9.3	1.5	0.0
		revised	27	0.0	22.5	41.0	24.5	10.3	1.8	0.0

Table H-1. Hudson River water column PCB monitoring results: comparison of laboratory data and results corrected for analytical bias (1)

Date Collected	Sampling Program (2)	Location (3)		Total PCBs (ng/l)	Homolog Distribution (weight percent) (4) Mono	Di	Tri	Tetra	Penta	Hexa	Hepta
10/23/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		12	0.0	29.2	27.0	29.6	10.6	3.7	0.0
			revised	13	0.0	27.5	28.0	28.0	12.3	4.1	0.0
		HRM 194.2 BD		12	0.0	33.3	29.4	19.7	14.4	3.2	0.0
			revised	13	0.0	32.9	30.1	18.3	15.2	3.5	0.0
		HRM 188.5		62	39.8	26.1	18.7	10.3	4.3	0.8	0.0
			revised	82	31.2	40.6	15.8	7.9	3.8	0.7	0.0
		Plunge Pool		17	0.0	17.1	44.0	29.3	8.0	1.6	0.0
			revised	18	0.0	16.5	45.6	27.8	8.4	1.7	0.0
10/29/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 188.5		93	26.9	23.4	27.0	16.4	5.6	0.8	0.0
			revised	123	21.3	38.2	22.4	12.4	5.1	0.6	0.0
		HRM 188.5 BD		94	25.5	26.3	25.6	16.3	5.5	0.8	0.0
			revised	125	20.1	40.8	21.3	12.2	5.0	0.7	0.0
		Plunge Pool		18	0.0	15.8	35.8	31.3	14.6	2.5	0.0
			revised	19	0.0	15.4	36.8	28.4	15.7	3.8	0.0
11/06/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2 BD		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM188.5		46	39.0	26.5	19.2	9.7	5.1	0.5	0.0
			revised	62	30.1	42.0	15.4	7.4	4.7	0.5	0.0
		Plunge Pool		18	0.0	20.2	37.4	26.1	14.0	2.3	0.0
			revised	18	0.0	16.8	39.9	25.1	15.6	2.6	0.0
11/14/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		14	0.0	16.0	35.6	32.2	13.6	2.6	0.0
			revised	14	0.0	8.8	39.2	32.0	16.9	3.1	0.0
		HRM 194.2 BD		14	0.0	14.2	34.8	32.4	15.0	3.6	0.0
			revised	14	0.0	7.8	37.9	32.3	18.1	4.0	0.0
		HRM 188.5		33	20.1	23.0	29.4	17.3	8.9	1.2	0.0
			revised	43	16.1	35.3	25.8	13.8	7.9	1.1	0.0
		Plunge Pool		18	0.0	13.6	35.4	26.9	21.2	2.9	0.0
			revised	18	0.0	7.8	37.7	26.9	24.1	3.6	0.0

Table H-1. Hudson River water column PCB monitoring results: comparison of laboratory data and results corrected for analytical bias (1)

Date Collected	Sampling Program (2)	Location (3)		Total PCBs (ng/l)	Homolog Distribution (weight percent) (4) Mono	Di	Tri	Tetra	Penta	Hexa	Hepta
11/20/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		<11	--	--	--	--	--	--	--
			revised	12	0.0	20.5	30.2	22.9	23.4	3.0	0.0
		HRM 188.5		20	0.0	32.6	29.2	19.2	15.7	3.3	0.0
			revised	26	0.0	43.7	24.2	15.5	13.8	2.9	0.0
		HRM 188.5 BD		19	0.0	33.5	28.1	20.0	15.9	2.5	0.0
			revised	25	0.0	44.8	23.3	15.7	14.1	2.2	0.0
		Plunge Pool		17	0.0	19.5	39.6	26.3	12.1	2.5	0.0
			revised	18	0.0	14.7	43.3	25.2	14.1	2.7	0.0
11/27/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2 BD		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 188.5		36	18.1	24.3	29.6	18.6	7.7	1.7	0.0
			revised	44	15.3	33.7	26.5	15.6	7.5	1.5	0.0
		Plunge Pool		12	0.0	26.5	36.3	21.2	12.6	3.3	0.0
			revised	13	0.0	25.1	38.2	19.5	13.5	3.8	0.0
12/04/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		14	0.0	8.8	39.1	38.4	12.0	1.7	0.0
			revised	14	0.0	4.6	41.0	38.7	13.8	2.0	0.0
		HRM 194.2 BD		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 188.5		19	0.0	17.9	43.2	23.0	13.3	2.7	0.0
			revised	23	0.0	25.4	40.2	19.1	12.9	2.4	0.0
12/11/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 188.5		16	0.0	32.6	33.6	20.3	11.4	2.2	0.0
			revised	22	0.0	45.6	27.6	15.5	9.6	1.8	0.0
		HRM 188.5 BD		16	0.0	32.4	32.0	19.9	13.2	2.5	0.0
			revised	22	0.0	45.2	26.3	15.1	11.3	2.1	0.0
		Plunge Pool		14	0.0	19.8	34.2	26.9	16.2	3.0	0.0
			revised	13	0.0	11.3	38.7	27.9	18.6	-3.6	0.0
		Boat Launch		118	0.0	21.7	43.0	29.9	4.6	0.8	0.0
			revised	121	0.0	18.0	47.3	28.6	5.4	0.8	0.0

Table H-1. Hudson River water column PCB monitoring results: comparison of laboratory data and results corrected for analytical bias (1)

Date Collected	Sampling Program (2)	Location (3)		Total PCBs (ng/l)	Homolog Distribution (weight percent) (4)						
					Mono	Di	Tri	Tetra	Penta	Hexa	Hepta
12/18/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2 BD		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 188.5		16	0.0	30.9	29.6	22.5	14.6	2.5	0.0
			revised	20	0.0	41.7	24.9	17.9	13.3	2.2	0.0
		Boat Launch		17	0.0	17.7	48.1	27.3	6.8	0.0	0.0
			revised	18	0.0	10.5	53.4	28.1	8.0	0.0	0.0
12/23/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 188.5		16	0.0	45.5	24.2	17.7	9.7	2.9	0.0
			revised	15	0.0	38.2	27.7	17.8	12.7	3.7	0.0
		HRM 188.5 BD		15	0.0	42.4	25.1	20.0	9.9	2.7	0.0
			revised	15	0.0	34.6	28.5	20.4	13.1	3.3	0.0
		Boat Launch		26	0.0	29.6	39.2	22.0	7.8	1.5	0.0
			revised	25	0.0	19.6	46.2	22.7	9.6	1.9	0.0
12/30/96	PCRDMP	HRM 197.0		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 194.2 BD		<11	--	--	--	--	--	--	--
			revised	<11	--	--	--	--	--	--	--
		HRM 188.5		13	0.0	30.8	31.8	25.4	9.5	2.6	0.0
			revised	16	0.0	41.1	27.4	19.7	9.4	2.4	0.0
		Boat Launch		35	0.0	15.7	39.2	36.6	7.2	1.3	0.0
			revised	35	0.0	9.0	44.2	37.0	8.5	1.4	0.0

Notes:

(1) Samples analyzed by capillary column using NEA Method 608CAP. "Revised" indicates NEA Method 608CAP data has been corrected for analytical bias, as described in the report Correction of Analytical Biases in the 1991-1997 GE Hudson River PCB Database (O'Brien & Gere Engineers, Inc., September 1997). Unrevised data has been validated.

(2) Sampling programs: PCRDMP = Post-Construction Remnant Deposit Monitoring Program; HydroMon = Hydrofacility Monitoring. TRANSECTS = Transect Sampling program; TIP SURVEY = Time of travel survey in Thompson Island Pool.

(3) HRM = Approximate Hudson River mile; HRM 0.0 is located at the Battery in New York City. Samples from location HRM 194.2 are a composite of west and east channels; Plunge Pool and Boat Launch samples were collected at the base of Bakers Falls (approximate HRM 196.9).

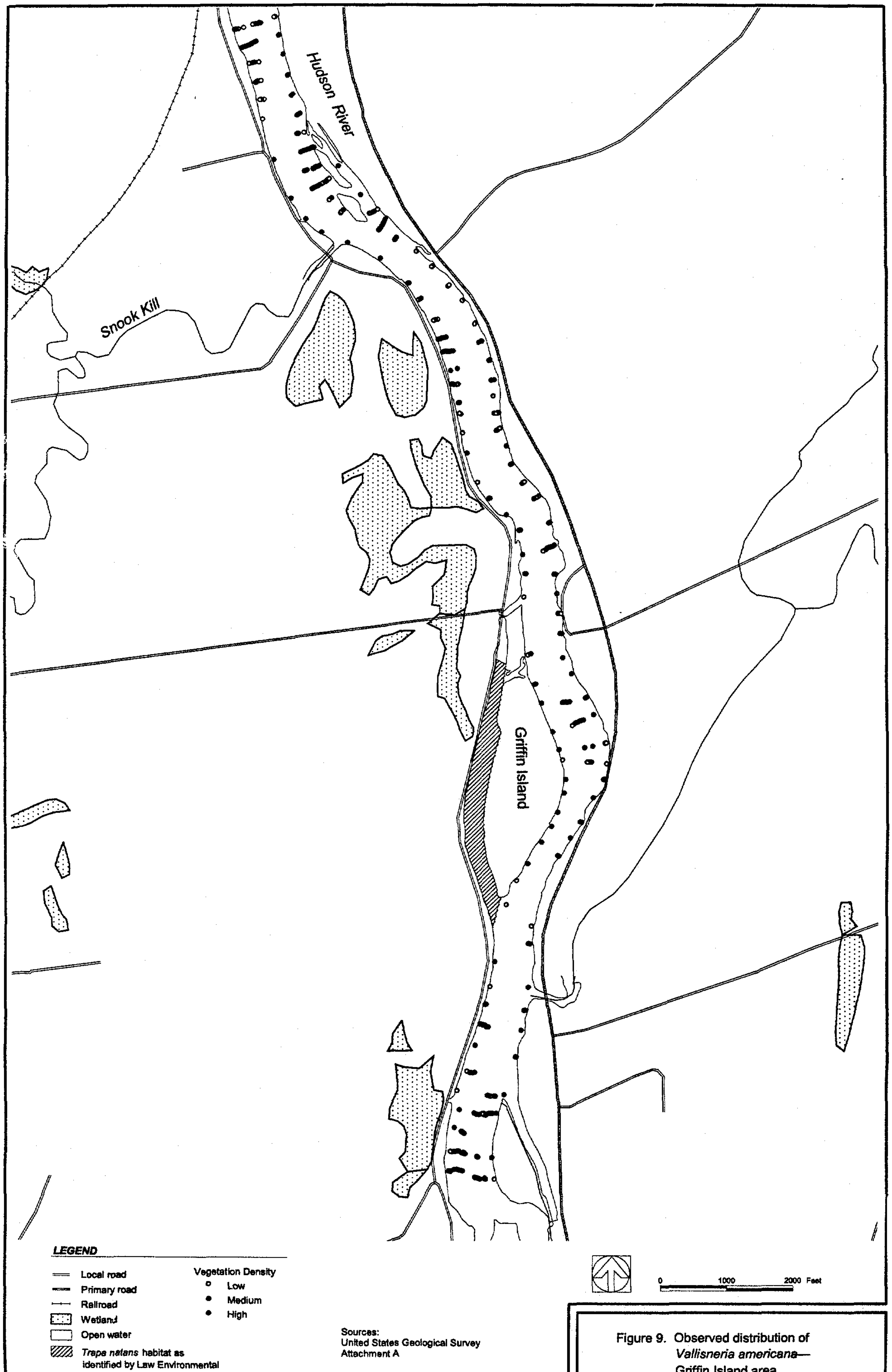
(4) Homolog groups octa-, nona- and deca-chlorinated biphenyls were not detected greater than 0.02%. Homolog distributions for samples with total PCB concentrations less than the method detection limit (<11 ng/l) are not presented.

Key:

BD = Blind Duplicate - a field PCB duplicate sample submitted to the laboratory without identification of sampling location.

Arch = archive sample analyzed to verify results of original or duplicate sample.

Source: O'Brien & Gere Engineers, Inc.



Sources:
United States Geological Survey
Attachment A

Figure 9. Observed distribution of *Vallisneria americana*—Griffin Island area.

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