# Final

# 2006 Peconic River Water Column Sampling

# Data Summary Report

**Prepared for**

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## Acronyms, Abbreviations, and Units of Measure

| | |
|---|---|
| BNL | Brookhaven National Laboratory |
| Cfs | cubic feet per second |
| µg/L | micrograms per liter |
| Mg/kg | milligrams per kilogram |
| Mg/L | milligrams per liter |
| MS/MSD | matrix spike/matrix spike duplicate |
| ng/L | nanograms per liter |
| OU I/V LTMM Plan | Operable Unit I Soils and Operable Unit V Long-Term Monitoring and Maintenance Plan |
| PCB | polychlorinated biphenyl |
| QA/QC | quality assurance/quality control |
| QEA | Quantitative Environmental Analysis, LLC |
| RM | river mile |
| STP | Sewage Treatment Plant |
| TSS | total suspended solids |

## Glossary

**Methylation:** the process by which elemental and inorganic mercury are converted to methylmercury.

**Methylmercury:** the form of organic mercury that readily accumulates in both fish and human tissues.

**Methylmercury fraction:** the portion of total mercury that is in the form of methylmercury. It is computed as the ratio of methylmercury and total mercury concentrations.

**Micrograms per liter:** (µg/L). A measure of concentration often used to express levels of chlorophyll-a in water. A microgram per liter is also commonly expressed as a part per billion (one part chlorophyll-a per billion parts water). A mass of $1x10^{-6}$ grams of chlorophyll-a in one liter of water equals a concentration of 1 µg/L.

**Milligrams per kilogram:** (mg/kg). A measure of concentration often used to express levels of contaminants in sediment. A milligram per kilogram is also commonly expressed as a part per million (one part chemical per million parts sediment). A mass of $1x10^{-3}$ grams of contaminant in one kilogram of sediment equals a concentration of 1 mg/kg.

**Milligrams per liter:** (mg/L). A measure of concentration often used to express levels of total suspended solids in water. A milligram per liter is also commonly expressed as a part per million (one part solids per million parts water). A mass of $1x10^{-3}$ grams of contaminant in one liter of water equals a concentration of 1 mg/L.

**Nanograms per liter:** (ng/L). A measure of concentration often used to express levels of contaminants in water. A nanogram per liter is also commonly expressed as a part per trillion (one part chemical per trillion parts water). A mass of $1x10^{-9}$ grams of contaminant in one liter of water equals a concentration of 1 ng/L.

**Percent methylmercury:** the portion of total mercury that is methylmercury, expressed as a percentage. It is computed as the ratio of methylmercury and total mercury concentrations, multiplied by 100.

**PCBs:** Polychlorinated biphenyls (PCBs) are a group of chemicals consisting of 209 individual compounds that contain between one and ten chlorine atoms per molecule. PCBs were sold in commercial mixtures known in the United States as Aroclors, and were widely used as a fire preventative and insulator in transformers, capacitors, and hydraulic fluid because of their ability to withstand exceptionally high temperatures.

**Total mercury:** all forms of mercury, including elemental mercury, inorganic mercury and methylmercury.

# SECTION 1
# INTRODUCTION

## 1.1 INTRODUCTION

Brookhaven National Laboratory (BNL) is a multi-disciplinary research facility located in Suffolk County, New York. Wastewaters at BNL are directed to the Sewage Treatment Plant (STP), and are treated and discharged into the western branch of the Peconic River. Historic discharges from the STP have resulted in elevated levels of heavy metals, polychlorinated biphenyls (PCBs) and radionuclides in the Peconic River sediments. In 2003 and 2004, BNL implemented a pre-remedial design water column sampling program to characterize mercury and methylmercury levels in the approximate 7-mile stretch of the Peconic River between the STP and Connecticut Avenue (Figure 1-1). In May 2004, BNL initiated a two-phased remediation effort to address contaminated sediments in the Peconic River. Phase 1, conducted between May and September 2004, consisted of the removal of approximately 13,000 cubic yards of river sediments situated on BNL property. The Phase 1 activities resulted in a 96% reduction in average mercury concentration in river sediments on BNL property, from about 4.6 milligrams per kilogram (mg/kg) to 0.2 mg/kg (Envirocon, 2005). Phase 2 was conducted between September 2004 and May 2005, and consisted of the removal of approximately 8,200 cubic yards of river sediments situated outside of BNL property in Suffolk County parklands. The Phase 2 activities resulted in a 95% reduction in average mercury concentration in river sediments downstream of the BNL property line, from about 1.8 mg/kg to 0.09 mg/kg (excluding the Manor Road area). In the Manor Road area, an 83% reduction in mercury sediment concentrations was realized (from 1.08 mg/kg to 0.19 mg/kg) (Envirocon, 2005).

In 2006 the long-term sampling requirements in the Peconic River Record of Decision were formalized within the Operable Unit I Soils and Operable Unit V Long-Term Maintenance and Monitoring Plan (OUI/V LTMM Plan) by which the 2006 Peconic River surface water sampling was conducted. The Plan indicated that in June and August of each year 21 stations in the Peconic River and one reference station in the Connetquot River will be sampled for total mercury, methylmercury and total suspended solids (TSS). Descriptions and locations of the

sampling stations are provided in Table 3-1. The reference sample from the Connetquot River was collected to provide information on total mercury and methylmercury levels in a nearby system that is not impacted by a known mercury source. It serves as a basis for comparison to levels measured in samples collected from the Peconic River upstream of the STP.

## 1.2 REPORT STRUCTURE

This report summarizes the field activities and results of the mercury and methylmercury water column sampling conducted in the Peconic River in 2006. Section 2 presents the sampling locations and parameters measured as part of the sampling activities, while Section 3 discusses the results of these activities and compares them to data collected during June and August of 2003 and 2004 before the river was remediated, and 2005 – the first post-cleanup sampling year. A summary of observations made from the 2006 water column results is provided in Section 4.

## SECTION 2
## DATA COLLECTION SUMMARY

Two rounds of post-remediation water column sampling were conducted in 2006: one in June and one in August. During each survey, water samples were collected from each location specified in the OU I/V LTMM Plan from about mid-channel at approximately 0.5 times the total water column depth. Sample locations are shown in Figure 2-1 and Figure 2-2. A minimum required water depth of 1 foot was established for the water sampling program, so as to minimize the potential resuspension and collection of river sediment during sampling which may confound the interpretation of the surface water analytical results. If the water level was less than one foot an attempt was made to re-locate the sampling point to another location within the general area that had a depth greater than one foot. All samples were analyzed by Brooks Rand, LLC (Seattle, Washington) for total mercury (unfiltered), methylmercury (unfiltered), and TSS according to the methodologies summarized in the Operable Unit I/V LTMM Plan and described in greater detail in the *Sampling Plan for Mercury and Methylmercury in the Water Column of the Peconic River* (QEA, 2003) and the *2004 Sampling Plan for Mercury and Methylmercury in the Water Column of the Peconic River between Schultz Road and Connecticut Avenue* (QEA, 2004a). In addition, field measurements of river flow and water quality parameters such as water temperature, dissolved oxygen, and pH were measured at each location. A summary of the June and August water column survey conducted between 2003 and 2006 is presented in Table 3-2.

The June sampling occurred between June 15 and June 21. During this survey, water column samples were collected at 20 of the 21 locations located between the STP and Connecticut Avenue and 1 sample was collected from the Connetquot River reference station. Station PR-WC-13, situated upstream of the STP, was not sampled in June, 2006 due to low water levels (i.e., less than 1 foot).

During the August 2006 survey water column samples were collected between August 21 and August 23 from 14 of the 21 Peconic River locations plus the Connetquot River reference station. Samples were not collected at stations PR-WC-2, PR-WC-4, PR-WC-9 and PR-WC-11 through PR-WC-14 on the BNL property due to low water levels of less than one foot.

Quality assurance and quality control (QA/QC) samples included collection of field blanks, field replicates and pairs of matrix spike/matrix spike duplicates (MS/MSD). Equipment blanks were not necessary, since disposable sampling equipment was used at each sampling location.

In 2005, based on a request from Brooks Rand, LLC to facilitate handling and analysis of the water samples in the laboratory, three water samples were collected at each sampling location (one each for mercury, methylmercury and TSS analysis). This protocol resulted in mercury, methylmercury and TSS measurements that may not be representative of the same water mass, which complicates the interpretation of the 2005 data. In 2006 a standard method was established for the collection and analysis of all future water column samples. This method consisted of the collection of a single, larger volume water sample for each sampling location that was submitted to the laboratory and analyzed for all three analytes (i.e., mercury, methylmercury and TSS). This methodology ensures the analytical results for each water sampling location are representative of the same water mass, and aids in the interpretation of potentially anomalous results. The 2006 water column survey results for mercury and methylmercury are discussed in detail in Sections 3.1 and 3.2, respectively. In addition, field measurements of turbidity, dissolved oxygen, pH, water temperature, and water depth were also recorded.

Beginning in June 2006, BNL also initiated a water quality monitoring program to assist in the interpretation of the mercury and methylmercury measurements. This program consisted of the collection of water samples throughout the river for various water quality parameters (i.e., chlorophyll-a, total nitrogen, and total phosphorus). Five water quality surveys were conducted in 2006; three stand-alone surveys and two that were performed coincident with the mercury water column sampling. For the three stand-alone surveys, water samples were collected at 8 of the 21 locations routinely monitored for mercury (Table 3-4). For the two surveys performed coincident with the mercury sampling program, water samples were collected from each of the 21 water column sampling locations. Note that in future years, four to five stand-alone water quality surveys will be conducted, one two weeks prior to and one two weeks after each of the June and August water column mercury surveys. In 2006 this program was initiated as part of the June water column mercury survey and hence the water quality survey scheduled for two weeks prior was not conducted. The 2006 water quality results are discussed in Section 3.3.

# SECTION 3
# MONITORING RESULTS

Analytical results for each water sample collected in 2006 are presented in Table 3-1. A comparison of the June 2006 results to those obtained in June 2003, 2004 and 2005 is presented in Table 3-2, while results from August 2006 are compared to those obtained in August 2003, 2004 and 2005 in Table 3-3. TSS, total mercury, and methylmercury concentrations and percent methylmercury are presented as a function of distance from the STP in Figure 3-1 (a through d). A discussion of the total mercury, methylmercury, and water quality measurements is provided below. Note that in June 2006 station PR-WC-13 and in August 2006 stations PR-WC-02, PR-WC-04, PR-WC-09, and PR-WC-11 through PR-WC-14 were not sampled because of low water levels in these portions of the river.

The Peconic River remediation was completed on BNL property in September 2004 and was completed outside BNL property in May 2005. Consequently the first year of the post-cleanup survey occurred in June 2005 for sections of the Peconic River on BNL property and in June 2006 for sections of the river outside BNL property.

## 3.1 TOTAL MERCURY

Total mercury levels upstream of the STP in June are consistent with previous years, as is the increase in concentration from the station upstream of the STP to the STP outfall. Proceeding downstream to the stations west of Schultz Road, concentrations vary but exhibit no overall rise or decline. Of significance is the absence of the high concentrations measured in 2005, and to some extent in 2003, at stations in this stretch of the river. Consistent with the pattern seen in previous years, concentrations are lower at Schultz Road (relative to those measured upstream). This may be due to dilution by the tributary (North Branch of the Peconic River) entering just upstream of this station. Downstream of Schultz Road there is a general decline in concentration that matches the decline seen in previous years. Overall, the June 2006 total mercury results were substantially lower than the results of June 2005 on BNL property and

outside BNL property as far downstream as Schultz Road. Downstream of Schultz Road, concentrations were similar to the June 2005 results and somewhat elevated relative to June 2004.

Like the June data, the August 2006 total mercury data exhibit variability but no overall rise or decline from just downstream of the STP to station PR-WC-03 (3rd west of Schultz Road) (Figure 3-1, panel a). Also similar is the drop in concentration from PR-WC-03 to Schultz Road, although the drop was greater in August, The concentrations of total mercury in the surface water downstream of Schultz Road were substantially lower than in June 2006. The August 2006 total mercury results on the BNL property and downstream to Schultz Road were generally lower than the 2005 results and similar to the 2003 results (Table 3-3). The results for station PR-WC-06 is a notable exception. In August 2006, the sample for PR-WC-06 had an anomalously high value (1,360 ng/L). (The sample was re-analyzed and the re-analysis result (1,370 ng/L) was statistically equivalent to the original sample, with a relative percent difference of 1%.) It is noteworthy that the August 2006 sample for PR-WC-06 also had an anomalously high TSS value of 116 mg/L as did the elevated June 2005 result. This suggests that the sample may have contained suspended sediment which could have contributed to the anomalously high mercury value.

## 3.2 METHYLMERCURY AND PERCENT METHYLMERCURY

The methylmercury concentrations for June and August 2006 were distinctly different. In June, concentrations were similar throughout the river, with some evidence of a decline downstream of Manor Road. In August, concentrations were low just downstream of the STP, increased to a peak at the station north of Area D that was maintained to station PR-WC-03, dropped at Shultz Road and then gradually declined to the end of the study area at Connecticut Avenue (Figure 3-1, panel b). The August methylmercury results for all but three stations (PR-WC-06, PR-WC-05 and PR-WC-03) were substantially lower than the June methylmercury results.

The percent methylmercury shows a spatial pattern (Figure 3-1, panel c) that is distinct from the total mercury and the methylmercury patterns. For the June survey, percent methylmercury varied but exhibited no overall rise or decline between the STP outfall (PR-WC-11, RM 0.00) and PR-WC-02 (RM 2.59). These values ranged from 13.2% to 24.4% and are generally within the historic range (11% to 22%) of percent methylmercury for the Connetquot River. Percent methylmercury downstream of Schultz Road was greater than that observed upstream, generally ranging from about 40% to 60%. The August percent methylmercury results are lower than those from June, often by a factor of two or more. The exception to this is station PR-WC-05 (RM 1.49), where the August 2006 results were higher (34.1% versus 13.2% in June). For stations PR-WCS-05, PR-WCS-06 and PR-WCS-07, the August results are greater than the June results and are generally within the range of the August pre-remediation 2004 data.

## 3.3 WATER QUALITY PARAMETERS

Water quality parameters collected include water temperature, dissolved oxygen, and pH measurements for each round water column survey sampling round. These parameters have been collected since 2003 and the 2006 results and are included in Table 3-1. On June 15, 2006 an additional water quality survey was initiated. The parameters include chlorophyll-a, total nitrogen, total phosphorus and TSS. The 2006 data also includes analytical values for ammonia, total Kjeldahl nitrogen and nitrite-nitrate-N which were not requested from the analytical laboratory. The analytical values for the Water Quality Parameters are shown in Appendix F of the 2006 Peconic River Monitoring Report (BNL 2006). The field data for the Water Quality Parameters are shown in Appendix G the 2006 Peconic River Monitoring Report.

The water quality data indicate that significant biological activity was occurring at several locations in the river, as evidenced by the depressed or elevated dissolved oxygen levels, the elevated pH levels and elevated chlorophyll-a levels. Of particular note are the elevated chlorophyll-a levels between PR-WC-08 (south of Area B) and PR-WC-03 (3$^{rd}$ west of Schultz Road) in August. Chlorophyll-a levels were generally in excess of about 20 µg/L, indicating significant algal productivity in this stretch of the river. This is also supported by the elevated phosphorous levels observed in this area. This biological productivity, coupled with the elevated methylmercury concentrations observed in this stretch of river in August 2006, suggest that conditions in this stretch of river may be favorable for the microbial conversion of residual total mercury to methylmercury in the sediments.

Nitrogen levels exhibit a distinct decline between the STP and the BNL property line. In both June and August, total nitrogen levels decline from about 5 mg/L at the STP outfall to about 1 to 1.5 mg/L at the BNL property line. A more rapid decline is observed in the nitrite-nitrate-N levels during the June and August surveys. These patterns indicate the STP is a significant source of nitrogen to the portion of the river on BNL property.

TSS levels measured between the STP and just downstream of the BNL property line (PR-WC-04) in June vary, but exhibit a slight decline over this stretch of river (Figure 3-1, panel d). TSS levels increase from about 1.0 mg/L at PR-WC-04 to about 22.0 mg/L at PR-WCS-04. Downstream of PR-WCS-04, TSS levels vary and exhibit no consistent trend. Overall, TSS levels measured on BNL property in June 2006 were generally lower than those from 2005, while those collected further downstream (i.e., off BNL property) were similar to those from 2005. In August 2006, TSS levels exhibited considerable variation across the site (relative to June 2006 data). Overall, the August 2006 TSS levels were within the range TSS levels measured in 2004 and 2005.

## 3.4 SLUDGE REMOVAL AND ADDITIONAL STP EFFLUENT SAMPLING

The following planned improvement at the BNL STP could affect the average concentration of mercury released from the STP. Although it is more likely that the operation will decrease rather than increase the average concentration of mercury in the STP effluent, it is important to document any potential change. During the late spring and early summer of 2007 BNL anticipates removal and disposal of the majority of sludge contained in the two aerobic digesters and the clarifier at the BNL Sewage Treatment Plant. The sludge contains digested sanitary waste that has been received in the STP influent over many years. The sludge contains very low-levels of inorganic contaminants and trace levels of radioactivity. Mercury is among those inorganic contaminants. As part of the sludge-drying operation, the supernatant liquid has been analyzed and released back to the head of the STP for treatment prior to release in compliance with the BNL SPDES permit. Removing the sludge is expected to improve the operational efficiency of the digesters and also improve BNL's already high SPDES compliance rate (99% in 2006) for the STP effluent water quality. Water quality measurements (including total mercury and TSS) to monitor compliance with the New York State SPDES permit for

discharge of the STP effluent to the Peconic River are collected two to three times monthly and have been routinely collected since 1998. The low concentrations of mercury STP effluent detected in the SPDES sampling program are too small (generally less than 60 ng/L total mercury) to account for the mercury concentrations in three 2006 sediment samples (Section 2, 2006 Peconic River Monitoring Report).

It is important to collect additional low detection limit samples useful in evaluating the potential impact of the sludge removal operation to better understand the increases in mercury concentrations in the Peconic River surface water between stations PR-WC-12 (upstream of the STP outfall) and PR-WC-11 (downstream of the STP outfall). A sampling plan to collect the necessary data will be prepared and submitted for review to the EPA, DEC and SCDHS.

# SECTION 4
# SUMMARY AND RECOMMENDATIONS

## SUMMARY

Qualitatively, the 2006 water column data exhibit spatial trends that are largely consistent with those from 2003 through 2005. The June and August 2003 and the June 2005 total mercury concentrations increased substantially between station PR-WC-12 upstream of the STP outfall and PR-WC-11 downstream of the STP outfall. (River diversion prevented sampling at PR-WC-12 in June and August 2004 and low water levels prevented sampling PR-WC-12 in August 2006.) Within the remediated sections of the river, the June 2006 total mercury concentrations (Attachment A, Table 3-2, upper panel) between station PR-WC-05 downstream of stream gauging station HQ and PR-WC-01 directly upstream of Schultz Road, are generally substantially lower than the values measured in June 2005 (one year after completion of remediation activities). With the exception of PR-WC-02, the June 2006 total mercury results for these stations are also, in general, similar to the values measured in June 2003 before the remediation. Total mercury concentrations measured from the areas of the river downstream of Schultz Road in June 2006 were similar to those observed in 2005. Both June 2005 and June 2006 results were elevated relative to 2004. With the exception of PR-WC-06 and PR-WC-03, the August 2006 total mercury data are similar to or lower than those from August 2004 and August 2005.

June 2006 methylmercury results were elevated relative to 2003 and 2005 measurements from the STP to downstream of HMn (PR-WC-09). The June 2006 methylmercury results are also generally less than June 2004 and June 2005 results between south of Area B (PR-WC-08) and Schultz Road. Downstream of Schultz Road, methylmercury concentrations are similar to or

slightly higher than those measured historically. Methylmercury concentrations between the STP and PR-WC-03 (3rd west of Schultz Road) are higher than those from 2004 and 2005. Peak methylmercury concentrations are observed between PR-WC-06 and PR-WC-04. Elevated chlorophyll-a measurements (Appendix F) are also observed in this stretch of river during the August surveys, suggesting that significant biological activity, and possibly methylmercury production, was occurring in this stretch of river. Methylmercury concentrations measured downstream of Schultz Road in August 2006 were similar to or lower than those from 2004 and 2005.

Nitrogen data collected during the water quality monitoring in June and August 2006 suggest that the STP is a source of nitrogen to the portion of the river on BNL property.

**RECOMMENDATIONS:**

- It is recommended that the August surface water collection be started not later than during the last week in July and completed not later than during the first week in August, with the flexibility to modify the sampling schedule as needed to avoid impact by low water levels.

- It is also recommended that additional STP effluent data should be collected to evaluate the potential contribution of mercury, methylmercury and TSS in the STP effluent on concentrations of these contaminants in the Peconic River. The media that could potentially be impacted include sediment, surface water and fish. A sampling plan to collect the necessary data will be prepared and submitted for review to the EPA, DEC and SCDHS.

- It is also recommended that one additional parameter be added to the water quality sampling analytes for surface water. The addition of total organic carbon (TOC) will assist in the interpretation of both dissolved oxygen data and methylmercury data. A sampling plan will be prepared and submitted to the EPA, DEC and SCDHS for review. (This recommendation is also repeated as a recommendation in the fish section.)

ACKNOWLEDGEMENTS: QEA, LLC has participated in the Peconic River surface water monitoring program since 2003 and drafted the maps used in this report. QEA has also provided a technical review of the 2006 Peconic River surface water and sediment data and participated in the technical and editorial review of this document. Our sincere thanks to them for their guidance on Peconic River mercury and methylmercury issues 2003.

## SECTION 5
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# Tables

# Table 3-1.
# Results from 2006 Water Column Sampling

| Station ID | Date | Station Description | Dist from STP | Laboratory Results | | | Field Data | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Mercury (ng/L) | Methyl mercury (ng/L) | TSS (mg/L) | Temperature (deg C) | Dissolved Oxygen (mg/L) | pH |
| **June 15 - June 21, 2006** | | | | | | | | | |
| Connetquot | 15-Jun-2006 | Reference Station | | 0.87 | 0.13 | 1.7 | 15.12 | 7.66 | 6.38 |
| PR-WC-14 | 21-Jun-2006 | Upstream of STP[1] | -0.05 | 19.10 | 11.20 | 8.8 | 18.48 | 3.56 | 5.48 |
| PR-WC-13 | | Upstream of STP[1] | -0.05 | [4] | [4] | [4] | [4] | [4] | [4] |
| PR-WC-12 | 21-Jun-2006 | Upstream of STP[1] | -0.04 | 21.70 | 12.40 | 9.8 | 18.39 | 4.06 | 5.66 |
| PR-WC-11 | 21-Jun-2006 | STP Outfall | 0.01 | 43.50 | 7.03 | 3.1 | 20.09 | 5.93 | 5.85 |
| PR-WC-10 | 21-Jun-2006 | West of HmN | 0.31 | 36.50 | 8.91 | 4.0 | 18.91 | 6.26 | 5.81 |
| PR-WC-09 | 21-Jun-2006 | Downstream of HmN | 0.57 | 46.70 | 7.35 | 3.0 | 19.34 | 5.94 | 5.84 |
| PR-WC-08 | 20-Jun-2006 | South of Area B | 0.76 | 34.10 | 5.60 | 1.5 | 22.95 | 5.23 | 5.87 |
| PR-WC-07 | 20-Jun-2006 | South of Area C | 1.01 | 41.60 | 6.06 | 2.3 | 24.95 | 5.04 | 6.03 |
| PR-WC-06 | 20-Jun-2006 | South of Area D | 1.14 | 26.60 | 6.27 | 1.9 | 22.12 | 3.75 | 5.88 |
| PR-WC-05 | 20-Jun-2006 | Downstream of HQ | 1.49 | 34.90 | 4.62 | 2.7 | 22.16 | 3.88 | 6.01 |
| PR-WC-04 | 20-Jun-2006 | 2nd downstream of HQ | 1.76 | 28.40 | 6.67 | 1.0 | 21.78 | 1.96 | 5.95 |
| PR-WC-03 | 20-Jun-2006 | 3rd west of Schultz Rd. | 2.18 | 33.00 | 7.62 | 2.7 | 22.23 | 3.53 | 5.84 |
| PR-WC-02 | 19-Jun-2006 | 2nd west of Schultz Rd. | 2.59 | 47.80 | 9.72 | 8.0 | 24.91 | 1.29 | 5.92 |
| PR-WC-01 | 19-Jun-2006 | Schultz Rd. (West) | 3.06 | 23.70 | 10.10 | 7.6 | 24.33 | 2.47 | 5.64 |
| PR-WCS-01 | 19-Jun-2006 | East of Schultz Rd. | 3.51 | 22.70 | 9.29 | 9.0 | 22.29 | 2.30 | 5.72 |
| PR-WCS-02 | 19-Jun-2006 | West of Manor Rd. | 4.04 | 14.80 | 7.61 | 12.0 | 21.22 | 1.70 | 5.78 |
| PR-WCS-03 | 19-Jun-2006 | Manor Rd. | 4.52 | 13.60 | 8.05 | 14.0 | 20.88 | 1.29 | 5.73 |
| PR-WCS-04 | 19-Jun-2006 | West of Cranberry Bogs | 4.81 | 24.70 | 9.12 | 22.0 | 20.94 | 0.84 | 6.45 |
| PR-WCS-05 | 15-Jun-2006 | East of Cranberry Bogs | 5.96 | 9.46 | 4.09 | 3.7 | 19.20 | 7.27 | 5.79 |
| PR-WCS-06 | 15-Jun-2006 | Middle of Donahues Pond | 6.61 | 10.38 | 4.53 | 20.0 | 19.64 | 4.61 | 5.88 |
| PR-WCS-07 | 15-Jun-2006 | Downstream of Connecticut Ave | 7.07 | 7.13 | 2.70 | 3.0 | 10.06* | 5.85 | 5.82 |
| **August 21 - August 23, 2006** | | | | | | | | | |
| Connetquot | 22-Aug-2006 | Reference Station | - | 0.93 | 0.11 | ND | 16.52 | 4.49 | 6.29 |
| PR-WC-14 | | Upstream of STP | -0.05 | [4] | [4] | [4] | [4] | [4] | [4] |
| PR-WC-13 | | Upstream of STP | -0.05 | [4] | [4] | [4] | [4] | [4] | [4] |
| PR-WC-12 | | Upstream of STP | -0.04 | [4] | [4] | [4] | [4] | [4] | [4] |
| PR-WC-11 | | STP Outfall | 0.01 | [4] | [4] | [4] | [4] | [4] | [4] |
| PR-WC-10 | 23-Aug-2006 | West of HmN | 0.31 | 57.00 | 1.31 | 2.70 | 23.61 | 7.55 | 7.03 |
| PR-WC-09 | | Downstream of HmN | 0.57 | [4] | [4] | [4] | [4] | [4] | [4] |
| PR-WC-08 | 23-Aug-2006 | South of Area B | 0.76 | 91.00 | 2.08 | 25.20 | 24.06 | 11.34 | 7.48 |
| PR-WC-07 | 23-Aug-2006 | South of Area C | 1.01 | 58.70 | 2.26 | 9.10 | 24.12 | 4.69 | 6.61 |
| PR-WC-06 | 23-Aug-2006 | North of Area D | 1.14 | 1360.00 | 13.20 | 116.00 | 22.73 | 1.50 | 6.50 |
| PR-WC-05 | 23-Aug-2006 | Downstream of HQ | 1.49 | 28.60 | 9.76 | 9.30 | 22.31 | 0.86 | 6.27 |
| PR-WC-04 | | 2nd downstream of HQ | 1.76 | [4] | [4] | [4] | [4] | [4] | [4] |
| PR-WC-03 | 23-Aug-2006 | 3rd west of Schultz Rd. | 2.18 | 61.00 | 9.03 | 25.10 | 22.05 | 4.14 | 6.24 |
| PR-WC-02 | | 2nd west of Schultz Rd. | 2.59 | [4] | [4] | [4] | [4] | [4] | [4] |
| PR-WC-01 | 21-Aug-2006 | Schultz Rd. (West) | 3.06 | 6.57 | 1.65 | 2.80 | 23.23 | 4.75 | 6.19 |
| PR-WCS-01 | 21-Aug-2006 | East of Schultz Rd. | 3.51 | 6.71 | 1.37 | 5.30 | 21.57 | 3.90 | 6.06 |
| PR-WCS-02 | 21-Aug-2006 | West of Manor Rd. | 4.04 | 6.120 | 1.550 | 5.700 | 21.10 | 3.79 | 6.07 |
| PR-WCS-03 | 21-Aug-2006 | Manor Rd. | 4.52 | 6.280 | 1.270 | 5.700 | 21.14 | 3.37 | 5.99 |
| PR-WCS-04 | 21-Aug-2006 | West of Cranberry Bogs | 4.81 | 17.500 | 1.810 | 17.600 | 21.71 | 3.54 | 6.15 |
| PR-WCS-05 | 22-Aug-2006 | East of Cranberry Bogs | 5.96 | 1.660 | 0.795 | 5.500 | 21.23 | 1.84 | 5.85 |
| PR-WCS-06 | 22-Aug-2006 | Middle of Donahues Pond | 6.61 | 2.760 | 1.370 | 23.000 | 22.06 | 2.94 | 6.64 |
| PR-WCS-07 | 22-Aug-2006 | Downstream of Connecticut Ave | 7.07 | 0.930 | 0.572 | 5.000 | 22.87 | 5.59 | 6.19 |

Notes:

1. STP = Sewage Treatment Plant, ND = non-detect, detection limits: 0.1 ng/L for total mercury, 0.045ng/L for methylmercury, 1 mg/L for TSS.
2. Units: mi. - miles, deg C = degrees Celsius, mg/L = milligrams per liter, ng/L = nannograms per liter.
3. Results for duplicate samples shown in parentheses.
4. Samples not collected, depth < 1.0 foot.

# Table 3-2. Comparison of Pre- and Post-Remediation Water Column Sampling Results (June Survey)

| | | | 2003 | | | 2004 | | | 2005 | | | 2006 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Station ID** | **Station Description** | **Dist from STP[1,2]** | **June 2003 Total Mercury (ng/L)** | **June 2003 Methylmercury (ng/L)** | **June 2003 TSS (mg/L)** | **June 2004 Total Mercury (ng/L)** | **June 2004 Methylmercury (ng/L)** | **June 2004 TSS (mg/L)** | **June 2005 Total Mercury (ng/L)** | **June 2005 Methylmercury (ng/L)** | **June 2005 TSS (mg/L)** | **June 2006 Total Mercury (ng/L)** | **June 2006 Methylmercury (ng/L)** | **June 2006 TSS (mg/L)** |
| Connetquot | Connetquot River Reference Station | | 4.40 | 0.89 | 20.60 | 0.80 | 0.17 | 1.24 | 0.70 | 0.11 | 2.20 | 0.87 | 0.13 | 1.70 |
| PR-WC-14 | Upstream of STP[1] | -0.05 | [4] | [4] | [4] | [4] | [4] | [4] | 58.90 | 22.20 | 997.00 | 19.10 | 11.20 | 8.80 |
| PR-WC-13 | Upstream of STP[1] | -0.05 | [4] | [4] | [4] | [4] | [4] | [4] | [5] | [5] | [5] | [9] | [9] | [9] |
| PR-WC-12 | Upstream of STP[1] | -0.04 | 17.10 | 2.94 | 1.50 (0.91)[3] | [4] | [4] | [4] | 29.30 | 19.00 | 160.00 | 21.70 | 12.40 | 9.80 |
| PR-WC-11 | STP Outfall | 0.01 | 50.80 | 1.78 | 0.79 | [4] | [4] | [4] | 79.40 | 1.22 | 0.58 | 43.50 | 7.03 | 3.10 |
| PR-WC-10 | West of HmN | 0.31 | 36.80 | 2.49 | 2.62 | [4] | [4] | [4] | 93.1 (93.7)[3] | 2.43 (2.82)[3] | 1.09 (1.96)[3] | 36.50 | 8.91 | 4.00 |
| PR-WC-09 | Downstream of HmN | 0.57 | 59.80 | 2.87 | 3.74 | [4] | [4] | [4] | 769.00 | 3.44 | 9.10 | 46.70 | 7.35 | 3.00 |
| PR-WC-08 | South of Area B | 0.76 | 557.00 | 15.5 | 85.90 | [4] | [4] | [4] | 190.00 | 7.98 | 61.90 | 34.10 | 5.60 | 1.50 |
| PR-WC-07 | South of Area C | 1.01 | 35.80 | 1.71 | 0.75 | [4] | [4] | [4] | 70.90 | 9.48 | 6.80 | 41.60 | 6.06 | 2.30 |
| PR-WC-06 | Norh of Area D | 1.14 | 37.10 (37.50)[3] | 1.48(1.45)[3] | 3.2 (1.29)[3] | [4] | [4] | [4] | 200.00 | 9.93 | 58.10 | 26.60 | 6.27 | 1.90 |
| PR-WC-05 | Downstream of HQ | 1.49 | 37.80 | 2.39 | ND[1] | 224.00 | 31.70 | 294.50 | 60.20 | 8.32 | 7.00 | 34.90 | 4.62 | 2.70 |
| HQ | Discharge of HQ | 1.49 | [4] | [4] | [4] | 99.50 | 19.30 | [4] | [4] | [4] | [4] | | | |
| PR-=WC-04 | 2nd downstream of HQ | 1.76 | 30.40 | 2.08 | ND[1] | 381.00 | [8] | 135.00 | 160.00 | 25.20 | 34.70 | 28.40 | 6.67 | 1.00 |
| | | | | | | {3429.00}[6] | {42.00}[6] | {283.00}[6,7] | | | | | | |
| PR-=WC-03 | 3rd west of Schultz Rd. | 2.18 | 34.30 | 2.54 | 0.78 | 47.80 | [8] | ND[1] | 83.70 | 20.30 | 87.00 | 33.00 | 7.62 | 2.70 |
| | | | | | | {34.40}[6] | {5.53}[6] | {10.80}[6] | | | | | | |
| PR-=WC-02 | 2nd west of Schultz Rd. | 2.59 | 26.00(27.00)[3] | 1.85 (1.84)[3] | 1.65 (0.77)[3] | 221.00 | [8] | 62 | 229.00 | 9.59 | 5.60 | 47.80 | 9.72 | 8.00 |
| | | | | | | {28.50}[6] | {4.48}[6] | {2.36}[6] | | | | | | |
| PR-=WC-01 | Schultz Rd. (West) | 3.06 | 17.30 | 2.77 | 0.88 | 14.30 (14.50) | [8] | ND[1] ND[1] | 46.40 | 6.05 | 7.70 | 23.70 | 10.10 | 7.60 |
| | | | | | | [15.20 (14.90)[3]][6] | [5.80 (6.83)[3]][6] | [11.70 (9.54)[3]][6] | | | | | | |
| PR-=WCS-01 | East of Schultz Rd. | 3.51 | [4] | [4] | [4] | 14.30 | 3.29 | 3.38 | 22.20 | 4.76 | 10.80 | 22.70 | 9.29 | 9.00 |
| PR-=WCS-02 | West of Manor Rd. | 4.04 | [4] | [4] | [4] | 18.50 | 3.88 | 4.63 | 17.90 | 3.97 | 9.40 | 14.80 | 7.61 | 12.00 |
| PR-=WCS-03 | Manor Rd. | 4.52 | [4] | [4] | [4] | 8.18 | 2.52 | 6.62 | 14.00 | 4.02 | 14.00 | 13.60 | 8.05 | 14.00 |
| PR-=WCS-04 | West of Cranberry Bogs | 4.81 | [4] | [4] | [4] | 10.70 | 2.17 | 7.03 | 40.00 | 5.12 | 52.50 | 24.70 | 9.12 | 22.00 |
| PR-=WCS-04A | Upstream of Sandy Pond tributary | 5.20 | [4] | [4] | [4] | 6.20 | 2.2 | 4.04 | [4] | [4] | [4] | [4] | [4] | [4] |
| PR-=WCS-04B | Upstream of Cranberry Bogs tributary | 5.42 | [4] | [4] | [4] | 4.80 | 1.23 | 2.31 | [4] | [4] | [4] | [4] | [4] | [4] |
| PR-=WCS-05 | East of Cranberry Bogs | 5.96 | [4] | [4] | [4] | 3.96 | 0.83 | 0.85 | 10.50 | 4.74 | 12.8 | 9.46 | 4.09 | 3.70 |
| PR-=WCS-06 | Middle of Donahues Pond | 6.61 | [4] | [4] | [4] | 3.4 (2.0)[3] | 0.95 (0.54)[3] | 3.19 (2.89)[3] | 8.20 | 4.03 | 4.1 | 10.38 | 4.53 | 20.00 |
| PR-=WCS-07 | Downstream of Connecticut Ave | 7.07 | [4] | [4] | [4] | 4.20 | 0.84 | 2.61 | 6.60 | 2.34 | 1.4 | 7.13 | 2.70 | 3.00 |

Notes:

1. STP = Sewage Treatment Plant, ND = non-detect, detection limits: 0.1 ng/L for total mercury, 0.045ng/L for methylmercury, 1 mg/L for TSS.
2. Units: mi. - miles, deg C = degrees Celsius, mg/L = milligrams per liter, ng/L = nannograms per liter.
3. Results for duplicate samples shown in parentheses.
4. Not measured or not aapplicable.
5. Samples not able to be collected due to heavy vegetation or no flow.
6. Values shown within square brackets represent a second sampling effort conducted one week after initial sampling event
7. There was an apparent error in the reporting of TSS results collected on June 17. Results for PR-WC-04 (9.5 mg/L), and the blind duplicate of PR-WC-01 (283 mg/L) appeared to be switched; they were not similar to the results reported for PR-WC-04 (135 mg/L) on June 10 and for PR-WC-01 (11.7 mg/L). Upon request the laboratory personnel examined the archived Hg samples and confirmed that the TSS fir the sample from PR-WC-04 was much higher than for PR-WC-01. Values reported reflect this change.
8. Methylmercury samples not analyzed because holding times were exceeded; shipment was late to arrive at the laboatory. Stations were resampled on June 17.
9. Samples not collected, depth < 1.0 foot.

## Table 3-3. Comparison of Pre- and Post-Remediation Water Column Sampling Results (August Survey)

| Station ID | Station Description | Distance from STP[1,2] (mi.) | 2003 | | | 2004 | | | 2005 | | | 2006 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aug 2003 Total Mercury (ng/L) | Aug 2003 Methylmercury (ng/L) | Aug 2003 TSS (mg/L) | Aug 2004 Total Mercury (ng/L) | Aug 2004 Methylmercury (ng/L) | Aug 2004 TSS (mg/L) | Aug 2005 Total Mercury (ng/L) | Aug 2005 Methylmercury (ng/L) | Aug 2005 TSS (mg/L) | Aug 2006 Total Mercury (ng/L) | Aug 2006 Methylmercury (ng/L) | Aug 2006 TSS (mg/L) |
| Connetquot | Connetquot River Reference Station | | 2.33 | 0.51 | 3.28 | 0.856 | 0.16 | 4.32 | 3.90 | 0.43 | ND[1] | 0.930 | 0.11 | ND[1] |
| PR-WC-14 | Upstream of STP[1] | -0.05 | 131 | 16 | 2485 | [4] | [4] | [4] | [5] | [5] | [5] | [6] | [6] | [6] |
| PR-WC-13 | Upstream of STP[1] | -0.05 | 7.77 | 5.25 | 5.14 | [4] | [4] | [4] | [5] | [5] | [5] | [6] | [6] | [6] |
| PR-WC-12 | Upstream of STP[1] | -0.04 | 9.59 | 5.19 | 3.47 | [4] | [4] | [4] | [5] | [5] | [5] | [6] | [6] | [6] |
| PR-WC-11 | STP outfall[1] | 0.01 | 45.5 | 2.24 | 2.16 | [4] | [4] | [4] | 105.00 | 0.28 | 1.90 | [6] | [6] | [6] |
| PR-WC-10 | West of HmN | 0.31 | 80.4 | 3.34 | 2.16 | [4] | [4] | [4] | 81.00 | 0.54 | ND[1] | 57.00 | 1.31 | 2.70 |
| PR-WC-09 | Downstream of HmN | 0.57 | 63.5 | 3.28 | 2.73 | [4] | [4] | [4] | 81.30 | 0.69 | 1.90 | [6] | [6] | [6] |
| PR-WC-08 | South of Area B | 0.76 | 11802 | 200 | 51.05 | [4] | [4] | [4] | 161.00 | 1.33 | 52.20 | 91.00 | 2.08 | 25.20 |
| PR-WC-07 | South of Area C | 1.01 | 53.4 | 3.02 | 2.55 | [4] | [4] | [4] | [5] | [5] | [5] | 58.70 | 2.26 | 9.10 |
| PR-WC-06 | North of Area D | 1.14 | 71.2 | 4.55 | 5.6 | [4] | [4] | [4] | [5] | [5] | [5] | 1360.00 | 13.20 | 116.00 |
| PR-WC-05 | Downstream of HQ | 1.49 | 45.9 | 13.4 | 9.74 | [5] | [5] | [5] | [5] | [5] | [5] | 28.60 | 9.76 | 9.30 |
| PR-WC-04 | 2nd Downstream of HQ | 1.76 | 38.5 | 11.8 | 2.96 | [5] | [5] | [5] | [5] | [5] | [5] | [6] | [6] | [6] |
| PR-WC-03 | 3rd west of Schultz Rd. | 2.18 | 30 | 11.3 | 5.94 | 29.90 | 2.30 | 1.64 | 196.00 | 4.79 | 11.70 | 61.00 | 9.03 | 25.10 |
| PR-WC-02 | 2nd west of Schultz Rd. | 2.59 | 36.4(47.5)[3] | 16.8(18.3)[3] | 5.99(5.00)[3] | 17.10 | 3.44 | 3.77 | [5] | [5] | [5] | [6] | [6] | [6] |
| PR-WC-01 | Schultz Rd. (West) | 3.06 | 20.9 | 8.85 | 6.55 | 9.40 | 1.76 | 3.27 | 11.40 | 1.58 | 6.30 | 6.57 | 1.65 | 2.80 |
| PR-WCS-01 | East of Schultz Rd. | 3.51 | [4] | [4] | [4] | 7.71 | 1.85 | 5.33 | [5] | [5] | [5] | 6.71 | 1.37 | 5.30 |
| PR-WCS-02 | West of Manor Rd. | 4.04 | [4] | [4] | [4] | 7.97 | 1.62 | 9.59 | [5] | [5] | [5] | 6.12 | 1.55 | 5.70 |
| PR-WCS-03 | Manor Rd. | 4.52 | [4] | [4] | [4] | 35.50 | 6.02 | 40.42 | [5] | [5] | [5] | 6.28 | 1.27 | 5.70 |
| PR-WCS-04 | West of Cranberry Bogs | 4.81 | [4] | [4] | [4] | [5] | [5] | [5] | [5] | [5] | [5] | 17.50 | 1.81 | 17.60 |
| PR-WCS-05 | East of Cranberry Bogs | 5.96 | [4] | [4] | [4] | 3.76 | 0.91 | 6.70 | 5.30 | 0.78 | 9.00 | 1.66 | 0.80 | 5.50 |
| PR-WCS-06 | Middle of Donahues Pond | 6.61 | [4] | [4] | [4] | 4.30 | 1.31 | 3.22 | 1.70 | 0.74 | 6.50 | 2.76 | 1.37 | 23.00 |
| PR-WCS-07 | Downstream of Connecticut Ave | 7.07 | [4] | [4] | [4] | 3.67 | 1.19 | 2.14 | 2.50(1.30)[3] | 0.43(0.43)[1,3] | ND(ND)[1,3] | 0.93 | 0.57 | 5.00 |

Notes:
1. STP = Sewage Treatment Plant, ND = non-detect, detection limits: 0.1 ng/L for total mercury, 0.055ng/L for methylmercury, 1 mg/L for TSS.
2. Units: mi. - miles, deg C = degrees Celsius, mg/L = milligrams per liter, ng/L = nannograms per liter.
3. Results for duplicate samples shown in parentheses.
4. Not measured or not aapplicable.
5. Samples not able to be collected due to heavy vegetation or no flow.
6. Samples not collected, depth < 1.0 foot.

## Table 3-4

## Peconic River Water Quality Sampling Stations and Sampling Frequency

| | | Sampling Frequency of Water Quality Survey Relative to Methylmercury (MeHg) Water Quality Survey sampling | | | | | |
|---|---|---|---|---|---|---|---|
| **Sample ID** | **Distance Downstream of STP (miles)** | **2 weeks before** | **June MeHg[1] Sampling** | **2 weeks after** | **2 weeks before** | **August MeHg[1] Sampling** | **2 weeks after** |
| PR-WC-14 | -0.05 | | X | | | X | |
| PR-WC-13 | -0.05 | | X | | | X | |
| PR-WC-12 | -0.04 | | X | | | X | |
| PR-WC-11 | 0.01 | | X | | | X | |
| PR-WC-10 | 0.31 | [2] | X | X | X | X | X |
| PR-WC-09 | 0.57 | [2] | X | X | X | X | X |
| PR-WC-08 | 0.76 | [2] | X | X | X | X | X |
| PR-WC-07 | 1.01 | | X | | | X | |
| PR-WC-06 | 1.14 | [2] | X | X | X | X | X |
| PR-WC-05 | 1.49 | | X | | | X | |
| PR-WC-04 | 1.76 | [2] | X | X | X | X | X |
| PR-WC-03 | 2.18 | [2] | X | X | X | X | X |
| PR-WC-02 | 2.59 | | X | | | X | |
| PR-WC-01 | 3.06 | [2] | X | X | X | X | X |
| PR-WCS-01 | 3.51 | | X | | | X | |
| PR-WCS-02 | 4.04 | | X | | | X | |
| PR-WCS-03 | 4.52 | | X | | | X | |
| PR-WCS-04 | 4.81 | [2] | X | X | X | X | X |
| PR-WCS-05 | 5.96 | | X | | | X | |
| PR-WCS-06 | 6.61 | | X | | | X | |
| PR-WCS-07 | 7.07 | | X | | | X | |

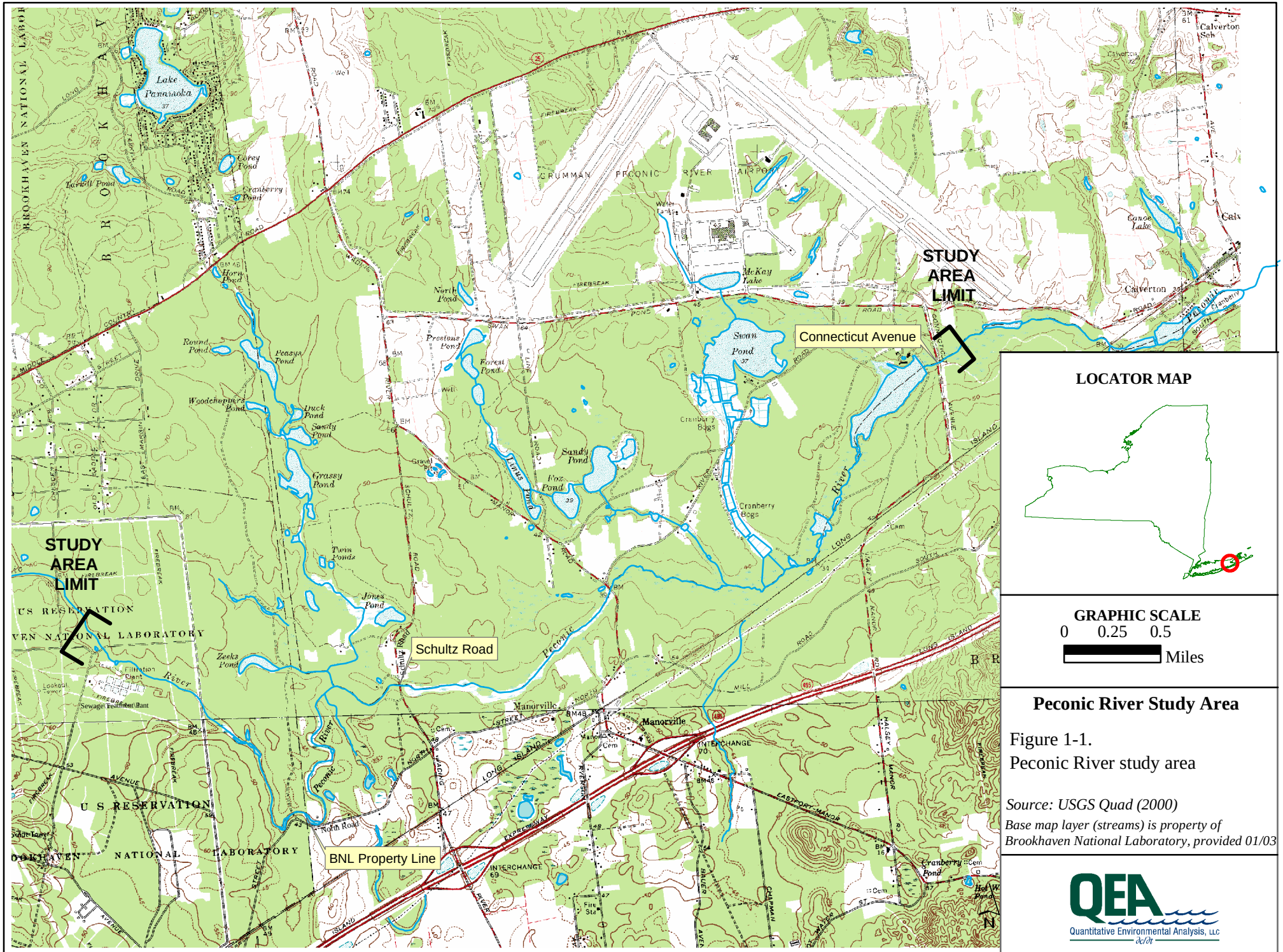
[1] MeHg is an abbreviation for methylmercury.

[2] The water quality sampling program was initiated coincident with the June 2006 methylmercury sampling round. In the future the first round of sampling wil be conducted approximately two weeks prior to the June methylmercury sampling round.

Table 3-4

Peconic River Water Quality Sampling Stations and Sampling Frequency

| Sample ID | Distance Downstream of STP (miles) | Area | Sampling Frequency relative to Methylmercury Sampling (MeHg) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2 weeks before | June MeHg Sampling | 2 weeks after | 2 weeks before | August MeHg Sampling | 2 weeks after |
| PR-WC-14 | 0.1 | _ | | X | | | X | |
| PR-WC-13 | 0.1 | _ | | X | | | X | |
| PR-WC-12 | 0.1 | _ | | X | | | X | |
| PR-WC-11 | 0 | A | | X | | | X | |
| PR-WC-10 | 0.3 | A | X | X | X | X | X | X |
| PR-WC-09 | 0.6 | B | X | X | X | X | X | X |
| PR-WC-08 | 0.8 | C | X | X | X | X | X | X |
| PR-WC-07 | 1 | C | | X | | | X | |
| PR-WC-06 | 1.1 | C | X | X | X | X | X | X |
| PR-WC-05 | 1.5 | | | X | | | X | |
| PR-WC-04 | 1.8 | D | X | X | X | X | X | X |
| PR-WC-03 | 2.2 | E | X | X | X | X | X | X |
| PR-WC-02 | 2.6 | | | X | | | X | |
| PR-WC-01 | 3.1 | P | X | X | X | X | X | X |
| PR-WCS-01 | 3.5 | | | X | | | X | |
| PR-WCS-02 | 4 | | | X | | | X | |
| PR-WCS-03 | 4.5 | | | X | | | X | |
| PR-WCS-04 | 4.8 | MR | X | X | X | X | X | X |
| PR-WCS-05 | 6 | | | X | | | X | |
| PR-WCS-06 | 6.6 | | | X | | | X | |
| PR-WCS-07 | 7.1 | | | X | | | X | |




## Peconic River Study Area

Figure 1-1.
Peconic River study area

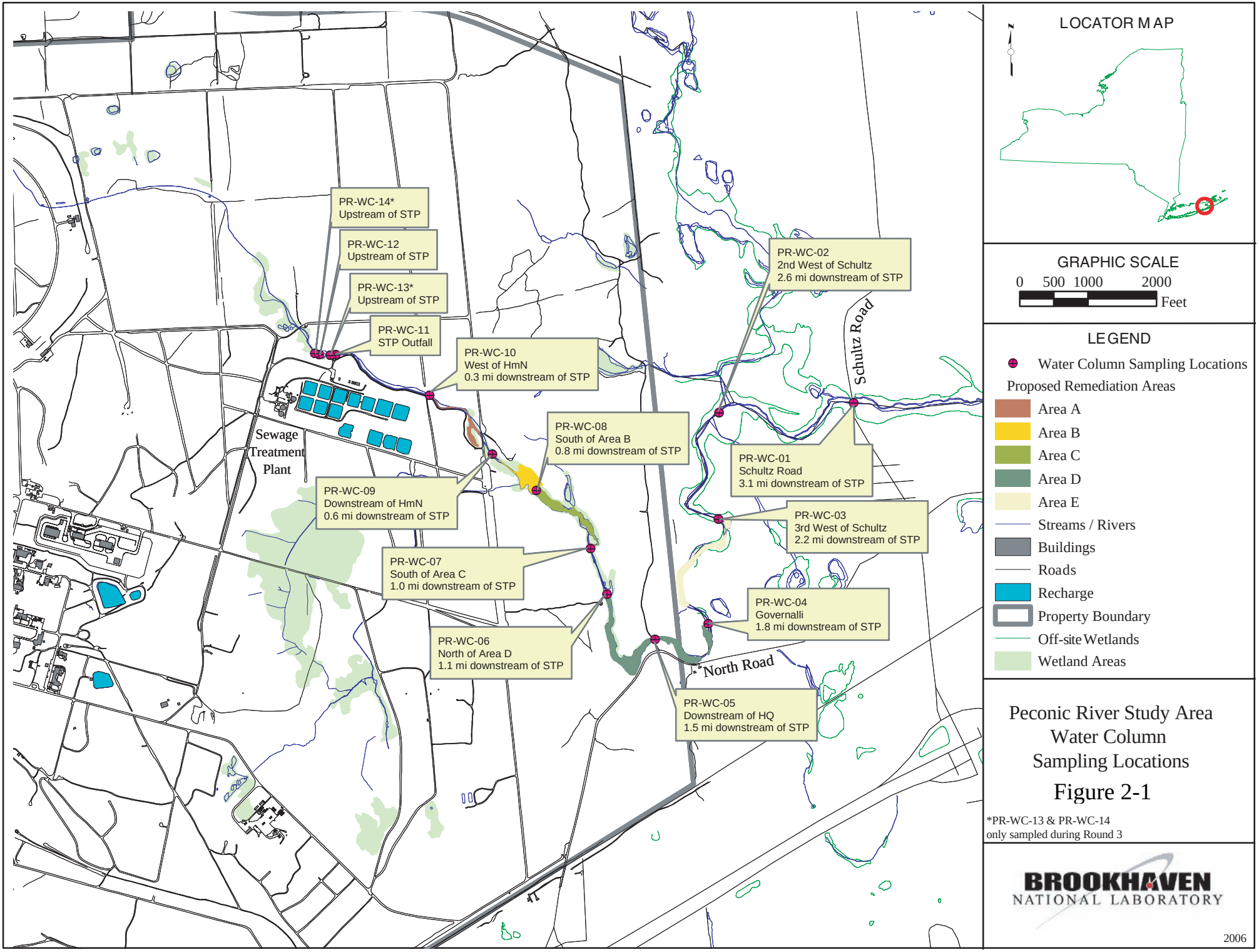
*Source: USGS Quad (2000)*

*Base map layer (streams) is property of Brookhaven National Laboratory, provided 01/03*

QEA
Quantitative Environmental Analysis, LLC

BNLpec: 110

Dec 2005




# Peconic River Study Area Water Column Sampling Locations

## Figure 2-1

*PR-WC-13 & PR-WC-14 only sampled during Round 3

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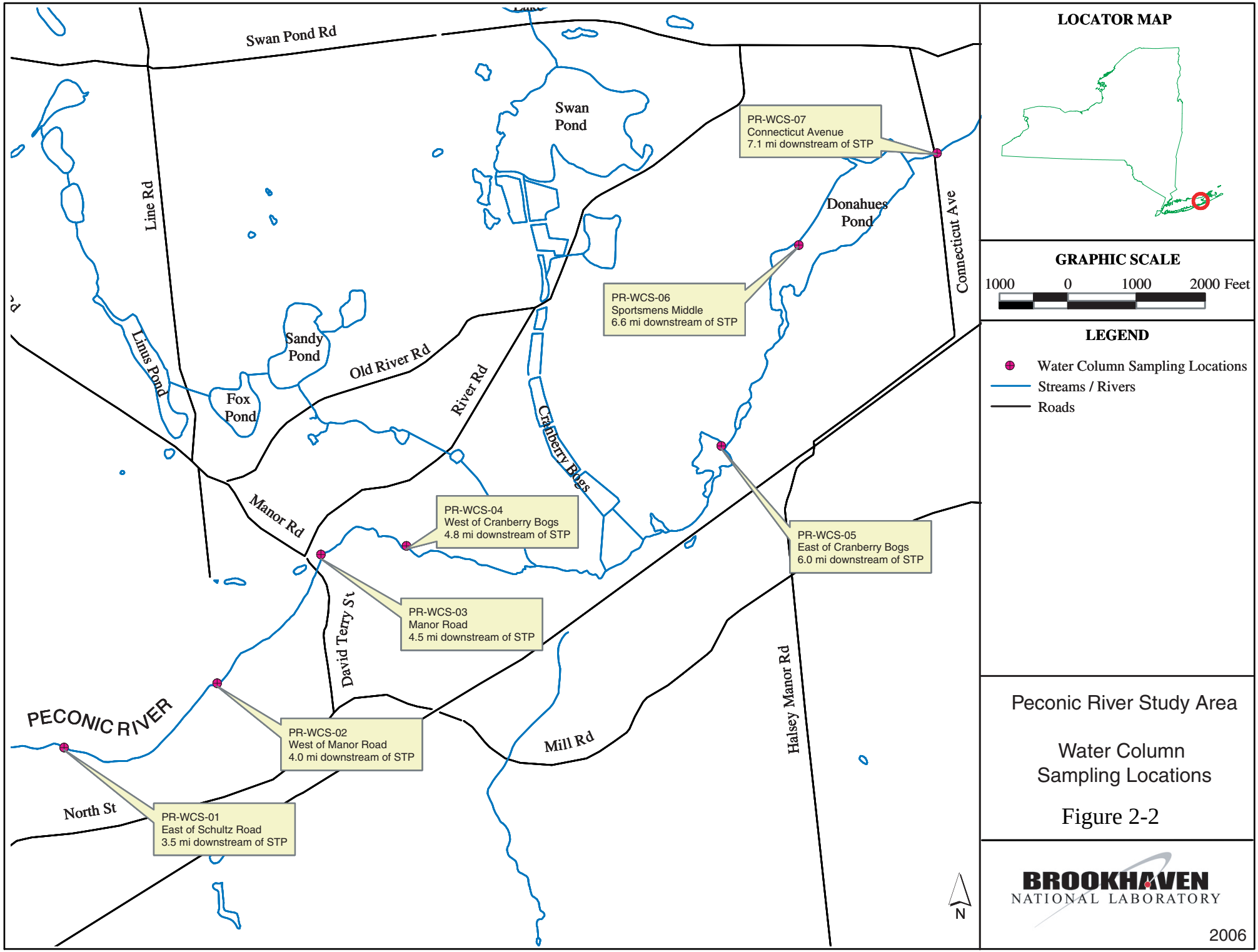
Swan Pond Rd
Swan Pond
Line Rd
Linus Pond
Sandy Pond
Fox Pond
Old River Rd
River Rd
Cranberry Bogs
Donahues Pond
Connecticut Ave
PR-WCS-07
Connecticut Avenue
7.1 mi downstream of STP
PR-WCS-06
Sportsmens Middle
6.6 mi downstream of STP
PR-WCS-05
East of Cranberry Bogs
6.0 mi downstream of STP
PR-WCS-04
West of Cranberry Bogs
4.8 mi downstream of STP
Manor Rd
PR-WCS-03
Manor Road
4.5 mi downstream of STP
David Terry St
PECONIC RIVER
PR-WCS-02
West of Manor Road
4.0 mi downstream of STP
Mill Rd
Halsey Manor Rd
North St
PR-WCS-01
East of Schultz Road
3.5 mi downstream of STP
N
LOCATOR MAP
GRAPHIC SCALE
1000 0 1000 2000 Feet
LEGEND
Water Column Sampling Locations
Streams / Rivers
Roads
Peconic River Study Area
Water Column
Sampling Locations
Figure 2-2
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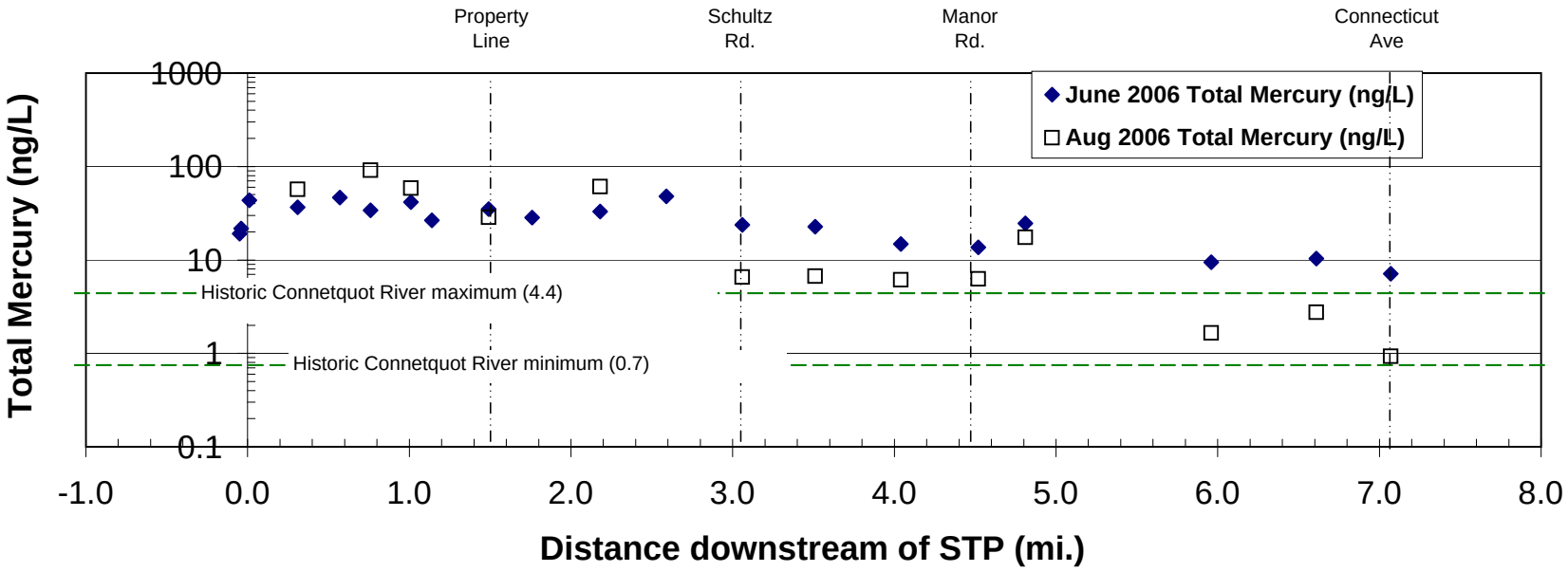
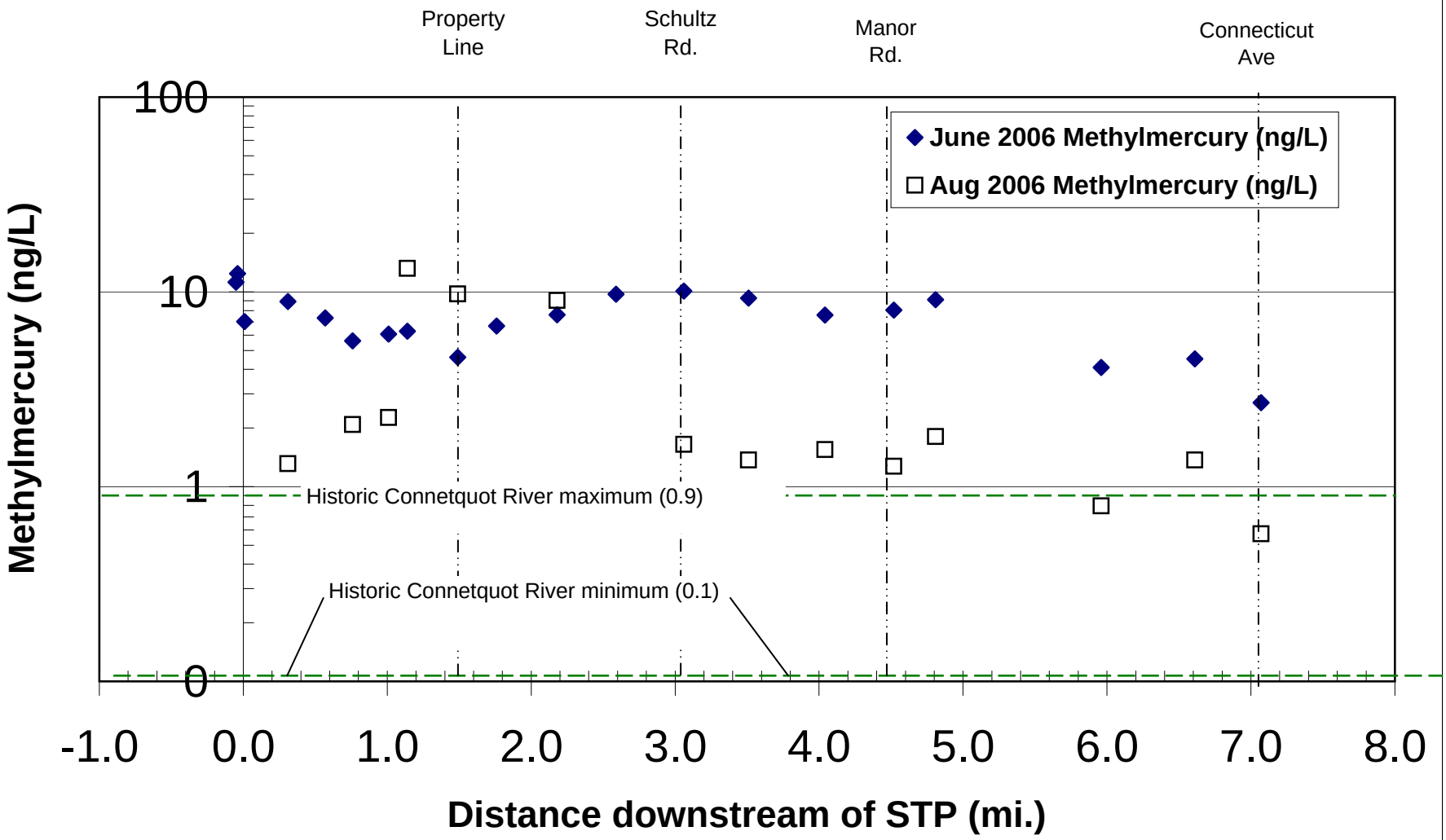
2006

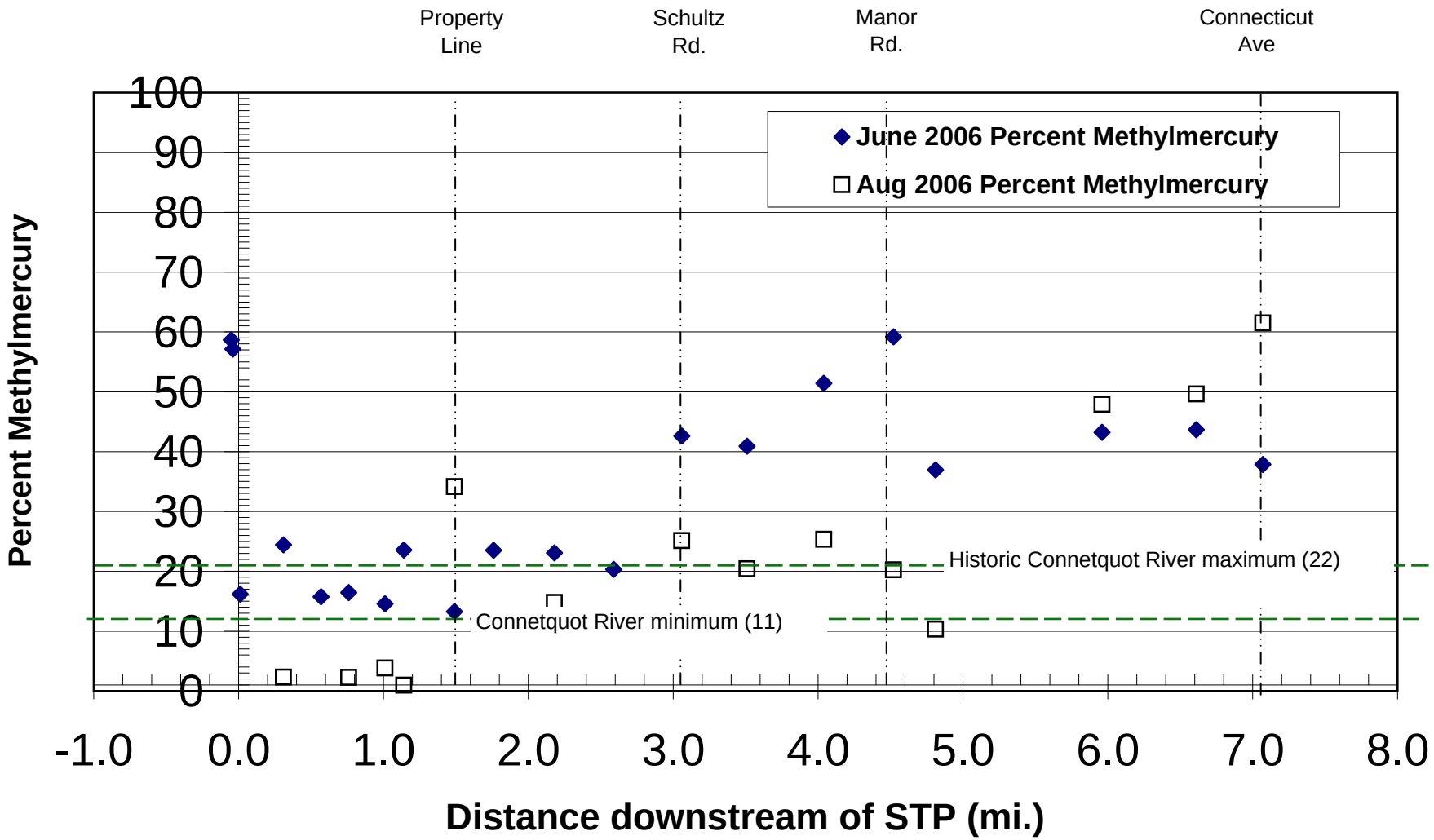
## Figure 3-1 (a) Total Mercury - June and August, 2006



# Figure 3-1 (b) Methylmercury - June and August, 2006



## Figure 3-1 (c) Percent Methylmercury - June and August, 2006



## Figure 3-1 (d) TSS - June and August, 2006