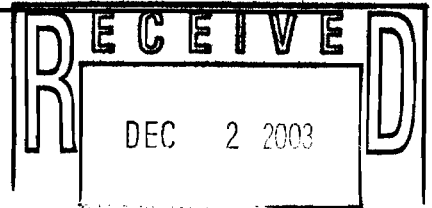


REPORT



*Annual Progress Report
January 1, 2003 – December 31, 2003*

Niagara Mohawk

A **National Grid** Company



and General Motors Corporation

**Pollution Abatement Services Superfund Site
Fourth Operable Unit
Oswego, New York**

November 2003

BBL[®]
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

***Pollution Abatement Services Superfund Site
Oswego, New York
Fourth Operable Unit***

***Annual Progress Report
Period Covered: January 1, 2003 - December 31, 2003***

Presented herein is the sixth Annual Progress Report for the fourth operable unit (OU4) at the Pollution Abatement Services (PAS) Superfund Site (the Site) located in Oswego, New York. This progress report has been prepared in accordance with the requirements set forth in Section X of the OU4 Consent Decree lodged by the Court on December 15, 1998 between the United States Environmental Protection Agency (USEPA), and Niagara Mohawk, a National Grid Company (Niagara Mohawk) and General Motors Corporation (the Settling Defendants). The activities conducted pursuant to the requirements of the OU4 Consent Decree for the year 2003 are summarized below. The previous (fifth) Annual Progress Report was submitted to the USEPA on January 30, 2003 (BBL, 2003a) and covered the period from January 1, 2002 through December 31, 2002.

In accordance with the requirements set forth in the OU4 Consent Decree and the September 1997 Record of Decision (ROD) for OU4 (USEPA, 1997), the August 1999 *PCB Long-Term Monitoring Plan* (Plan) was developed by Blasland, Bouck & Lee, Inc. (BBL) (BBL, 1999a), the USEPA-approved Supervising Contractor identified in the OU4 Consent Decree. The Plan provides a detailed description of the requirements, methods, and procedures for monitoring the polychlorinated biphenyl (PCB) levels in the sediments and biota (fish) in the creeks and wetlands adjacent to the Site, and includes the following components: the methodology for the selection of a contractor(s); the methodology for the implementation of the Plan; a Quality Assurance Project Plan; and a Health and Safety Contingency Plan. The Plan was approved by the USEPA in a July 22, 1999 letter (USEPA, 1999a).

As identified in the Plan, the monitoring activities include sampling of surficial sediments (0 to 3 inch), subsurface sediments (3 to 6 inch and 6 to 12 inch), suspended sediment (trap), and biota (fish). In the third Annual Progress Report (BBL, 2000), BBL proposed that subsurface sediment samples not be collected in the future, and that future long-term monitoring events include the continued collection of surficial (0 to 3 inch) sediment, suspended sediment (trap), and biota (fish) samples in accordance with the Plan. USEPA approved this modification to the Plan on May 30, 2001, as documented in BBL's May 31, 2001 letter to the USEPA (BBL, 2001a).

I. Actions Taken Toward Compliance with the Consent Decree

During this reporting period, the fifth round of annual PCB monitoring activities was completed. The monitoring activities were conducted in accordance with the USEPA-approved Plan, as modified in May 2001. The monitoring activities conducted during the fifth round of PCB annual monitoring activities included collecting surficial (0 to 3 inch) sediment, suspended sediment (trap), and biota (fish) samples in the five specified locations in White Creek and Wine Creek. A detailed description of the monitoring activities completed during the fifth year of the annual PCB monitoring program and a summary of results obtained are presented in Attachment 1. The references cited herein are also listed in Attachment 1.

II. Analytical Results and Data Generated

The analytical results/data that have been generated during this reporting period, and in association with the OU4 Consent Decree, are solely related to completing the fifth year of annual monitoring identified in the Plan. As previously stated, the monitoring activities included sediment and biota sampling. Laboratory analysis of sediment included PCBs and total organic carbon (TOC), and laboratory analysis of biota included PCBs and percent lipids. A summary of that data is presented in Attachment 1. Two

complete copies of the analytical data and validated data reports associated with the fifth year of annual monitoring were submitted to the USEPA (Ms. Patricia Simmons Pierre, USEPA Project Manager) on October 17, 2003 (BBL, 2003b).

III. Plans and Reports and other Deliverables Completed or Submitted

During this reporting period, the two items listed below were submitted by BBL (on behalf of the Settling Defendants) to the USEPA:

- October 17, 2003 submittal providing two complete copies of the analytical data and validated data reports associated with the fifth year of annual PCB monitoring; and
- November 2003 submittal providing the *Five-Year Data Review Report* (BBL, 2003c), as requested from Mr. Joel Singerman of USEPA.

IV. Planned Activities for 2004

In accordance with the Plan and the USEPA-approved modification to that Plan, the sixth annual sediment and biota monitoring event will be conducted during the late spring/early summer (i.e., May through July) 2004. The sediment and biota sampling activities for the year 2004 will include collecting and analyzing surficial (0 to 3 inch) sediment deposits, suspended sediment (trap), and biota samples from the five specified locations in White Creek and Wine Creek. In accordance with Paragraph 20 of the OU4 Consent Decree, the Settling Defendants will notify the USEPA not less than 21 days in advance of the annual monitoring event to be conducted during the year 2004.

The reporting requirements for the sixth annual monitoring event to be followed by the Settling Defendants will be consistent with those identified in the Plan, and the USEPA-approved modification to the schedule for submitting the annual progress reports identified in a November 23, 1999 letter to Niagara Mohawk from the USEPA (USEPA, 1999b). Accordingly, that annual progress report will be submitted no later than 90 days from the date on which the sediment traps are pulled from their locations at the conclusion of the sixth annual monitoring event.

V. Delays Encountered or Anticipated

No delays were encountered during 2003 and no delays are anticipated during 2004.

VI. Modifications to Plans or Schedules

There were no modifications to the Plan and/or associated schedules during 2003.

VII. Actions Taken in Support of the Community Relations Plan

In accordance with the requirements of the OU4 Consent Decree, the Settling Defendants will, upon notice by the USEPA, participate in the Community Relations Plan developed by the USEPA. To date, the USEPA has not requested any participation by the Settling Defendants. Accordingly, no actions have been taken by the Settling Defendants in support of the USEPA's Community Relations Plan.

Attachment 1

PCB Long-Term Monitoring Data Report

***Pollution Abatement Services Superfund Site
Oswego, New York
Fourth Operable Unit***

***Annual Progress Report
Period Covered: January 1, 2003 - December 31, 2003***

Attachment 1 - PCB Long-Term Monitoring Data Report

This attachment provides a summary of the polychlorinated biphenyl (PCB) long-term monitoring data collected in 2003 at the Pollution Abatement Services (PAS) Superfund Site (the Site) located in Oswego, New York. Section 1 provides an introduction. Section 2 presents an overview of the PCB long-term monitoring activities performed at the Site. Section 3 summarizes the PCB long-term monitoring activities performed in 2003. Section 4 summarizes the results of the 2003 monitoring. Section 5 contains a list of references cited in this document.

An evaluation of the first five years of PCB long-term monitoring data, including the 2003 data, is provided in the *Five-Year Data Review Report* (BBL, 2003c).

1. Introduction

This attachment to the sixth *Annual Progress Report* details the fifth year of annual monitoring data collected under the United States Environmental Protection Agency (USEPA)-approved *PCB Long-Term Monitoring Plan* (Plan) for the fourth operable unit (OU4) of the PAS Site [Blasland, Bouck & Lee, Inc. (BBL), 1999a] and the USEPA-approved modification to that Plan (BBL, 2001a). The annual monitoring described in the Plan is in response to the Consent Decree lodged by the Court on December 15, 1998 (USEPA, 1998), and the September 30, 1997 *Record of Decision* (ROD) for OU4 (USEPA, 1997). The ROD presents the remedial action selected by the USEPA to address the PCBs detected in the sediments of White and Wine Creeks and the adjacent wetlands. The USEPA-selected remedy presented in the OU4 ROD is long-term annual monitoring of PCB levels in sediments and fish in White and Wine Creeks and the adjacent wetlands.

As documented in the PAS OU4 Consent Decree (USEPA, 1998), the 1996 Phase 2 Supplemental Pre-Remedial Design Study (SPRDS) concluded that although the Site was a source of PCBs before the construction of the containment facility in 1986, the Site is not a present source of PCBs for sediments in White and Wine Creeks or the adjacent wetlands, and that other potential upstream sources of PCBs exist. Additionally, previous PCB sediment monitoring data, collected prior to 1996, indicate that the associated risk levels were relatively low and that there had been an overall decline in PCB concentrations in the creeks (USEPA, 1998).

2. Overview of the PCB Long-Term Monitoring Activities

The PCB long-term monitoring activities for the Site identified in the Plan include collecting surficial sediment (0 to 3 inch), subsurface sediment (3 to 6 inch and 6 to 12 inch), suspended sediment (trap), and biota (fish) samples. In the third *Annual Progress Report* (BBL, 2000), BBL proposed that subsurface sediment samples not be collected in the future, and that future long-term monitoring events include the continued collection of surficial (0 to 3 inch) sediment, suspended sediment (trap), and biota (fish) samples in accordance with the Plan. USEPA

approved this modification to the Plan on May 30, 2001 (BBL, 2001a). The results of the first four years of the long-term monitoring program, together with the relevant conclusions, were presented to the USEPA in the previous *Annual Progress Reports* (BBL, 1999b; BBL, 2000; BBL, 2001b; BBL, 2003a). The data and conclusions presented in these reports are summarized below.

- Surficial sediment PCB concentrations in White and Wine Creeks were low (and typically non-detect). Maximum PCB concentrations were 0.17 milligrams per kilogram (mg/kg) in 1999, 0.015 mg/kg in 2000, 1.8 mg/kg in 2001, and 3.1 mg/kg in 2002.
- PCB concentrations were also typically low in the suspended sediment (trap) samples. Maximum PCB concentrations were 1.2 mg/kg in 1999, 1.1 mg/kg in 2000, 1.4 mg/kg in 2001, and 0.96 mg/kg in 2002.
- PCBs were also detected in fish tissue samples collected during the first four rounds of the long-term monitoring program. Maximum PCB concentrations were 0.52 mg/kg in 1999, 3.9 mg/kg in 2000, 3.4 mg/kg in 2001, and 1.7 mg/kg in 2002.

The results of the first four years of the long-term monitoring program confirmed the USEPA (1998) conclusion that sediment PCB concentrations had decreased since the previous rounds of sampling that were conducted prior to 1996.

3. 2003 PCB Long-Term Monitoring Activities

The monitoring activities conducted by BBL during the fifth annual (2003) PCB long-term monitoring event included:

- Sampling of surficial (0- to 3-inch) sediments in White and Wine Creeks and the adjacent wetland areas, at locations upstream, adjacent to, and downstream of the Site;
- Installing and sampling of sediment traps upstream, adjacent to, and downstream of the Site; and
- Biota sampling of yearling fish.

As identified in the OU4 ROD and Consent Decree, data generated from the PCB long-term monitoring program is used to monitor PCB concentrations in sediments and biota of White and Wine Creeks and the adjacent wetlands.

3.1 Methodology

This section identifies the sampling locations and describes the methods that were used for the surficial sediment, sediment trap, and biota sampling, and the laboratory analyses. The methods employed followed the procedures outlined in the Plan.

3.1.1 Sample Locations

The Plan identified the collection of co-located sediment, sediment trap, and biota samples from five locations in White and Wine Creeks and the adjacent wetlands. The sample locations were identified by the 8-foot sections of iron pipe which were driven into the bank during the 1999

sampling round. These locations were determined based on the results of a probing exercise conducted by BBL in 1999 to locate prime sediment depositional areas, and have been sampled during each of the five annual sampling events. These locations (shown on Figure 1) are identified below.

- Location 1: Upstream (east) of the Site, in White Creek, near historical sample location SS-1.
- Location 2: Adjacent to and northeast of the Site, in White Creek, in the vicinity of Phase 2 SPRDS sample location White 11A.
- Location 3: Adjacent to and north of the Site, in White Creek, approximately 50 feet downstream of historical sample location SS-3.
- Location 4: North of the Site in White Creek, in the vicinity of Phase 2 SPRDS sample location White 12B.
- Location 5: Downstream (northwest) of the Site, and downstream of the confluence of White and Wine Creeks, in the vicinity of historical sample location SS-4A.

3.1.2 Sediment Sampling

Sediment sampling was conducted on May 29, 2003 by BBL. Mr. John Strang, a representative from the New York State Department of Environmental Conservation (NYSDEC), provided oversight during the sediment sampling. Surficial sediment samples were collected at each of the aforementioned locations from 0 to 3 inches using a stainless steel corer. At each sample location, the corer was pushed into the sediment, and slowly pulled out. The top three inches of the sediment cores were extracted from the stainless steel tube onto an aluminum pan using a brass push rod. The sediment samples were homogenized, and placed in the appropriate sampling jars for shipment to the laboratory, in accordance with procedures identified in the Plan.

3.1.3 Sediment Traps

Sediment traps were placed by BBL at each of the five sediment sampling locations described above on June 3, 2003. The sediment traps consisted of pre-cleaned sample jars placed in stainless steel pans. The traps were monitored periodically by BBL for the collection of sediment deposition. Sediment samples from the traps were retrieved by BBL from all locations on July 17, 2003, and placed in the appropriate sampling jars for shipment to the laboratory, in accordance with the procedures identified in the Plan.

3.1.4 Biota Sampling

Electrofishing of White and Wine Creeks was conducted on May 29 and June 3, 2003 by BBL. Locations 3, 4, and 5 were sampled on May 29, 2003, and Locations 1 and 2 were sampled on June 3, 2003. Fallen trees that had previously hindered sampling at Locations 1 and 2 were cleared on June 3, 2003, and these locations were sampled later that day. Samples from Locations 1 and 2 were, however, mistakenly labeled on the chains-of-custody as being collected on May 29, 2003. Mr. John Strang (NYSDEC) provided oversight during the May 29 biota sampling, but was not present during the June 3 biota sampling due to scheduling conflicts. The objective of the electrofishing, as identified in the Plan, was to collect three composite fish samples from each location. The target species were minnows (e.g., creek chubs, fathead

minnows, bluntnose minnows) and/or sticklebacks. Three complete samples of yearling-size creek chubs were collected from the most downstream location (Location 5, in Wine Creek). Various combinations of three-spine sticklebacks, brook sticklebacks, and creek chubs were collected from the four locations in White Creek.

The biota sampling was conducted using a backpack electrofishing unit. Following collection, the appropriate target fish were placed in labeled Ziploc®-type bags, and stored on ice prior to sample processing. Sample processing included dividing the fish into three composite samples per location. Individual fish lengths, numbers of individuals per sample, and total sample weight were recorded. The samples were then wrapped and shipped to the analytical laboratory, in accordance with the procedures detailed in the Plan.

3.1.5 Laboratory Analyses

Laboratory analyses of sediments included PCBs and total organic carbon (TOC), in accordance with the requirements set forth in the Plan. The sediment analyses were performed by Buck Laboratories (Cortland, New York). The sediment and sediment trap samples were analyzed for PCBs using USEPA SW-846 Method 8082 (USEPA, 1986), as referenced in the current NYSDEC Analytical Services Protocol (ASP), and for TOC using USEPA Region 2's Lloyd Kahn Method (USEPA, 1988). The biota samples were analyzed by EnChem Inc. (Green Bay, Wisconsin) for PCBs using USEPA SW-846 Method 8082, as referenced in the current NYSDEC ASP, and for percent lipids using standard gravimetric techniques. As specified in the OU4 Consent Decree (Paragraph 21), two copies of the validated PCB analytical results, as well as TOC and percent lipids data, were submitted to the USEPA with an October 17, 2003 letter to Ms. Patricia Simmons Pierre, Project Manager (BBL, 2003b).

3.2 2003 Data Results

This section presents the results obtained during the fifth year of the long-term PCB monitoring program. The results of the surficial sediment, sediment trap, and biota sampling activities are detailed below. In addition, a preliminary evaluation of potential ecological affects is also presented.

3.2.1 Sediment Sampling Results

Analytical results for surficial sediment samples from the fifth year of the PCB long-term monitoring program are presented in Table 1 and shown on Figure 1. PCBs were detected in four of the five surficial sediment samples at concentrations up to 0.45 mg/kg (Location 4). PCBs were not detected at a concentration exceeding the associated laboratory quantitation limits in the surficial sediment sample collected from upstream Location 1 (PAS-SS-101). Surficial sediment TOC concentrations ranged from approximately 0.4% (PAS-SS-101) to 3.3% (PAS-SS-401).

3.2.2 Sediment Trap Sampling Results

Analytical results for sediment trap samples from the fifth year of the PCB long-term monitoring program are presented in Table 2 and shown on Figure 1. PCBs were detected in four of the five sediment trap samples, at concentrations ranging from an estimated 0.059 mg/kg (PAS-ST-301) to 0.32 mg/kg (PAS-ST-201 and PAS-ST-401). PCBs were not detected at a concentration exceeding the associated laboratory quantitation limits from the trap sample collected from

upstream Location 1 (PAS-ST-101). Sediment trap TOC concentrations ranged from approximately 2.1% (PAS-ST-201) to 7.0% (PAS-ST-401).

3.2.3 Biota Sampling Results

Analytical results for biota samples from the fifth year of the PCB long-term monitoring program are presented in Table 3 and shown on Figure 2. PCBs were detected in each of the biota samples. PCB concentrations were lowest for samples collected from upstream Location 1 (0.098 to 0.26 mg/kg), and highest for samples collected from Locations 4 and 5 (0.25 to 2.0 mg/kg). The arithmetic mean for all of the samples collected in 2003 is 0.66 mg/kg. Lipid content was higher for creek chubs (6.27% to 8.06%) than for sticklebacks (0.88% to 5.73%).

3.2.4 Discussion

The fifth year (2003) of the annual PCB long-term monitoring program has provided data that are useful for evaluating current conditions within White and Wine Creeks. These data are consistent with the previous four rounds of monitoring data and are relatively low. These data also suggest that the PCB concentrations in the sediment trap samples vary depending on the location. Consistent with previous data, PCBs were not detected in surficial sediment and sediment trap samples from the upstream location. Although PCBs are detected in resident fish, the PCB concentrations in the 2003 samples are lower than previously detected levels. The *Five-Year Data Review Report* discusses the five years of PCB long-term monitoring data in detail.

One objective of the long-term monitoring program, as specified in the OU4 Consent Decree, is to periodically evaluate potential ecological risks. Previously, a quantitative evaluation of ecological risks was presented in Appendix B of the *Focused Feasibility Study* (ENVIRON, 1997). According to the food web model used in the ecological risk assessment, an assumed fish total PCB concentration of 1.0 mg/kg resulted in hazard quotients (HQs) of 0.82 for mink and 0.67 for green heron, and an assumed fish total PCB concentration of 2.0 mg/kg resulted in HQs of 1.70 for mink and 1.39 for green heron. From a risk perspective, HQ values less than 1 represent minimal ecological risk, HQ values between 1 and 10 are considered to represent a level of risk that potentially may be manifested as effects on some individual organisms, and HQ values greater than 10 may be indicative of potential risk at the population level.

All but one of the 2003 fish PCB concentrations are below 2.0 mg/kg (sample PAS-BS-514 from Location 5 had a concentration of 2.0 mg/kg) (Table 3). Using the assumptions presented by ENVIRON in its risk assessment that was included in the *Focused Feasibility Study*, the arithmetic mean PCB concentration (0.66 mg/kg) of the 2003 fish samples would result in HQ values less than those generated using an assumed fish PCB concentration of 1.0 mg/kg. Given the fact that the HQ values based on arithmetic mean of the 2003 data would be less than 1, it is unlikely that population-level ecological effects are occurring at the Site.

4. Summary

In 2003, surficial sediment, suspended sediment, and biota were collected as part of the PCB long-term monitoring program for OU4 of the Site. The data collected in 2003 indicate the following:

- PCBs (maximum concentration of 0.45 mg/kg) were detected in four out of five surficial sediment samples from White and Wine Creeks, and the concentrations are lower than those

detected as part of the 1996 Phase 2 SPRDS activities. PCBs were not detected in the surficial sediment sample from upstream Location 1.

- PCBs (maximum concentration of 0.32 mg/kg) were detected in four out of five sediment trap samples. PCBs were not detected in the sediment trap sample from upstream Location 1.
- PCBs were detected in fish samples from all five locations, at concentrations equal to or less than 2.0 mg/kg and with an arithmetic mean PCB concentration of 0.66 mg/kg. The upstream location had the lowest PCB concentrations.
- Based on the results of a previous site-specific ecological risk assessment (ENVIRON, 1997), fish PCB concentrations in White and Wine Creeks do not represent a significant ecological risk because the HQ value would be less than 1 based on the 2003 data.

According to the Plan and the USEPA-approved modification to that Plan, the schedule for monitoring activities in the year 2004 involves collecting another round of sediment (surficial only), biota, and sediment trap samples. Results of the future monitoring rounds along with the existing historical data and the results of the five previous rounds of sampling will be used to 1) monitor PCB concentrations in sediments and biota of White and Wine Creeks and the adjacent wetlands; and 2) confirm that PCB concentrations continue to decline over time.

5. References

Blasland, Bouck & Lee, Inc. (BBL). 1999a. *PCB Long-Term Monitoring Plan*. August 1999. Syracuse, NY.

BBL. 1999b. *Annual Progress Report, Period Covered: April 17, 1999 - December 31, 1999*. Letter from M. Cathy Geraci of BBL to the U.S. Environmental Protection Agency (USEPA) Chief, Central New York Remediation Section. December 20, 1999.

BBL. 2000. *Annual Progress Report, Period Covered: January 1, 2000 - December 31, 2000*. Letter from M. Cathy Geraci of BBL to the USEPA Chief, Central New York Remediation Section. December 1, 2000.

BBL. 2001a. Letter from M. Cathy Geraci of BBL to Patricia Simmons of the USEPA. May 31, 2001.

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ENVIRON. 1997. *Final Focused Feasibility Study for PCB-Impacted Sediments in the Vicinity of the PAS Superfund Site, Oswego, New York*. Arlington, VA. August 20, 1997.

USEPA. 1986. *Test Methods for Evaluating Solid Waste*. SW-846. Third Edition. Office of Solid Waste and Emergency Response, Washington, DC. November 1986.

USEPA. 1988. *Determination of Total Organic Carbon in Sediment (Lloyd Kahn Method)*. USEPA Region 2, Environmental Services Division. Edison, NJ. July 27, 1988.

USEPA. 1997. *Record of Decision - Operable Unit 4 - Pollution Abatement Services, Oswego, New York*. USEPA Region 2. New York, NY. September 1997.

USEPA. 1998. *Pollution Abatement Services Superfund Site Operable Unit 4 Consent Decree*. USEPA Region 2. New York, NY. December 15, 1998.

USEPA. 1999a. Letter from Patricia Simmons of USEPA to M. Cathy Geraci of BBL approving the *PCB Long-Term Monitoring Plan*. July 22, 1999.

USEPA. 1999b. Letter from Carol Berns of USEPA to William Weiss, Esq., of Niagara Mohawk regarding annual report submittal schedule. November 23, 1999.

Tables

Table 1
Pollution Abatement Services Superfund Site
Operable Unit 4
Oswego, New York
PCB Long-Term Monitoring Program Report

Surficial Sediment Sample Results for PCBs and TOC (2003)

Location	Sample Identification	Total PCB Concentration (mg/kg)	TOC (mg/kg)
1	PAS-SS-101	ND(0.044)	4,010
2	PAS-SS-201	0.072	27,800
3	PAS-SS-301	0.040 J	6,310
4	PAS-SS-401	0.45	32,500
5	PAS-SS-501	0.21 J [0.047 J]	12,800 [10,700]

Notes:

1. Samples were collected by Blasland, Bouck & Lee, Inc. on May 29, 2003.
2. Samples were analyzed for PCBs using the USEPA SW-846 Method 8082 and for total organic carbon (TOC) using USEPA Region 2's Lloyd Kahn Method.
3. ND = Not detected. Each PCB Aroclor was not detected above the laboratory quantitation limit shown in parentheses.
4. Duplicate results in brackets.
5. J = The compound was positively identified; however, the associated numerical value is an estimated concentration only.
6. All samples collected from the 0- to 3-inch interval.
7. Total PCB concentrations represent total Aroclors.

Table 2
Pollution Abatement Services Superfund Site
Operable Unit 4
Oswego, New York
PCB Long-Term Monitoring Program Report

Sediment Trap Sample Results for PCBs and TOC (2003)

Location	Sample Identification	Total PCB Concentration (mg/kg)	TOC (mg/kg)
1	PAS-ST-101	ND (0.14)	30,600
2	PAS-ST-201	0.32	21,000
3	PAS-ST-301	0.059 J	27,700
4	PAS-ST-401	0.32 J	69,600
5	PAS-ST-501	0.25 J [0.33]	40,100 [45,600]

Notes:

1. Sediment traps were placed by Blasland, Bouck & Lee, Inc. on June 3, 2003, and trap sediment samples were collected on July 17, 2003.
2. Samples were analyzed for PCBs using the USEPA SW-846 Method 8082 and for total organic carbon (TOC) using USEPA Region 2's Lloyd Kahn Method.
3. ND = Not detected. Each PCB Aroclor was not detected above the laboratory quantitation limit shown in parentheses.
4. Duplicate results in brackets.
5. J = The compound was positively identified; however, the associated numerical value is an estimated concentration only.
6. Total PCB concentrations represent total Aroclors

Table 3

**Pollution Abatement Services Superfund Site
Operable Unit 4
Oswego, New York
PCB Long-Term Monitoring Program Report**

Biota Sample Results for PCBs and Percent Lipids (2003)

Location	Sample Identification	Species	No. of Individuals per Sample	Length Range (cm)	Total Sample Weight (g)	Lipid (%)	Total PCB Concentration (mg/kg)
1	PAS-BS-113	Brook Stickleback	13	4.8 - 5.1	13.6	0.92	0.098
	PAS-BS-114	Three-Spine Stickleback	20	5.1 - 7.1	36.1	5.46	0.26
	PAS-BS-115	Three-Spine Stickleback	18	5.2 - 7.4	32.2	5.73	0.17
2	PAS-BS-210	Brook Stickleback	9	4.7 - 5.1	11.3	0.88	0.39
	PAS-BS-211	Brook Stickleback	27	3.9 - 5.5	28.2	1.29	0.30
	PAS-BS-212	Three-Spine Stickleback	11	5.5 - 6.1	17.5	4.21	0.46
3	PAS-BS-310	Brook Stickleback	10	4.2 - 5.0	11.2	1.77	0.41
	PAS-BS-311	Brook Stickleback	12	3.2 - 5.0	10.3	2.56	0.66
	PAS-BS-312	Brook Stickleback	8	4.4 - 5.3	10.4	1.73	0.72
4	PAS-BS-410	Creek Chub	14	4.0 - 5.1	15.4	6.88	0.95
	PAS-BS-411	Creek Chub	7	5.0 - 5.9	13.0	8.06	1.2
	PAS-BS-412	Three-Spine Stickleback	10	5.2 - 6.9	22.3	3.00	0.25
5	PAS-BS-513	Creek Chub	6	5.3 - 6.5	14.6	6.27	0.70
	PAS-BS-514	Creek Chub	8	7.4 - 8.4	50.5	6.70	2.0
	PAS-BS-515	Creek Chub	11	7.3 - 8.4	63.8	7.34	1.3
Arithmetic Mean							0.66

Notes:

1. Samples were collected by Blasland, Bouck & Lee, Inc. on May 29, 2003 (Locations 3, 4, and 5) and June 3, 2003 (Locations 1 and 2).
2. Samples were analyzed for PCBs using the USEPA SW-846 Method 8082 and for percent lipids using gravimetric techniques.
3. Total PCB concentrations represent total Aroclors.

Figures

LEGEND

- APPROXIMATE LONG-TERM MONITORING FISH SAMPLING LOCATION
- APPROXIMATE LONG-TERM MONITORING SEDIMENT SAMPLING LOCATION
- APPROXIMATE PREVIOUS SEDIMENT SAMPLING LOCATION
- APPROXIMATE STREAM GAUGE LOCATION
- APPROXIMATE SPRDS PHASE II SEDIMENT SAMPLING LOCATION
- FENCE (SITE BOUNDARY)
- SLURRY WALL
- APPROXIMATE LOCATION OF SUBSURFACE LEACHATE COLLECTION TRENCH
- LAND AREAS SUBJECT TO FREQUENT, SHALLOW INUNDATION
- WETLAND AREAS DELINEATED BY MENZIE-CURA & ASSOCIATES, INC. (AUGUST 1992)
- REACH BOUNDARY
- DIRECTION OF WATER FLOW

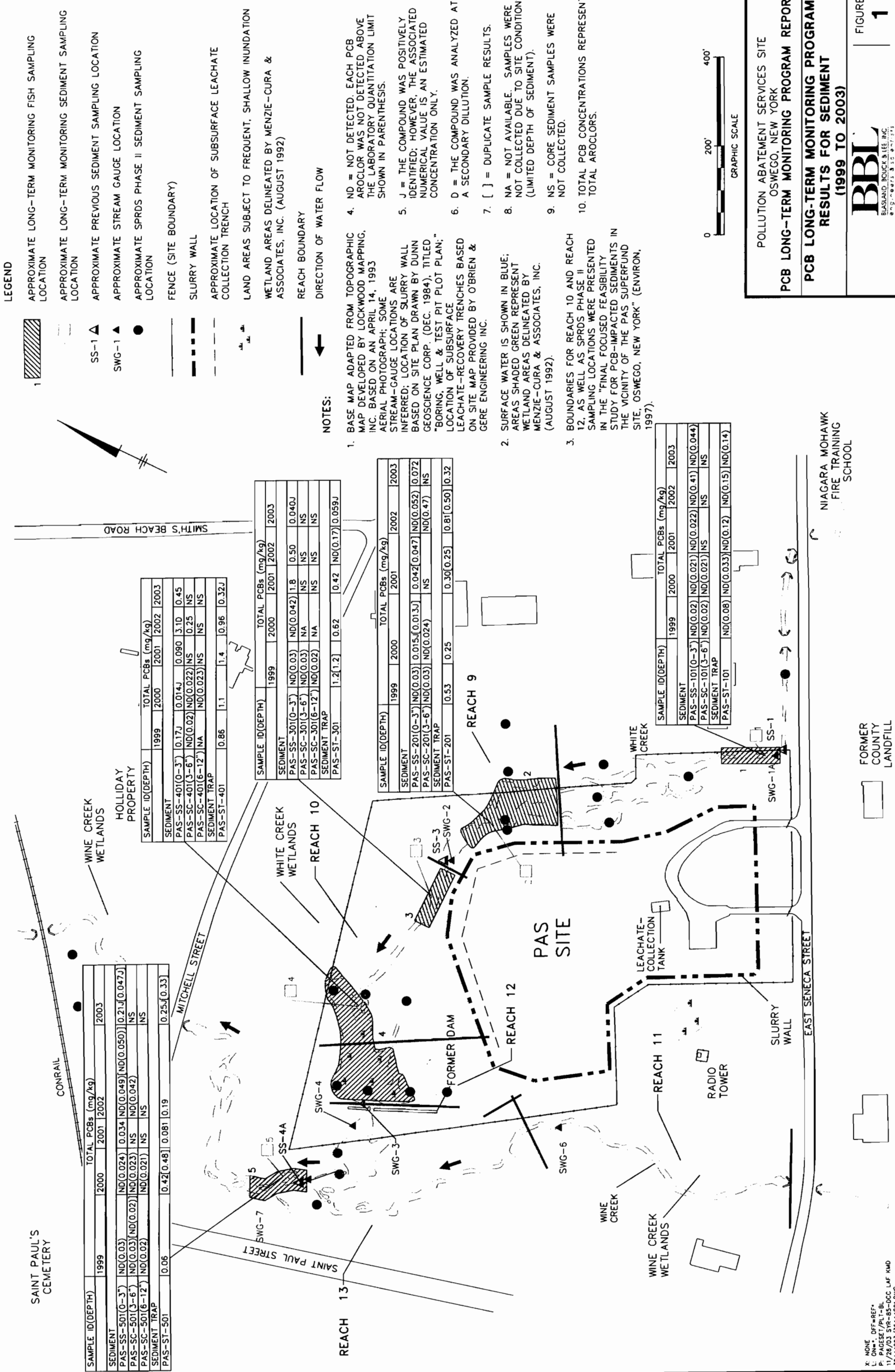
SAMPLE ID(DEPTH)	1999	2000	2001	2002	2003
TOTAL PCBs (mg/kg)					
SEDIMENT					
PAS-SS-501(0-3")	ND(0.03)	ND(0.024)	0.034	ND(0.049)	ND(0.050)
PAS-SC-501(3-6")	ND(0.03)	ND(0.023)	NS	ND(0.042)	NS
PAS-SC-501(6-12")	ND(0.02)	ND(0.021)	NS	NS	NS
SEDIMENT TRAP					
PAS-ST-501	0.06	0.42	0.48	0.081	0.19
					0.25
					0.33

SAMPLE ID(DEPTH)	1999	2000	2001	2002	2003
TOTAL PCBs (mg/kg)					
SEDIMENT					
PAS-SS-401(0-3")	ND(0.17)	0.014	0.090	3.10	0.45
PAS-SC-401(3-6")	ND(0.02)	ND(0.022)	NS	0.25	NS
PAS-SC-401(6-12")	NA	ND(0.023)	NS	NS	NS
SEDIMENT TRAP					
PAS-ST-401	0.86	1.1	1.4	0.96	0.32

SAMPLE ID(DEPTH)	1999	2000	2001	2002	2003
TOTAL PCBs (mg/kg)					
SEDIMENT					
PAS-SS-301(0-3")	ND(0.03)	ND(0.042)	1.8	0.50	0.040
PAS-SC-301(3-6")	ND(0.03)	NA	NS	NS	NS
PAS-SC-301(6-12")	ND(0.02)	NA	NS	NS	NS
SEDIMENT TRAP					
PAS-ST-301	1.2	1.2	0.62	0.42	ND(0.17)
					0.059

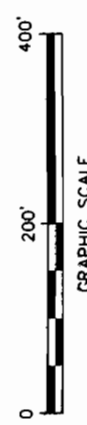
SAMPLE ID(DEPTH)	1999	2000	2001	2002	2003
TOTAL PCBs (mg/kg)					
SEDIMENT					
PAS-SS-201(0-3")	ND(0.03)	0.015	0.013	0.042	0.072
PAS-SC-201(3-6")	ND(0.03)	ND(0.024)	NS	ND(0.47)	NS
SEDIMENT TRAP					
PAS-ST-201	0.53	0.25	0.30	0.25	0.81
					0.50
					0.32

SAMPLE ID(DEPTH)	1999	2000	2001	2002	2003
TOTAL PCBs (mg/kg)					
SEDIMENT					
PAS-SS-101(0-3")	ND(0.02)	ND(0.02)	ND(0.021)	ND(0.022)	ND(0.41)
PAS-SC-101(3-6")	ND(0.02)	ND(0.02)	ND(0.021)	NS	NS
SEDIMENT TRAP					
PAS-ST-101	ND(0.08)	ND(0.033)	ND(0.12)	ND(0.15)	ND(0.14)



NOTES:

- BASE MAP ADAPTED FROM TOPOGRAPHIC MAP DEVELOPED BY LOCKWOOD MAPPING, INC. BASED ON AN APRIL 14, 1993 AERIAL PHOTOGRAPH; SOME STREAM-GAUGE LOCATIONS ARE INFERRRED; LOCATION OF SLURRY WALL BASED ON SITE PLAN DRAWN BY DUNN GEOSCIENCE CORP. (DEC. 1984). TITLED "BORING, WELL & TEST PIT PLAN," LOCATION OF SUBSURFACE LEACHATE-RECOVERY TRENCHES BASED ON SITE MAP PROVIDED BY O'BRIEN & GERE ENGINEERING INC.
- SURFACE WATER IS SHOWN IN BLUE; AREAS SHADED GREEN REPRESENT WETLAND AREAS DELINEATED BY MENZIE-CURA & ASSOCIATES, INC. (AUGUST 1992).
- BOUNDARIES FOR REACH 10 AND REACH 12, AS WELL AS SPRDS PHASE II SAMPLING LOCATIONS WERE PRESENTED IN THE "FINAL FOCUSED FEASIBILITY STUDY FOR PCB-IMPACTED SEDIMENTS IN THE VICINITY OF THE PAS SUPERFUND SITE, OSWEGO, NEW YORK" (ENVIRON, 1997).
- ND = NOT DETECTED. EACH PCB AROCLOR WAS NOT DETECTED ABOVE THE LABORATORY QUANTITATION LIMIT SHOWN IN PARENTHESIS.
- J = THE COMPOUND WAS POSITIVELY IDENTIFIED; HOWEVER, THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY.
- D = THE COMPOUND WAS ANALYZED AT A SECONDARY DILLUTION.
- [] = DUPLICATE SAMPLE RESULTS.
- NA = NOT AVAILABLE. SAMPLES WERE NOT COLLECTED DUE TO SITE CONDITIONS (LIMITED DEPTH OF SEDIMENT).
- NS = CORE SEDIMENT SAMPLES WERE NOT COLLECTED.
- TOTAL PCB CONCENTRATIONS REPRESENT TOTAL AROCLORS.



NIAGARA MOHAWK
FIRE TRAINING
SCHOOL

FORMER
COUNTY
LANDFILL

X: NONE OFF=REF*
L: ON=1 P: PAGESET/PLT-BL
11/28/03 SYR-B5-DEC LAF KMD
36444003/36444001.DWG