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New England District

Contract No. DACW33-01-D-0004
Delivery Order No. 01
January 15, 2003

DATA EVALUATION REPORT

CENTREDALE MANOR RESTORATION SUPERFUND PROJECT SITE
NORTH PROVIDENCE, RHODE ISLAND

SDMS DocID 48743

FINAL DATA EVALUATION REPORT

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NORTH PROVIDENCE, RHODE ISLAND

Submitted to:

Department of the Army
U.S. Army Corps of Engineers
New England Division

Contract No. DACW33-01-D-0004
Delivery Order No. 01

January 15, 2003

Prepared by:

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QUALITY ASSURANCE STATEMENT

Subcontractor: MACTEC Engineering and Consulting, Inc.

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Signature of QA Officer — Date: 1/14/03

Subcontractor Project Leader — Date: 1/14/03

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1. INTRODUCTION

The U.S. Environmental Protection Agency (USEPA) Region I and U.S. Army Corps of Engineers (USACE) are conducting a Human Health Biota Consumption Risk Assessment (BCRA) and a Baseline Ecological Risk Assessment (BERA) for the Centredale Manor Restoration Superfund Site located in North Providence, Rhode Island (hereafter referred to as "the Site"). This effort is being performed for the USACE under Contract No. DACW33-01-D-0004, Delivery Order 01. A layout of the Site is provided as Figure 1.

This Data Evaluation Report (DER) has been developed to reflect the goals and objectives discussed and agreed upon during meetings with USEPA, USACE, Battelle, and Harding ESE (now MACTEC Engineering and Consulting, Inc.) conducted on July 17, 2000, November 17, 2000, December 4, 2000, December 19, 2000, and February 28, 2001, and presented in meeting minutes and other support documents. This report was prepared to be consistent with the requirements set forth in the Statement of Work (SOW) and the Addendum to the Statement of Work prepared by USEPA (USEPA, 2000a and USEPA, 2000b).

1.1 PURPOSE

The purpose of this report is to provide a discussion of the methods and results of BCRA/BERA summer 2001 data collection and evaluation activities conducted to provide additional analytical data needed to perform the quantitative human health and ecological risk assessments for the Site. The product of these activities, discussed in this report, is a series of media- and exposure area-specific data summaries, which will be used to determine exposure point concentrations (EPCs) for the upcoming risk assessments. The data summaries provided as part of this report rely on post-third party validated data as presented in the media-specific chemistry data reports (Battelle, 2002a through 2002j).

The activities involved in the data evaluation process include compilation of data sets for the quantitative risk assessments. All data were analyzed for compliance with data quality objectives (DQOs) presented in the Work Plan and Field Sampling Plan (Harding ESE, 2001a,b). Data were reviewed with respect to project goals and objectives to verify that data collected meet project data needs (e.g., number and type of samples, species, analyses, and appropriateness for calculation of biota/sediment accumulation factors [BSAFs]). Limitations of the data that will need to be considered in the risk assessments were also identified.

1.2 BACKGROUND

The data evaluation process has involved a series of steps. These steps are listed below and are discussed further in the following paragraphs. Initially, the project team developed goals, objectives, and data requirements to support the upcoming risk evaluations. Historical data were compiled and reviewed to determine the need for additional data. Additional data needs were identified and the BCRA/BERA 2001 field program was conducted to address these needs.

In accordance with the SOW dated April 6, 2000, Harding ESE identified project goals, objectives, and data requirements to support human health and ecological risk assessments for the Site. On Tuesday, December 19, 2000, a meeting was held with the project team (USEPA, USACE, Battelle, and Harding ESE) to discuss DQOs. Subsequently, a report was prepared that presented the goals, objectives, and data needs for evaluating the human health biota consumption pathway and the objectives and data requirements for the ecological assessment endpoints (Harding ESE, 2000). The SOW and the DQO report prepared by Harding ESE were reviewed in conjunction with the current database to determine whether or not data collected during the BCRA/BERA 2001 sampling effort satisfy goals, objectives, and data needs identified by the project team that would be required to conduct the upcoming risk assessments.

In the Work Plan prepared to support the human health and ecological risk assessments (Harding ESE, 2001a), Harding ESE evaluated the existing data and documents (as of March 2001) provided by USEPA and the USACE. Available information was reviewed to determine the need for additional data for successfully accomplishing the planned biota consumption and ecological risk assessments. During the data review, the number of samples collected for each medium, chemical analyses performed for samples collected during particular sampling events, and the location of samples collected were evaluated. It was determined that insufficient historical biota, soil, sediment, and surface water were available to perform the BCRA and BERA. Additional samples needed to be collected from these media to fill the data gaps.

Following identification of data needs for the risk assessments, the Field Sampling Plan (FSP) (Harding ESE, 2001b) was prepared to identify the specific data that would be required for each medium in each exposure area to evaluate the human health biota consumption pathway and ecological exposure pathways.

The BCRA/BERA 2001 field collection activities began in May 2001. Tissue samples collected in the Allendale and Lyman Mill reaches and in upstream areas included fish, crayfish, emerging insects, and earthworms. Media sampled in those areas included floodplain soil, aquatic sediment, and surface water. In the Assapumpset reference area, fish, crayfish, aquatic sediment, and surface water samples were also collected. Fish sampling was conducted in Manton and Dyerville Ponds. No other sampling occurred in those reaches. BCRA/BERA field activities were completed in late July 2001.

The abiotic media data were collected to support the bioassessment data. A variety of bioassessment studies were identified as necessary to conduct the ecological risk assessment (e.g., floodplain invertebrate study, aquatic macroinvertebrates study). The additional sediment, soil, and surface water samples were necessary to interpret the additional biological data.

The samples collected during the BCRA/BERA field sampling program were analyzed or tested for chemical, physical, and biological parameters by laboratories in several organizations, including:

PARAMETERS	LABORATORY
Dioxin/Furan and PCB Congener	Battelle, Columbus OH
HCX	Battelle, Columbus OH
TCX	Battelle, Columbus OH
PCB Aroclor and Chlorinated Pesticides	Battelle, Duxbury MA
Polycyclic aromatic hydrocarbons	Battelle, Duxbury MA
Metals, AVS/SEM	Battelle, Sequim WA
SVOCs and VOCs	Severn Trent Laboratories, Baltimore MD
BOD	Cassell Testing, Hunt Valley MD
Nutrients	Chesapeake Biological Laboratory, Solomons MD
Sediment Toxicity	Great Lakes Environmental Center, Traverse City MD
Taxonomy	Normandeau Associates, Bedford NH

Additional field efforts and analyses have been performed by other parties in 2001. USGS collected tree swallow samples in May and June of 2000 and 2001. USACE collected fish data to support the early life stage testing. Battelle performed the ELS bioassay study. TetraTech collected floodplain soil samples in June and July 2001, sediment samples in July 2001, and groundwater samples in August 2001. These additional efforts are not described or evaluated here. This report summarizes and evaluates the field and analytical data resulting from the BCRA/BERA 2001 sampling effort conducted for the USACE under Contract No. DACW33-01-D-0004.

Third party data validation has been conducted by USEPA and Environmental Standards, Inc. The validated data have been presented in several medium-specific post-third party data validation chemistry data reports (Battelle, 2002a through 2002j).

1.3 ORGANIZATION OF REPORT

This DER is divided into five sections. Section 1 presents introduction and background information. Section 2 provides a description of the Site, a summary of environmental conditions, and a conceptual site model (CSM), which discusses sources of contamination, migration pathways, and potential human and ecological receptors. Section 3 describes the specific project goals and objectives for the BCRA and BERA. Section 4 includes a summary of data needs and DQOs followed by a summary of the BCRA/BERA 2001 data collection activities. Also presented is a description of the deviations from proposed data collection efforts along with rationale for such deviations. Section 5 presents the key data limitations and the associated implications of those limitations on the risk assessments.

2. GENERAL SITE INFORMATION

2.1 DESCRIPTION OF SITE

The main area of the Site, consisting of approximately 9.04 acres, is located in North Providence, Rhode Island, just south of Route 44 on the eastern bank of the Woonasquatucket River. The main area is known as 2072 and 2074 Smith Street. The Site also consists of reaches of the Woonasquatucket River associated with Allendale Pond and Lyman Mill Pond. The Site consists of all contaminated areas within this area as well as any other location to which contamination from that area has come to be located, or from which that contamination came.

Currently, two high rise buildings (Centredale Manor and Brook Village, both federally-subsidized, senior housing complexes) are located in the main area of the Site, which is zoned for residential occupancy. In addition to the buildings, the main area is covered by roadway and parking lots. On the eastern portion of the main area is a drainage swale that begins near the northern portion of the main area and extends south, then curves to the west and discharges south of the main area into the Woonasquatucket River and Allendale Pond.

The Site was used for disposal of wastes containing hazardous substances. Between approximately 1940 and 1970, USEPA has reason to believe that the main area of the Site was the location of a chemical manufacturing facility (which produced hexachlorophene, among other chemicals) and an incineration-based drum recycling facility. The first housing complex was built in approximately 1976. The second high rise was built in 1982. Construction records show that hazardous substances were removed from the Site during the construction of the second complex. Samples indicate the presence of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) and other contaminants in soil and sediment at the main portion of the Site and the river sediment and floodplain soils downstream. Figure 1 provides an overview of the study area.

2.2 EXPOSURE AREAS

As discussed in the Work Plan and FSP (Harding ESE, 2001a,b), the study area was segregated into general exposure areas (EAs) as defined by the four historical impoundments in the Woonasquatucket River (see Figure 1). EA1 consists of the Centredale Reach portion of Woonasquatucket River, Allendale Pond floodplains, and the Allendale Pond channel. The Lyman Mill reach of the Woonasquatucket River and the Lyman Mill Pond represent EA2. Manton Pond is EA3 and Dyerville reach of the Woonasquatucket River and Dyerville Pond constitute EA4. Reference sample collection areas include Woonasquatucket River upstream of the Site (including Greystone Mill Pond), and Assapumpset Pond and Brook.

2.3 CURRENT AND REASONABLY FORESEEABLE USES OF THE SITE

The northern portion of the Site is occupied by the Brook Village and Centredale Manor apartment complexes. These parcels are currently occupied and covered by buildings, pavement, or landscaping. The remaining portions of the Site consist of reaches and wetlands associated with the Woonasquatucket River and four manmade ponds. The river is not used as a source of

drinking water. Per the Rhode Island Department of Environmental Management (RIDEM) Water Quality Regulations EVM 112-88.97-1 (June 23, 2000), the Woonasquatucket River (from Esmond Mill Drive in Smithfield to the CSO Outfall at Glenbridge Avenue in Providence) is classified as a Class B1 water body. Class B1 water bodies are:

> "designated for primary and secondary contact recreational activities and fish and wildlife habitat. They shall be suitable for compatible industrial processes and cooling, hydropower, aquacultural uses, navigation, and irrigation and other agricultural uses. These waters shall have good aesthetic value. Primary contact recreational activities may be impacted due to pathogens from approved wastewater discharges."

The land-use for the northern portion of the Site is expected to remain multi-family residential. USEPA plans to restore the Woonasquatucket River and associated reaches and ponds to a fishable condition.

2.4 SUMMARY OF ENVIRONMENTAL CONDITIONS

Sampling activities conducted by USEPA and RIDEM revealed elevated polychlorinated dibenzo dioxins and furans (dioxins and furans) in soils and sediments as well as from fish taken from the Woonasquatucket River. As mentioned above, other contaminants detected onsite include: Polychlorinated biphenyls (PCBs), chlorinated and aromatic volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), phthalates, and metals. The Site was added to the National Priorities List on February 4, 2000. For the Woonasquatucket River, there is currently a dioxin-, PCBs- and mercury-related fish consumption advisory in place that recommends that people not eat fish, eels, turtles, or plants from the river downstream of the Smithfield Treatment Plant.

Approximately 400 drums and 6,000 cubic yards of soil were removed from the property during construction of the apartment complexes. However, the exact locations of these remediation activities are not known. Temporary caps were installed over heavily contaminated areas near residences. Interim soil caps were placed in the source area in July 2000.

Temporary fencing was erected around areas of contaminated surface soil in January 1999. The temporary fencing was replaced with chain-link fence between May and September 1999 to prevent access to contaminated areas.

Allendale Dam was partially breached in 1991, allowing the water level in Allendale Pond to recede. As a result, most of the pond bottoms adjacent to residential properties along the eastern bank of Allendale Pond were exposed because they were no longer flooded. Since 1991, much of the Allendale Pond area had become vegetated. USEPA planned to reconstruct Allendale Dam during the summer of 2001, thus restoring Allendale Pond. In May 2001, prior to any reconstruction efforts, two successive breaches occurred at Allendale Dam. This likely resulted in the migration of contaminated sediment to Lyman Mill Pond and a substantial lowering of Allendale Pond water. Since then, a new dam has been installed and water levels in Allendale Pond are back to levels that existed prior to the 1991 breach.

2.5 CONCEPTUAL SITE MODEL

The CSM identifies potential source areas from which oil and/or hazardous materials (OHM) may have been released, the migration pathways through which OHM may have been transported and/or translocated to other environmental media, and where possible exposure may occur. The CSM provides a framework for understanding sources of OHM, migration pathways, identification of potential receptors, and development of exposure profiles. The CSM for the Site was developed as part of the Work Plan and is also presented here.

2.5.1 Source Area

Releases of hazardous substances from former industrial operations have occurred at the Site. The source area consists of two parcels located at 2072 and 2074 Smith Street (Lots 200 & 250) that cover approximately 9.04 acres (see Figure 1). Evidence suggests that operations at the former chemical company and drum reconditioning facility resulted in waste disposal onto surface soil and beneath the ground surface. Wastes have also been released directly into the Woonasquatucket River, which runs along the western side of the source area (Tetra Tech NUS Inc., 2000). Dioxins and furans have been detected in soils and sediments as well as in fish tissue collected in 1996 from the Woonasquatucket River. Other contaminants detected in Site media include PCBs, VOCs, PAHs, hexachloroxanthene (HCX), phthalates, and metals.

2.5.2 Migration of OHM

Downstream sediments have been impacted through the transport and deposition of contaminants from the source area. Dioxins and furans have been detected in sediments at Allendale Pond and Allendale Dam, which is approximately 2000 feet from the source area. With the partial breaching of Allendale Dam in 1991 and the more recent breach in 2001, contaminants have migrated downriver to Lyman Mill Pond. Evidence suggests that contaminants originating from the source area have migrated beyond Manton Dam down to Dyerville Pond (Figure 1 shows the location of these ponds and associated dams).

2.5.3 Potential Human Receptors

Consistent with USEPA objectives, the following pathways will be evaluated for the baseline human health risk assessment: potential exposure to chemicals of potential concern (COPCs) via ingestion of fish; and potential inadvertent ingestion and dermal contact with bank soils, surface water and sediment. These pathways will be evaluated for both neighborhood residents and site visitors. Contaminants that are present in surface water and aquatic sediments may have bioaccumulated in fish and other biota present in the Woonasquatucket River. These fish may be consumed by individuals that catch and/or consume biota from the river. Child, adolescent, and adult consumers may be exposed to COPCs via ingestion of fish and other biota and via inadvertent ingestion and dermal contact with bank soils, surface water, and sediment. Both recreational and subsistence anglers/consumers will be evaluated in the human health risk assessment.

2.5.4 Potential Ecological Receptors

In general, aquatic receptors (including invertebrates and both demersal and pelagic fish species) are exposed to COPCs in sediment and surface water via direct contact, direct ingestion, or by consuming prey items that have bioaccumulated COPCs. Semi-aquatic receptors (including mammals, birds, reptiles, and amphibians) may be exposed as a result of incidental ingestion of sediment, consumption of water, or ingestion of contaminated prey. Terrestrial invertebrates and wildlife that prey on these species may be exposed to COPCs in floodplain soil directly or by ingesting contaminated prey. The Work Plan (Harding ESE, 2001a) describes the receptors and exposure pathways that will be evaluated in greater detail.

3. PROJECT GOALS AND OBJECTIVES

The overall project goals are as follows:

1. to evaluate risk to human health associated with the consumption of fish present in the portion of the Woonasquatucket River that constitutes the Site and with potential ingestion and dermal contact with bank soil, surface water, and sediment in the portion of the Woonasquatucket River that constitutes the Site; and

Contaminants that are present in surface water and aquatic sediments may have bioaccumulated in fish and other biota present in the Woonasquatucket River. These fish may be consumed by individuals that catch and/or consume biota from the river. Neighborhood residents and visitors may contact bank soil, surface water, and sediment during angling and recreational activities.

2. to evaluate risks to onsite ecological receptors associated with COPCs identified in the Site.

In general, aquatic receptors (including invertebrates and both demersal and pelagic fish species) are exposed to OHM in sediment and surface water via direct contact, direct ingestion, or by consuming prey items that have bioaccumulated OHM. Semi-aquatic receptors (including mammals, birds, reptiles, and amphibians) may be exposed as a result of incidental ingestion of sediment, consumption of water, or ingestion of contaminated prey. Terrestrial invertebrates and wildlife that prey on these species may be exposed to OHM in floodplain soil directly or by ingesting contaminated prey.

3.1 HUMAN HEALTH OBJECTIVES

Specifically, the human health human health risk assessment will include an evaluation of multiple exposure pathways for neighborhood residents and visitors to the Site: ingestion of biota from the reach of the Woonasquatucket River that constitutes the Site; and ingestion and dermal contact with bank soil, surface water, and sediment in the portion of the Woonasquatucket River that constitutes the Site. The primary objectives associated with these pathways will be:

(1) to calculate potential human health risks associated with biota consumption and contact with bank soil, surface water, and sediment from the portion of the river within the Site boundaries; and
(2) to achieve and/or maintain acceptable risks related to biota consumption and contact with bank soil, surface water, and sediment through risk management procedures that may include development of preliminary remediation goals (PRGs) for sediment and possibly for one or more of those other media.

The objective of the baseline human health risk assessment is to analyze potential adverse human health effects for both current and future conditions caused by hazardous substances found at the site in the absence of any actions to control or mitigate these releases (i.e., under an assumption of no action or in the absence of the RI DOH health advisories on fish consumption for this particular site). Currently, there is a fish consumption advisory issued by the State of Rhode

Island that is not believed to be a sufficient barrier to precluding exposure to biota from the Woonasquatucket River in the short-term. Current and potential future exposure to fish and other biota (including high lipid content biota such as eels) may occur at the river. EPA's goal is to restore the river to an unrestricted "fishable" river.

3.2 ECOLOGICAL OBJECTIVES

In general, the objectives (i.e., assessment endpoints) for the BERA are the protection and maintenance of aquatic, semi-aquatic, and terrestrial receptor populations at the Site. The overall objective of the BERA is to determine if exposure to contaminant concentrations detected in Site media is likely to cause a decline in receptor populations or to adversely affect the integrity of aquatic or floodplain soil communities. The general types of effects of concern include:

- mortality, growth, or reproductive effects resulting from direct exposure to contaminants that affect a significant proportion of a receptor population;
- mortality, growth, or reproductive effects resulting from exposure to contaminants that have bioaccumulated in the ecological food chain that affect a significant proportion of a (higher trophic level) receptor population; and,
- indirect effects associated with a substantial reduction in abundance of prey populations.

Field population and community studies were implemented to evaluate potential population-level effects (e.g., survival, growth, or reproduction) or community-level effects (e.g., species richness and abundance) associated with exposure to Site media. The six assessment endpoint receptor groups selected for the BERA include:

(1) Aquatic and floodplain invertebrates (crayfish, earthworms);
(2) Demersal and omnivorous fish;
(3) Pelagic, piscivorous, or semi-piscivorous fish;
(4) Piscivorous mammals and birds;
(5) Insectivorous mammals and birds; and
(6) Omnivorous mammals and birds.

The BERA will evaluate the protection and maintenance of communities and/or populations of the receptors identified above. There are multiple measures of effect for each of the BERA assessment endpoints. Many of these measures of effect depend on the evaluation of historical and/or recently collected biotic and abiotic data, including analytical chemistry data for surface water, sediment, soil, and biological tissue.

Table 1 originally presented in the FSP (Harding ESE, 2001b) identified the information that would be needed to meet project goals and objectives. This table formed the basis of the BCRA/BERA field collection activities conducted in the summer of 2001.

4. DATA EVALUATION

The objectives of this section are as follows:

- to provide a summary of the historical tissue and abiotic data for the Site (as presented in the Work Plan [Harding ESE, 2001a]);
- to present the data needs identified based on the available data (as presented in the FSP; Harding ESE, 2001b);
- to provide a presentation of the data for media sampled during the BCRA/BERA summer 2001 sampling effort; and
- to identify deviations between proposed and actual samples collected/analyzed and to evaluate data usability for the data collected during the BCRA/BERA 2001 field sampling effort.

The methods used to achieve these objectives are as follows:

- Historical data for tissue and abiotic media were reviewed and summarized (as presented in the Work Plan [Harding ESE, 2001a]);
- Based on the available data, the project team identified remaining data needs for completing the human health and ecological risk assessments (see FSP; Harding ESE, 2001b);
- Field activities were conducted during the summer of 2001 to address these data needs; and
- Based on the results of the recent field effort, deviations from what was proposed versus what was actually collected in the field and analyzed in the laboratory were identified. Data limitations (as they relate to the risk assessments) have been identified and their implications discussed.

Section 4.1 of this report provides an abbreviated summary of the available historical data that was previously presented in the Work Plan (Harding ESE, 2001a). Data needs were identified based on what data were already available. Section 4.2 presents those data needs (as presented in the FSP; Harding ESE, 2001b). A summary of the field collection activities is also presented in Section 4.2. The validated data were grouped by medium and exposure area and statistically summarized as part of the data evaluation process. Data summaries are included in Appendix A to this report. A presentation of data summaries by media and exposure area is provided in Section 4.3. Deviations from the proposed data collection activities are also discussed in Section 4.3.

Section 4.4 identifies deviations from proposed sample collection and physical and chemical analyses during the BCRA/BERA 2001 field program. Section 4.5 presents a comparison between human health and ecological project action goals (PAGs) and achievable laboratory limits, which could affect the assessment of risk at the Site. Recommended detection limits used to support the human health BCRA and the BERA are compared to the achievable laboratory limits. Section 4.6 provides a brief review of the biotic and abiotic data as it relates to frequencies of detection for various chemical groups, specifically dioxins (i.e., 2,3,7,8-TCDD) and hexachloroxanthene (HCX). A discussion of the identified data limitations and implications with respect to quantifying risk at the Site is provided in Section 5 of this report.

4.1 SUMMARY OF HISTORICAL DATA

As part of Work Plan (Harding ESE, 2001a) preparation, historical analytical data for biota collected in the Woonasquatucket River, as well as for Site sediments, surface water, and soil were compiled and reviewed. A summary of the historical data is presented here to provide a basis for the data needs identified in Section 4.2. This information was used by the project team to identify additional data needs in preparation for the BCRA/BERA 2001 field sampling effort. The historical data that are available are discussed below.

Limited historical tissue data are available for fish. The project team determined that these data would be insufficient to adequately characterize risks at the Site. Moreover, laboratory validation reports are unavailable and the analytical methods employed are not consistent with those to be used during the BCRA/BERA 2001 sampling and analysis program.

Historical soil data are available for areas in and downgradient of the source area down to Lyman Mill Dam. These samples consist of bank and floodplain samples as well as source area samples and residential soil samples.

Historical data are available for floodplain, bank, and aquatic sediments. Floodplain sediment data are available for the Allendale and Lyman Mill reaches and in reference areas of the Site (Assapumpset Brook and in the area of Greystone Mill Pond). Bank sediment data are available for the Allendale and Lyman Mill reaches and in Greystone Mill Pond. No floodplain or bank sediment data had been collected for the Manton and Dyerville reaches. Aquatic sediment data are available for the Allendale, Lyman Mill, Manton, and Dyerville reaches and in reference areas of the Site.

Surface water data are available for the Allendale and Lyman Mill reaches and in the area of Greystone Mill Pond. According to the January 2001 database, no surface water samples had been collected from the Manton or Dyerville Reaches or from Assapumpset Brook.

Available information (as discussed above) was reviewed to determine the need for additional data for successfully accomplishing the planned biota consumption and ecological risk assessments. The database was queried for distribution of the samples collected and chemical analyses performed for each of the EAs. The adequacy of the reference sample and upstream sample results was also evaluated. A detailed summary of Site data available by medium and exposure area, which presents number of samples and types of analyses performed, was provided in Table 3-1 of the Work Plan (Harding ESE, 2001a). Although the spatial coverage of sampling locations within the Site appeared adequate to characterize baseline ecological risks, there were a number of data needs identified by the project team that would be required to characterize potential human health biota consumption and ecological risks. These data needs are discussed in the following subsection.

4.2 Presentation of Data Needs with Overview of BCRA/BERA 2001 Data Collection

A summary of the data needs by EA and medium (as presented in Table 1 of the FSP; Harding ESE, 2001b) is provided in Table 1. Table 1 presents the data collection needs (number of samples for each medium and EA) *proposed* by the project team in the FSP and, in addition, provides a column that shows the *actual* number of samples collected by medium and EA during the BCRA/BERA 2001 sampling program.

Based on these data needs, the BCRA/BERA 2001 field sampling activities to support the risk assessments consisted of the following subtasks:

- Biota Tissue Sampling
- Field Population and Community Studies
- Sediment Sampling
- Surface Water Sampling
- Floodplain Soil Sampling

Data summaries for the above sampling results are provided in Appendix A. Provided in the data summaries are raw results and summary statistics, including the frequency of detection, range of detected concentrations, minimum and maximum sample quantitation limits (SQLs), and the average of all samples (using half the SQL as the value for non-detects). Note that primary sample results as well as laboratory duplicate and field replicate results are provided in these tables. Laboratory duplicates and field replicate sample results are not factored into the calculation of summary statistics.

In addition to chemical data, laboratory analysis included physical properties. These additional data include TOC and grain size for soil and sediment, percent moisture for tissue and abiotic media and percent lipid for tissue samples. TOC and grain size data will be used to evaluate contaminant bioavailability and to categorize substrate habitat type. Method detection limits (MDLs) are dependent on percent moisture data to determine sample quantitation limits that will be used in risk assessment calculations. Percent lipid data will be used in deriving biota-sediment accumulation factors (BSAFs) for each species. Percent lipid varies notably among fish species. For the white sucker, percent lipid ranges from 6 to 11 percent wet weight in exposure areas and reference areas. For the largemouth bass, percent lipid ranges from 1.6 to 1.9 percent wet weight in exposure areas and reference areas. American eel are biota with high lipid content, ranging here from 12 to 19 percent wet weight.

Discussion of the above sampling efforts and the sample results are provided in the following subsections and in Section 4.3. Early life stage (ELS) fish and egg samples and tree swallow tissue samples were also collected and analyzed as part of the BCRA/BERA 2001 sampling effort. Summary statistics and raw results for ELS and tree swallow are presented as part of Appendix A, but discussion of the results and an evaluation of DQOs for these data are prepared in separate reports prepared by others. Note that Appendix A provides 2001 tree swallow data only. In addition, all tissue types for tree swallow and ELS are summarized together.

ELS analytical tissue data along with other study results (e.g., photomicrographs) will be used in the evaluation of risks to fish progeny in the BERA. Tree swallow data (i.e., levels of bioaccumulating compounds in eggs, nestling tissue, and composite stomach content samples) will be used in the BERA to evaluate the bioaccumulation hazard posed by food chain exposures to these receptors. Evaluation of the ELS and tree swallow data is not within the scope of this report. Additional groundwater and floodplain soil samples were collected in 2001 by Tetra Tech NUS. Three archived sediment samples collected by TetraTech NUS in 1999 were analyzed for dioxins/furans, HCX and TCX in 2001 (Battelle, 2002i). These data are not included in this data evaluation, but will also be used in the risk assessments.

4.2.1 Biota Tissue Sampling

4.2.1.1 Data Needs

For the purpose of the human health and ecological risk assessments, data needs included a variety of tissue collection activities. Analytical chemical results for fish tissue collected from the portion of the Woonasquatucket River that constitutes the Site were needed to evaluate human health risks associated with potential exposures to local populations via consumption of biota from the river.

Various biota tissue data were required to evaluate ecological risks associated with receptors that may ingest aquatic biota that have bioaccumulated or bioconcentrated Site-related compounds in their tissue. Fish samples would be used to evaluate potential risks to ecological receptors that ingest fish and other organisms that have bioaccumulated Site-related compounds in their tissue. The tissue data will be used directly in the BERA to estimate both direct effects to the sampled organisms and potential bioaccumulation risks to consumer species. Additional biota tissue data needed to support the BERA included crayfish, emerging aquatic insects, and earthworms.

Crayfish would be collected in each exposure area to evaluate aquatic food chain exposures in the BERA. Floodplain invertebrates (earthworms) would be collected in each exposure area to evaluate worm-eating wildlife exposures and to estimate direct toxicity to soil fauna based on measured tissue burdens of bioaccumulating compounds.

Figures 2 through 5 provide BCRA/BERA sample locations.

4.2.1.2 Sampling Summary

Fish samples were collected from the four EAs to evaluate human health risks associated with eating fish from the four reaches of the Site (Allendale, Lyman Mill, Manton, and Dyerville Ponds). In addition, fish samples were collected from the reference areas (Upstream and Assapumpset Brook).

Three biota species were targeted for collection. The objectives of the ecological risk assessment required that representatives of both demersal and piscivorous categories be included in the sampling program. Preliminary target species included white sucker and largemouth bass. The third target species, focused on meeting requirements for the human health fish consumption

assessment, is the American eel. The specific species collected for tissue analysis to support the BCRA and the BERA were based on availability of species in the collection areas and the need to represent different trophic levels in the ecological risk assessment. When field activities were implemented, if the target species were not available in abundances necessary to meet sample number requirements, identified "alternative" species (as identified in the Work Plan) were selected based on the project objectives and relative abundances. Areas of fish collection are shown on Figures 4 and 5.

The BCRA will include evaluation of both American eel and largemouth bass. Whole body analysis was conducted for the eel. For the largemouth bass, fillet and offal were collected. Largemouth bass fillet samples were analyzed to support the BCRA because this is the portion of the fish that is typically consumed. To evaluate ecological risks, the offal portions (i.e., remaining flesh, bones, and internal organs) were also analyzed and whole body tissue concentrations were derived as the wet-weight weighted average of the separate fillet and offal analyses. Separate fillet and offal analytical results are provided in the Appendix A data summaries.

In addition to the tissue samples from the three species identified above, additional tissue samples were collected specific to support the evaluation of ecological risks at the Site. These additional tissues included crayfish, emerging macroinvertebrates, earthworms, and various samples collected as part of a swallow population study. Sampling locations for crayfish, emerging insects, and earthworms are presented on Figures 2 and 3.

4.2.2 Field Population and Community Studies

4.2.2.1 Data Needs

Additional population- and community-level studies, focused on evaluating relative population abundance, species richness, and/or reproductive success, were also required for the ecological risk assessment. These studies included:

- a fish population and community survey in pond environments downstream of the Site following the framework of the Index of Biotic Integrity (IBI);
- ichthyoplankton (i.e., larval fish) surveys to obtain community measures of species richness and relative abundance that will be used in the effects assessment of the BERA;
- aquatic macroinvertebrate community survey in riverine environments downstream of the Site (following the multi-habitat approach outlined in Rapid Bioassessment Protocols (RBP) for Use in Wadeable Streams and Rivers, 2nd Edition [Barbour et al., 1999]). The specific focus of this study was to evaluate the potential effects of discharging groundwater in the reach adjacent to the Site and to assess the potential role that surface water COPCs and nutrients may have on this community; and
- soil invertebrate community surveys in floodplain environments associated with the Woonasquatucket River.

4.2.2.2 Sampling Summary

Several surveys were completed to evaluate the impacts that Site-related OHM may have on invertebrates, fish, and avian populations and/or communities. Population- and community-level studies collected information relative to population abundance, species richness, relative abundance of pollution-sensitive species, and reproductive success.

A fish population and community survey was completed in lotic and lentic (i.e., pond) environments downstream of the Site and in reference areas following the framework of the Index of Biotic Integrity (IBI), as outlined in Rapid Bioassessment Protocols for Use in Wadeable Streams and Rivers, 2nd Edition (Barbour et al., 1999). IBI metrics were estimated for each fish community sample to assess species richness and relative health of foraging guilds within the study area. The draft Bioassessment Report of the Fish Community (Normandeau Associates, 2002a) provide results of the IBI assessment. These results will be used in the BERA.

Similarly, benthic macroinvertebrate community evaluation and habitat assessment was conducted in riverine habitats following the framework by Barbour et al. (1999). The draft Benthic Macroinvertebrate Bioassessment Report (Normandeau Associates, 2002b) provide results of the RBP assessment. These results will be used in the BERA.

Sampling areas for the IBI, ichthyoplankton tows, and RBP are presented in Figures 4 and 5.

4.2.3 Sediment Sampling

4.2.3.1 Data Needs

Additional sediment samples were needed in the areas of crayfish sample collection to estimate trophic transfer factors. Additional sediment samples were also required to conduct the laboratory macroinvertebrate bioassays needed to evaluate the direct toxicity that sediment exposure poses to macroinvertebrate receptors. The whole sediment toxicity test endpoints were survival, reproduction, and emergence and growth for two receptors: *Hyalella aztecta* and *Chironomus tentans*. The results of sediment bioassay study are provided in the Whole Sediment Toxicity Testing report (GLEC, 2002).

4.2.3.2 Sampling Summary

Additional sediment samples were collected to support the evaluation of potential bioaccumulation into crayfish tissue and to conduct laboratory bioassays. Sediment bioassay locations are shown on Figures 2 and 3.

4.2.4 Surface Water Sampling

4.2.4.1 Data Needs

Surface water samples were needed to support the aquatic macroinvertebrate community study that was conducted as part of the BERA to evaluate the effects of groundwater discharge (in the vicinity of the Site).

4.2.4.2 Sampling Summary

Surface water samples were collected from sampling areas associated with the aquatic macroinvertebrate community study sampling areas. Sampling locations are presented in Figures 4 and 5. Surface water grab samples were collected from stations co-located with the macroinvertebrate community study.

4.2.5 Floodplain Soil Sampling

4.2.5.1 Data Needs

Additional floodplain soil samples were needed in the areas of earthworm collection to estimate trophic transfer factors for bioaccumulating compounds and to evaluate patterns of response observed in the soil invertebrate community study.

4.2.5.2 Sampling Summary

Floodplain soil samples were collected to support the evaluation of earthworm tissue analytical results and the soil fauna community study. Sampling locations are presented in Figures 2 and 3. Floodplain soil samples were collected from stations co-located with the soil invertebrate community study.

4.3 Identification of Deviations from Proposed Sample Collection and Analytical Activities

The ultimate product of data evaluation and data summarization is a set of analytical data in a form that can be used in the quantitative risk assessment. Data collected from the BCRA/BERA 2001 field program were compiled for each medium by exposure area. Data summaries are provided in Appendix A.

Each data set provided in Appendix A was summarized to provide the following statistical descriptors: (1) the ratio of the number of samples in which the analyte is detected to the total number of samples (i.e., frequency of detection), (2) range of analytical quantitation limits (QLs), (3) range of detected concentrations, and (4) arithmetic mean of reported concentrations. Rejected analytical results (i.e., results assigned an "R" qualifier) were not included in any of the statistical data analyses. When calculating the arithmetic mean concentrations, one-half the analytical QL was used as the reported concentration for results reported as not-detected (i.e.,

results assigned a "U" and "UJ" qualifier). In addition to the data summaries provided for each medium/exposure area combination, the raw results by sample identifier are also provided.

The following subsections discuss the data sets developed for biological tissue (fish, earthworms, crayfish, and emerging insects), floodplain soil, aquatic sediment, and surface water. Only the fish data (fillet for largemouth bass and American eel whole body) will be used in the human health BCRA. The BERA will use all data sets compiled in Appendix A. As mentioned previously, largemouth bass exposures will be based on whole body-derived exposure concentrations.

Also provided in the following subsections is the explanation of any deviations from the proposed sampling and analytical requirements specified in the Work Plan and FSP (Harding ESE, 2001a,b). USEPA was consulted prior to making changes in the locations sampled, number of samples collected and/or numbers and types of species collected. In addition, any deviations from the proposed versus actual analyses performed (for chemical and physical parameters) are also discussed. Tables 1 and 2 highlight the deviations from the proposed samples collected (Table 1) and from the proposed analyses performed by the contracted analytical laboratories (Table 2).

4.3.1 Fish

Samples Collected:
As shown in Table 1, during the BCRA/BERA 2001 sampling efforts the following fish samples listed by exposure area were collected:

Allendale:	13 demersal fish (11 white sucker and 2 Fall fish samples) and 10 American eel. No piscivorous fish (e.g., largemouth bass) collected
Lyman Mill:	12 demersal fish (white sucker) and 1 white sucker egg sample , 10 piscivorous fish (largemouth bass), and 10 American eel
Manton:	3 piscivorous fish (largemouth bass)
Dyerville:	3 American eel
Assapumpset:	3 demersal fish (brown bullhead), 4 piscivorous fish (largemouth bass), and 6 American eel
Upstream:	10 demersal fish (white sucker), 10 piscivorous fish (largemouth bass) and 10 American eel were collected

Deviations from Proposed Location and Number of Samples:
In Allendale Pond, no piscivorous fish were observed or caught during the sampling event. At the time of sampling, the dam had been breached and the pond had become a shallow (i.e., less than two feet deep) riverine channel. The resulting habitat (i.e., post dam breach) no longer provided adequate habitat for large piscivorous fish. Fish were likely either swept downstream at the time of the dam breach or migrated upstream.

Assapumpset Pond was sampled extensively; however, field personnel were unable to meet specified data requirements.

The Dyerville reach was sampled and no piscivorous fish were observed or caught. American eel was the only species observed in abundance that would provide enough tissue for the required sample analyses. Therefore, the decision was made to sample this species. The dam below this reach had been breached for many years and the shallow riverine habitat does not provide adequate habitat for large piscivorous fish species. In any case where a single fish did not meet the minimum weight requirement for the required analyses, a composite of multiple fish was collected for analysis. The two Fall fish samples from Allendale pond were composite samples.

The number of samples of each fish category at all other EAs are consistent with those proposed.

4.3.2 Crayfish/Aquatic Sediment/Sediment Bioassay

Samples Collected:
As shown in Table 1, during the BCRA/BERA 2001 sampling effort the following paired crayfish/aquatic sediment samples and invertebrate bioassay samples were collected:

Allendale:	3 crayfish and 3 sediment samples; 3 bioassay sediment samples
Lyman Mill:	4 crayfish and 4 sediment samples; 3 bioassay sediment samples
Manton:	not required per the FSP
Dyerville:	not required per the FSP
Assapumpset:	1 crayfish and 1 sediment sample; 1 bioassay sediment sample
Upstream:	4 crayfish and 3 sediment samples; 1 bioassay sediment sample

Deviations from Proposed Location and Number of Samples:
An additional crayfish sample was analyzed in the upstream exposure area. This sample was submitted to the laboratory with a request to hold analysis in the event that sufficient sample volume was not obtained. This sample was inadvertently analyzed by the contract laboratory. All other actual samples collected are consistent with the number of samples proposed.

4.3.3 Emerging Insects

Samples Collected:
As shown in Table 1, during the BCRA/BERA 2001 sampling effort the following emerging insect samples were collected:

Allendale:	none collected
Lyman Mill:	1 composite of 5 samples
Manton:	not required per the FSP
Dyerville:	not required per the FSP
Assapumpset:	not required per the FSP
Upstream:	1 composite of 5 samples

Deviations from Proposed Location and Number of Samples:
In Allendale Pond, the emerging insect traps did not collect enough insects to provide the quantity of sample required to complete chemical analyses. The dam at Allendale Pond had breached prior to sampling, resulting in this reach reverting back to a river channel. Emerging insect traps

were placed in available backwater areas; however, water levels continued to drop during the sampling period. The traps were moved once during the sampling program, but low river flows resulted in the sediments in the relocated areas also becoming exposed. No emerging insects were collected from Allendale Pond as a result. Field personnel collected samples from each of the five traps from Lyman Mill and the upstream reference area. However, in both cases, the five samples collected were composited due to insufficient biomass.

4.3.4 Floodplain Soil/Earthworms

Samples Collected:
As shown in Table 1, during the BCRA/BERA 2001 sampling effort the following paired earthworm/floodplain soil samples were collected:

Allendale:	5 earthworm and 4 floodplain soil samples
Lyman Mill:	3 earthworm and 3 floodplain soil samples
Manton:	not required per the FSP
Dyerville:	not required per the FSP
Assapumpset:	none collected
Upstream:	4 earthworm and 4 floodplain soil samples

Deviations from Proposed Location and Number of Samples:
Suitable habitat for earthworms was not found in the area identified in the Work Plan for Assapumpset Pond. It was determined in the field that the soils were likely too acidic for earthworms to tolerate as none were found in numerous test pits dug in the area. Therefore, an alternate location was selected in a "non-impacted" (i.e., up stream of Rte. 44, in the floodplain adjacent to the Woonasquatucket River).

Similarly, only two suitable floodplain/earthworm locations were identified and sampled in the Lyman Mill Pond area. The locations that were previously identified in the Work Plan and during reconnaissance did not provide adequate floodplain habitat or yield adequate earthworms. Therefore, the one additional sample that was to be collected in the "impacted area" (i.e., Lyman Mill Pond) was moved to the "impacted" floodplain habitat in the Allendale Pond area.

All other actual samples collected are consistent with the number of samples proposed.

4.3.5 Surface Water

Samples Collected:
As shown in Table 1, during the BCRA/BERA 2001 sampling effort the following surface water samples were collected:

Allendale:	4 surface water samples
Lyman Mill:	2 surface water samples
Manton:	not required per the FSP
Dyerville:	not required per the FSP
Assapumpset:	1 surface water sample

Upstream: 2 surface water samples

Deviations from Proposed Location and Number of Samples:
For Greystone Mill Pond, the upstream surface water sample, which was to be collected in the vicinity of the RBP station was not collected there. Both the RBP station and the surface water sampling location were moved to Allendale Pond, which had become more suitable for the RBP analysis due to the breaching of the Allendale Dam.

For Assapumpset Pond, the second sample that was to be collected in the stream flowing from Assapumpset Pond was eliminated because the stream below the pond is culverted, and it was not clear that there were no other inputs to the stream prior to it "day-lighting." It was determined following a discussion with USEPA during site reconnaissance that the second sample could be eliminated.

4.4 Deviations in Chemical and Physical Analyses

Table 2 provides a summary of chemical and physical data analyses performed for the samples collected during the BCRA/BERA 2001 field sampling effort. Deviation from what was proposed in the FSP is identified by shading. The only sample analyses performed for emerging insects include dioxins/furans and PCB congeners. There was insufficient insect biomass available to perform the other analyses proposed for these samples (i.e., PCBs,/pesticides, metals, and methylmercury).

4.5 Comparison of Project Action Goals and Quantitation Limits

The analytical data were further evaluated for usability by evaluating QLs. This evaluation is conducted as one component in determining the potential impact of limits of detection on the results and conclusions of the planned risk assessments. If a data set has a high frequency of "non-detects" and the limits of detection are elevated with respect to concentrations that are of potential concern to human or ecological receptors, those limits of detection could have a significant impact on the results and conclusions of the risk assessments. During preparation of the FSP and Quality Assurance Project Plan (QAPP), the human health and ecological risk assessors identified PAGs that would be adequate to ensure that concentrations of concern in Site media from a risk or regulatory perspective would be detected and quantified. The lower of the human health and ecological PAGs were identified as a data quality objective for each parameter by medium (as shown in Tables 3 through 6).

The expected Achievable Laboratory Limits (QLs) for various media provided in Worksheet #9b of the QAPP (Battelle, 2001) have been compared to the PAGs in Tables 3-6. A summary of those comparisons is provided below. The actual quantitation limits for these analyses can be viewed in the data summary tables in Appendix A. Typically, actual quantitation limits were consistent with the expected Achievable Laboratory Limits, unless a sample was diluted prior to analysis.

Table 3 provides a comparison of the PAGs for soil to the projected Achievable Laboratory Limits QLs for soil provided in Worksheet #9b of the QAPP (Battelle, 2001). The QLs are less

than or equal to the PAGs for PCBs (Aroclors). The QLs exceed associated PAGs for 9 of the 20 pesticides by a magnitude of less than 10 times. The dieldrin QL exceeds the PAG by 59 times. For PAHs, the QLs are less than or equal to the PAGs except for two (benzo(a)pyrene and dibenz(a,h)anthracene). However, the magnitude of exceedance is low. For four inorganics (arsenic, cadmium, mercury, and thallium), QLs exceed PAGs by between 10 and 50 times. The most notable exceedances of PAGs occur for dioxins and the PCB congeners. The majority of dioxin QLs exceed PAGs by less than 50 times. Three dioxins have QLs that exceed PAGs by a greater magnitude (between 125 and 625 times). Significant exceedances of PAGs occurred for the PCB congeners. The magnitudes of exceedances ranged from 10 to 91,743 times the PAG.

Table 4 provides a comparison of the PAGs for sediment to the Achievable Laboratory Limits (QLs) for sediment provided in Worksheet #9b of the QAPP (Battelle, 2001). As for soil, the QLs are less than or equal to the PAGs for PCBs. The QLs exceed associated PAGs for 11 of the 20 pesticides by a magnitude of less than 12 times. The dieldrin QL is 59 times the PAG. The QLs are less than or equal to the PAGs for all PAHs. For four inorganics (arsenic, cadmium, mercury, and thallium), QLs exceed PAGs by between 10 and 50 times. The majority of dioxin QLs exceed PAGs by less than 50 times. Three dioxins have QLs that exceed PAGs by a greater magnitude (between 125 and 625 times). Significant exceedances of PAGs occurred for the PCB congeners. The magnitudes of exceedances ranged from 10 to over 91,000 times the PAG.

Table 5 provides a comparison of the PAGs for surface water to the Achievable Laboratory Limits (QLs) for surface water provided in Worksheet #9b of the QAPP (Battelle, 2001). For PAHs, inorganics, and VOCs, QLs are less than or equal to the PAGs. For PCBs (Aroclors), the QL generally exceeds the PAG by about 100 times. The magnitudes of PAG exceedances are generally low for pesticides (less than 12 times), except for toxaphene where the QL exceeds the PAG by 250 times. For semivolatile organic compounds (SVOCs) that include phenols and phthalates, the magnitude of PAG exceedances ranges from 2 to 98 times.

Table 6 provides a comparison of the PAGs for tissues to the Achievable Laboratory Limits (QLs) for tissues provided in Worksheet #9b of the QAPP (Battelle, 2001). In general, the QLs are less than or equal to the PAGs for pesticides. The QLs exceed associated PAGs for only 6 of the 20 pesticides by a magnitude of less than 10 times. For PCBs, QLs exceed PAGs by a magnitude of 12 times. The QLs are less than or equal to the PAGs for all PAHs, except two (benzo(a)pyrene and dibenz(a,h)anthracene). However, the magnitude of these exceedance is low. For inorganics, PAGs exceedances are generally minor. The QLs for two inorganics (arsenic and cadmium) exceed the associated PAGs by less than 50 times. Again, the most notable exceedances of PAGs occur for dioxins and the PCB congeners. The majority of dioxin QLs exceed PAGs, with magnitudes ranging from 36 to 3571 times. The magnitudes of exceedances of PAGs for PCB congeners were generally less than 50, with two exceptions (PCB 126 and PCB 169).

The discussion presented above concerning the ratio of Achievable Laboratory Limits and PAGs by itself might suggest that the limits of detection could significantly impact the planned risk assessments. However, the significance of those ratios for the risk assessments is also affected by another important parameter. That parameter is the frequency of detection (and by association the frequency of non-detects). The available data indicate that there is a very low frequency of

"non-detects" for sediment, floodplain soils, and biological tissue for EAs, the background location, and the upstream location for dioxins, HCX, metals, pesticides, and PAHs. In other words, the limits of detection that are greater than the PAGs are an issue that occurs very infrequently, and therefore, would have a minimal impact on risk assessment activities.

4.6 Preliminary Data Review

A review of the tissue data summaries (i.e., for fish, crayfish, and earthworm) and abiotic data summaries (i.e., for floodplain and aquatic sediment) provided in Appendix A indicate that contaminants of particular concern at the Site (HCX and TCDD) were generally detected in all media and at high frequency.

- American eel was collected from the Allendale, Lyman Mill, and Dyerville EAs and from both reference areas. TCDD was detected in *all* eel samples collected from Site EAs. TCDD was detected in all but one sample collected from the reference areas. HCX was detected in approximately 80% of samples collected from Site EAs. HCX was not detected in eel collected from the reference areas.

- White sucker was collected from the Allendale and Lyman Mill EAs, and from both reference areas. TCDD was detected in *all* white sucker samples collected from Site EAs. TCDD was detected in all but one sample collected from the reference areas. HCX was detected in approximately 90% of samples collected from Site EAs.

- Largemouth bass was collected from the Lyman Mill, and Manton EAs, and from both reference areas. TCDD was detected in *all* largemouth bass samples collected from Site EAs. TCDD was detected in all but two samples collected from the reference areas. HCX was detected in approximately 70% of samples collected from Site EAs.

- Paired crayfish and aquatic sediment samples were collected from the Allendale and Lyman Mill EAs and from both reference areas. TCDD and HCX were detected in all aquatic sediment samples collected from Site EAs and the reference areas, and in all crayfish samples from the Site EAs. HCX was detected in one crayfish sample from the Assapumpset reference area, and TCDD was detected in about 50% of the samples collected from the reference areas.

- Paired earthworm and floodplain samples were collected from the Allendale and Lyman Mill EAs and from the upstream reference area. TCDD and HCX were detected in all floodplain soil samples collected from Site EAs and the reference areas. TCDD was detected in all Allendale and Lyman Mill samples, and HCX was detected in about 75% of those samples. TCDD was detected in 75% of the upstream reference area; however, HCX was not detected there.

- Analysis of the compound 2,3,6,7-tetrachloroxanthene is associated with considerable uncertainty. The large majority of analytical results for this compound were considered unusable by the data validators primarily due to noncompliant initial calibration, low ongoing precision and recovery, and low MS and MSD recoveries.

Similarly, chemicals within other parameter groups including PAHs, pesticides, PCBs, and metals were detected at high frequency in all sampled media. As seen in Appendix A, it is common to find many of the constituents within each chemical group detected at a frequency of 100%.

Dioxins have been detected in all sampled media from both reference areas (upstream and Assapumpset). Concentrations in reference areas were generally two or three orders of magnitude lower than those in Site EAs.

There were some unanticipated results with respect to the detection of HCX in sediment, floodplain soil and biological tissue at the "upstream" location and at Assapumpset. Since these locations are upstream and remote from the Site, detection of HCX (a signature compound of the Site) in sediments in particular was not anticipated. HCX was detected in 3 of 3 sediment samples at the "upstream" location and in the only sediment sample from Assapumpset. HCX was detected in 4 of 4 floodplain soils at the "upstream" location. HCX was detected in 5 of 12 largemouth bass samples from Assapumpset. No HCX was detected in tissue samples of American eel or crayfish from Assapumpset. HCX was detected in 1 of 4 crayfish tissue samples from the "upstream" location. No HCX was detected in tissue samples of American eel or white sucker from the "upstream" location.

A full review of the data will be conducted as part of the human health and ecological risk assessments.

5. SUMMARY AND IMPLICATIONS OF DATA LIMITATIONS

Key data limitations and the associated implications of those limitations on the human health and ecological risk assessments are summarized below. In addition, all data limitations will be identified and discussed in the Uncertainty Analysis of the risk assessments.

1. No piscivorous fish species (i.e., largemouth bass) was collected in Allendale Pond.

   For the BCRA, risks associated with consumption of piscivorous fish in Allendale Pond will not be assessed. The existence of this data limitation will have minimal impact on the conclusions of the human health risk assessment. A sufficient number of samples of American eel have been collected. The American eel is the target species focused on meeting requirements for the human health fish consumption assessment. Evaluation of the American eel will provide adequate information to estimate potential biota consumption risks in Allendale.

   For the BERA, exposure to that trophic level in Allendale will not be assessed. This will not have a significant impact on the conclusions of the ecological risk assessment. It is likely that potential ecological risks associated with the Allendale reach will be driven by the white sucker, a bottom feeding species with more significant exposures related to direct contact with contaminated sediments. A sufficient number of white sucker were collected in Allendale Pond.

2. Fewer than the target number of each of the three target fish species (brown bullhead, largemouth bass, and American eel) were collected in Assapumpset Pond.

   For the BCRA and BERA, the fewer number of samples leads to further uncertainty as to whether those collected are representative of the population. If 95% Upper Concentration Levels (UCLs) are calculated using less than 10 samples, they may represent a less accurate estimate of the EPC. However, Assapumpset Pond is one of two reference areas, and sufficient data are available from the upstream reference area (that includes Greystone Mill Pond). Therefore, this will not be a significant issue for the risk assessments.

3. Sufficient emerging insect biomass was not collected in Lyman Mill Pond and in the upstream reference area. Those samples obtained were composited into a single sample for each of these areas. Sufficient emerging insect biomass could not be obtained to represent a single composite sample in the Allendale EA.

   Emerging insect data were collected to estimate insectivorous bird dietary exposures. This data limitation will not have significant impacts on the ecological risk assessment. The analysis of fledgling tree swallow stomach contents provides a second set of data to estimate the exposures and the emerging insect tissue data that were obtained can be used to corroborate these results. With only a single emerging insect composite attained from Greystone Mill Pond and Lyman Mill Pond, no measure of variability is available;

however, the tree swallow stomach content analytical results will be used to assess this uncertainty in the BERA.

4. No paired earthworm/floodplain soil sample was collected in the Assapumpset reference area.

   To compensate for this, an additional paired earthworm/floodplain soil sample was collected in the upstream reference area. It is unlikely that this data limitation will have significant impacts on the ecological risk assessment.

5. Although the Achievable Laboratory Limits identified in the QAPP exceeded human health and ecological PAGs, particularly for dioxins and PCB congeners, the frequency of detection is actually quite high (> 80%).

   The comparison of Achievable Laboratory Limits and the human health and ecological PAGs is conducted to determine the potential impact of higher detection limits for "non-detects" on the risk assessments. For example, at one end of the theoretical spectrum, very high detection limits combined with low detection frequency could result in a risk assessment concluding that a particular compound is not present when in fact it is present at concentrations of potential concern. The available data for this Site perhaps represents the other end of the spectrum. The difference between the Achievable Laboratory Limits and the PAGs will have minimal impact on the risk assessment results. There is a very small frequency of "non-detects" for dioxins, HCX, PAHs, and metals in sediment and biological tissue. For Site-related EAs, the background location, and the "upstream" location the presence of the analytes in tissue and sediments is well established by the available data. Therefore, it is highly unlikely that the ratio of Achievable Laboratory Limits and PAGs will have any material impact on the assessment of human health and ecological risks.

6. The breach of Allendale Dam resulted in significant lowering of the water level in Allendale Pond. Fish collected from Allendale Pond may not be representative of fish currently present in Allendale Pond. The breach in the dam has been repaired and the water level in the pond has been restored.

   Fish samples for the ELS test were collected in Allendale Pond prior to the 2001 breach of Allendale Dam. Fish tissue samples from Allendale Pond were collected after the dam's breach. In reviewing the HCX and TCDD data for ELS and fish tissue data for white sucker, concentrations appear to be comparable, indicating that the fish collected in Allendale following the dam breach are still representative of species that would be present after the dam was reconstructed and the pond conditions were restored.

The key data limitations with potentially significant implications have been identified and reviewed. None were identified that will have significant implications on the BCRA and BERA. The data are clearly usable for the estimation of potential human health and ecological risks at the Site.

ACRONYMS

BCRA	Biota Consumption Risk Assessment
BERA	Baseline Ecological Risk Assessment
BOD	biochemical oxygen demand
BSAFs	biota/sediment accumulation factors
COPCs	chemicals of potential concern
CSM	conceptual site model
DER	Data Evaluation Report
DQOs	data quality objectives
EAs	exposure areas
ELS	early life stage
EPC	exposure point concentrations
FSP	Field Sampling Plan
HCX	hexachloroxanthene
IBI	Index of Biotic Integrity
OHM	oil and/or hazardous materials
PAGs	Project Action Goal
PAHs	polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PRGs	preliminary remediation goals
QAPP	Quality Assurance Project Plan
QLs	quantitation limits
RBP	Rapid Bioassessment Protocol
RIDEM	Rhode Island Department of Environmental Management
SOW	Statement of Work
SVOCs	semivolatile organic compounds
TCDD	tetrachlorodibenzo-p-dioxin
UCL	upper concentration level
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
VOCs	volatile organic compounds

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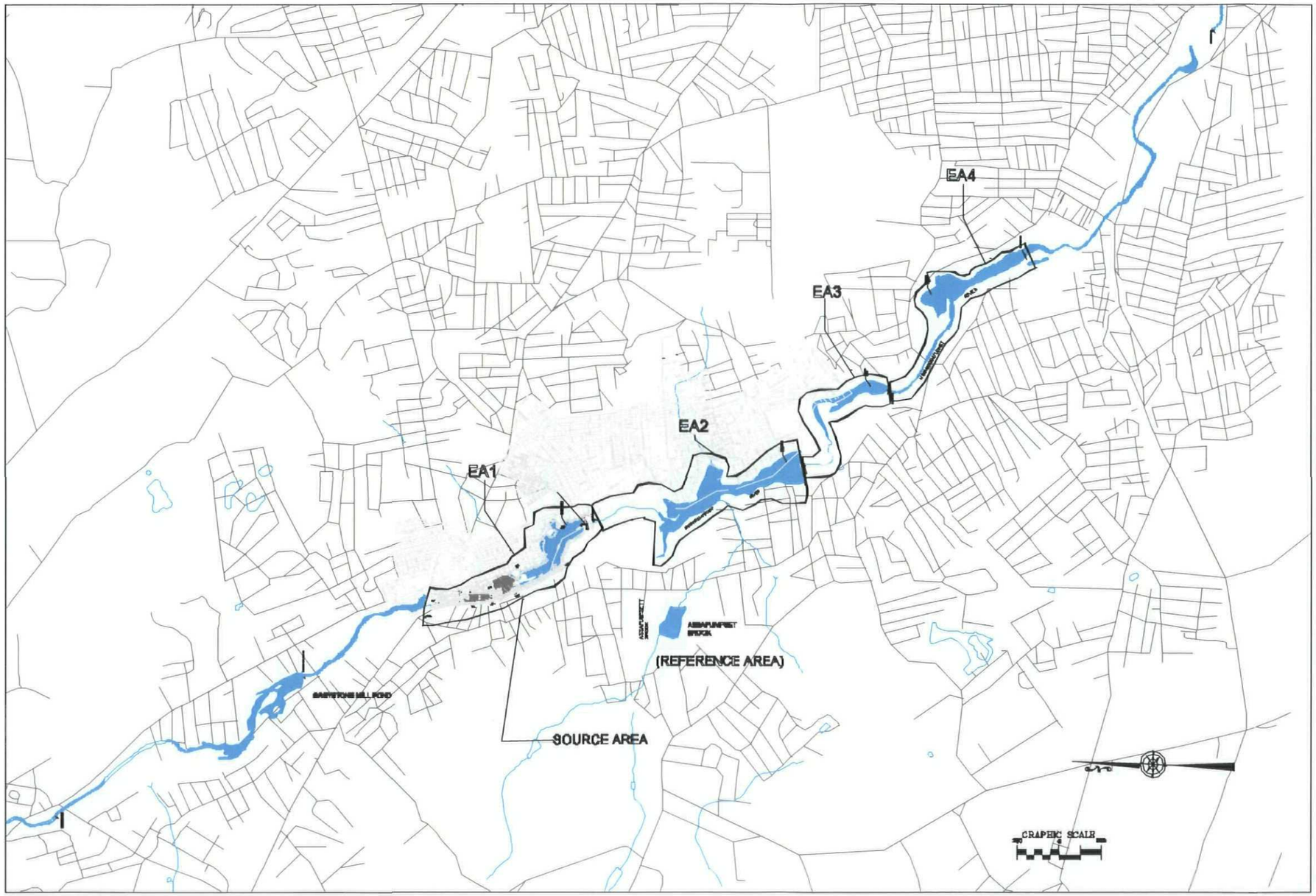

LEGEND:

EA = EXPOSURE AREA

= SURFACE WATERS

= APPROXIMATE EXTENT OF EXPOSURE AREAS

* EA1, EA2, EA3, AND EA4 constitute the site.

SOURCE: TetraTech

MACTEC

FIGURE 1
SITE LAYOUT AND EXPOSURE AREAS
CENTERDALE MANOR RESTORATION SITE
NORTH PROVIDENCE, RHODE ISLAND

P:\W9-GVT\COE-NAE\BATTELLE\CENTREDALE\REPORTS\WORKPLAN\FINAL WORKPLAN\FIGURES\CENTERDALE2.DWG

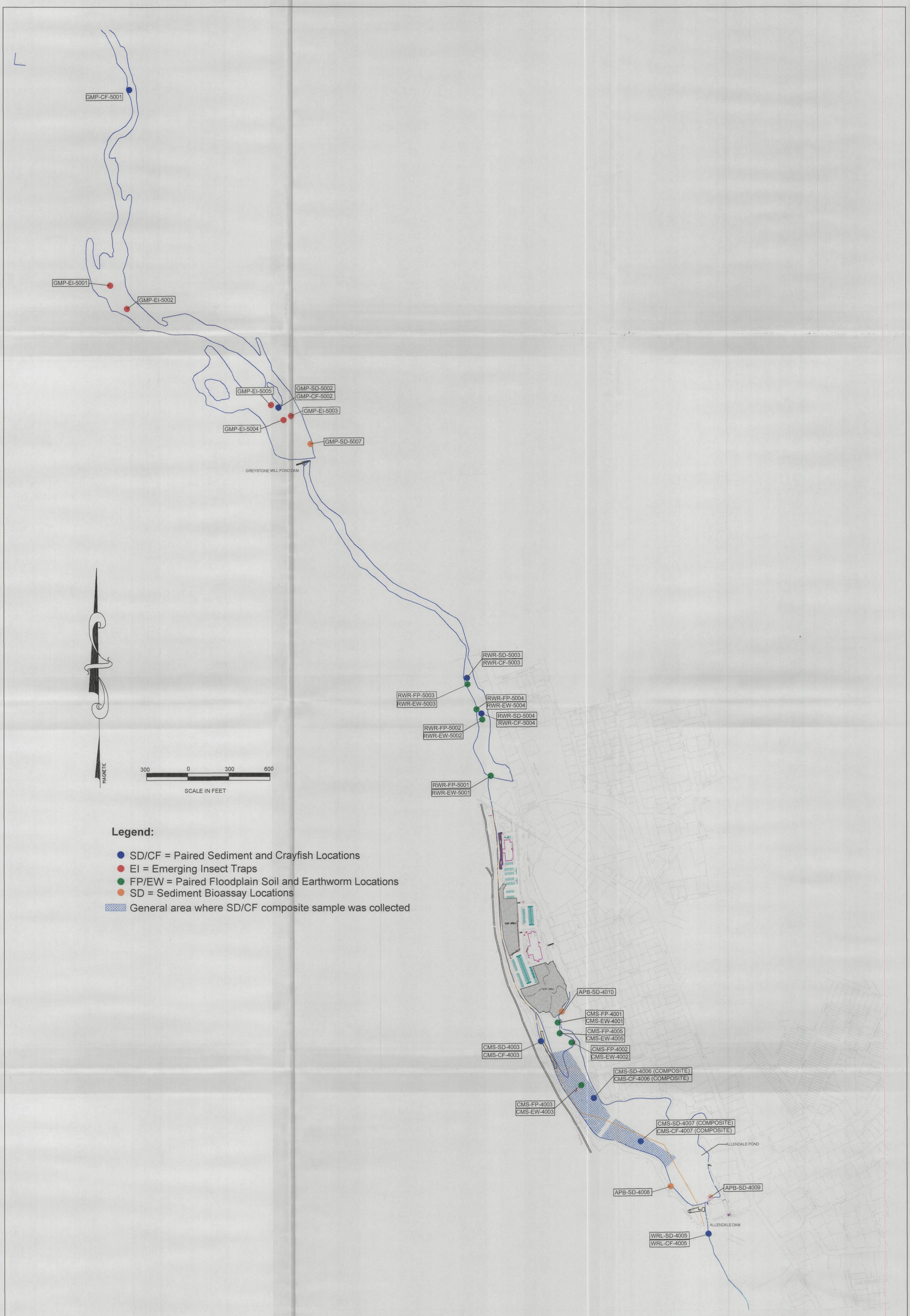

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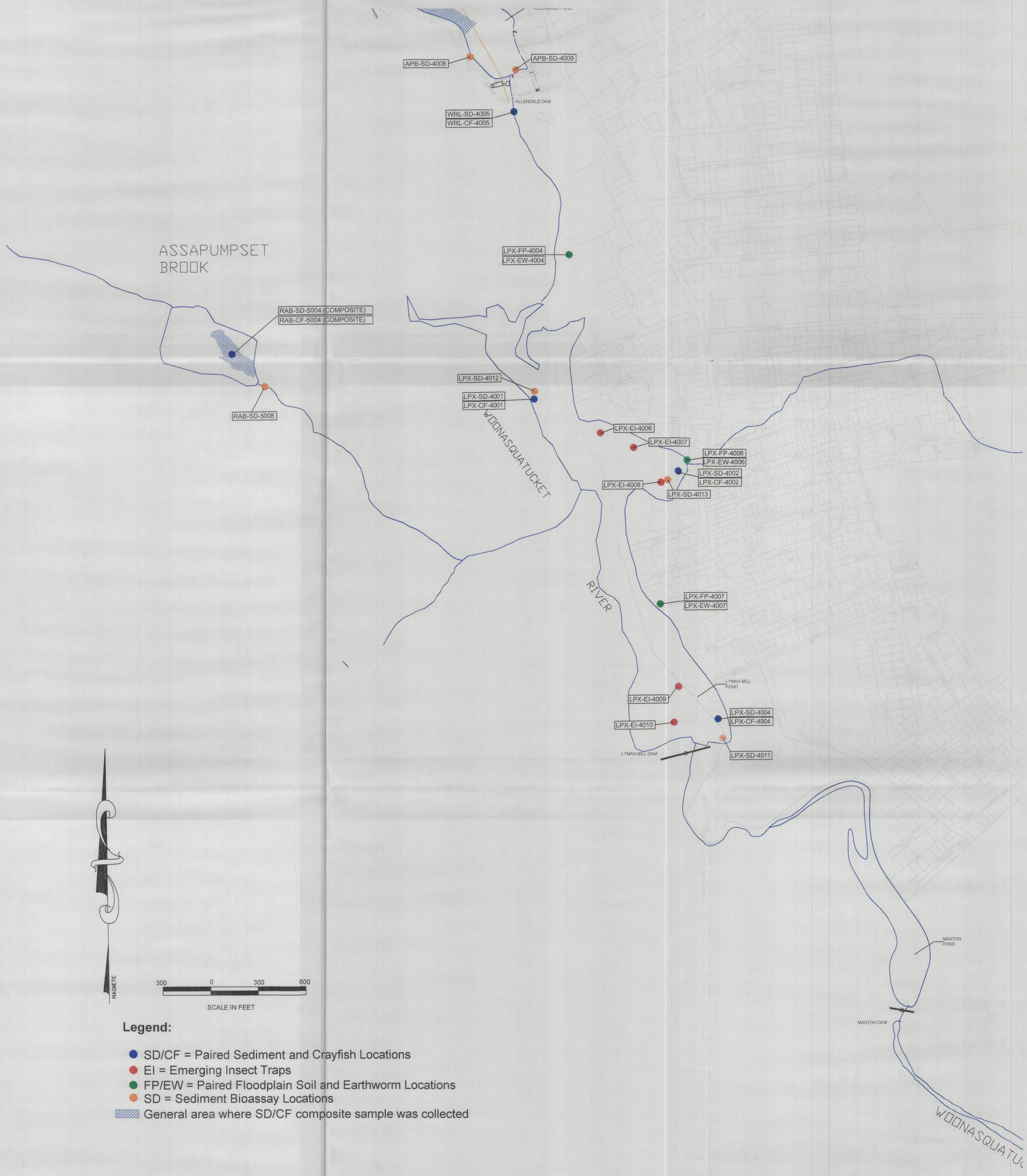
FIGURE 2
SAMPLING LOCATIONS FOR SOIL, SEDIMENT, AND BIOLOGICAL TISSUE
UPSTREAM TO ALLENDALE DAM
CENTREDALE MANOR RESTORATION SITE
NORTH PROVIDENCE, RI

FILE	DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
centerdale_2002.dwg	MCR	51226		1/8/03	



Legend:

- SD/CF = Paired Sediment and Crayfish Locations
- EI = Emerging Insect Traps
- FP/EW = Paired Floodplain Soil and Earthworm Locations
- SD = Sediment Bioassay Locations
- General area where SD/CF composite sample was collected

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FIGURE 3
SAMPLING LOCATIONS FOR SOIL, SEDIMENT, AND BIOLOGICAL TISSUE
ALLENDALE DAM TO LYMAN MILL DAM
CENTREDALE MANOR RESTORATION SITE
NORTH PROVIDENCE, RI

FILE	DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
centerdale_2002.dwg	MCR	51226		1/8/03	

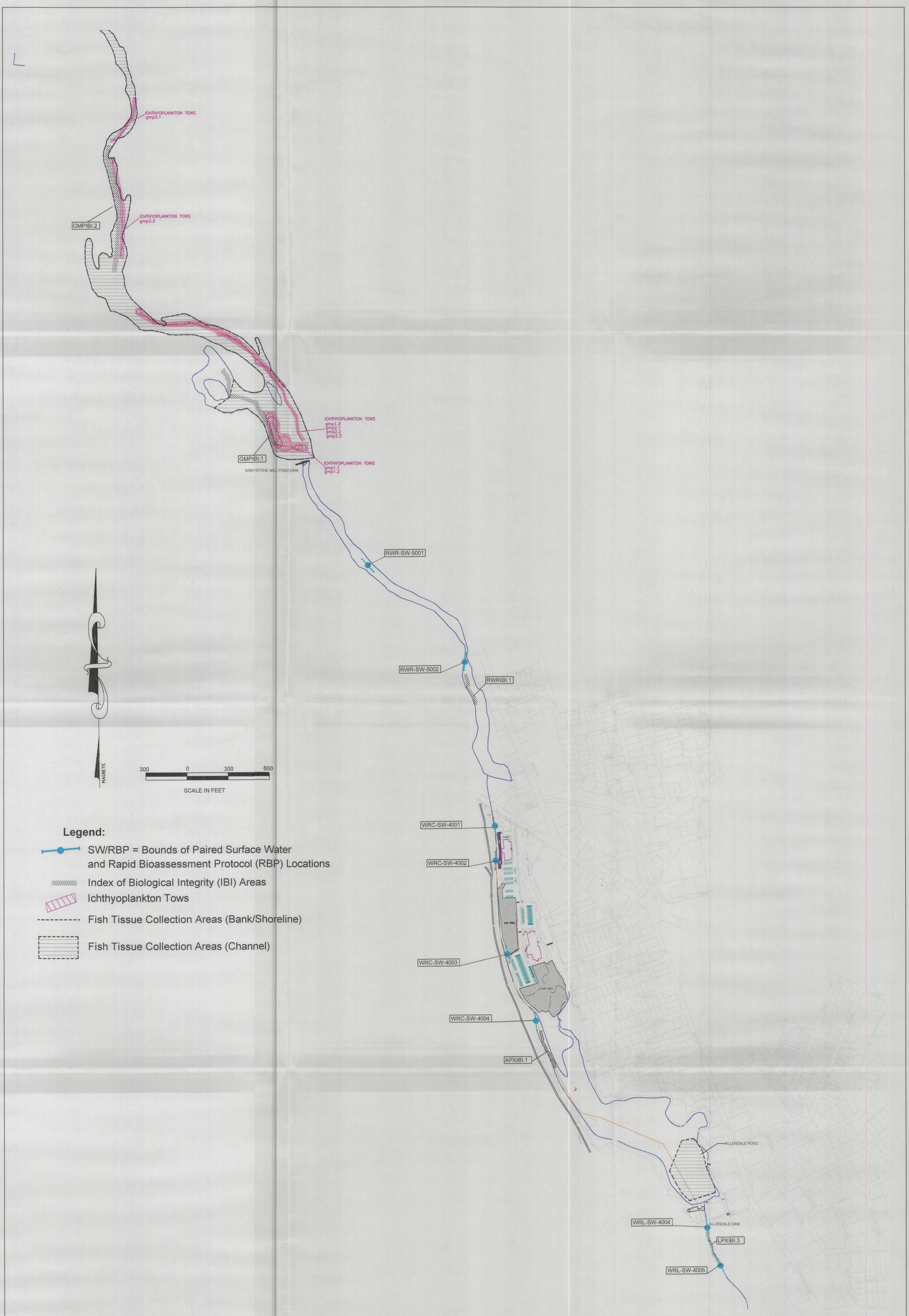

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FIGURE 4
RBP, IBI, ICHTHYOPLANKTON TOWS, AND GENERAL AREAS OF FISH COLLECTION
UPSTREAM TO ALLENDALE DAM
CENTREDALE MANOR RESTORATION SITE
NORTH PROVIDENCE, RI

FILE	DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
centerdale_2002.dwg	MCR	51226		1/8/03	

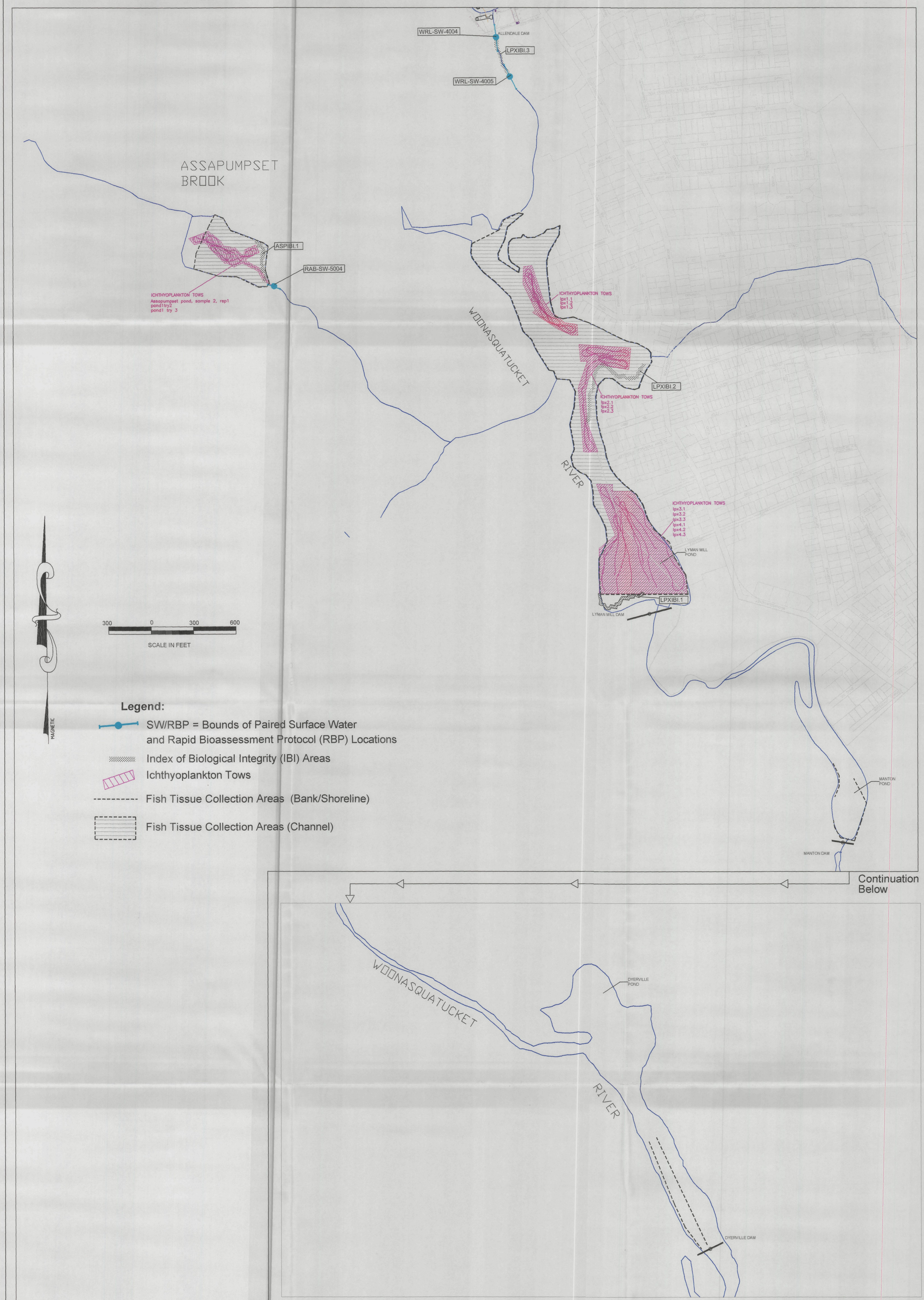

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FIGURE 5
RBP, IBI, ICHTHYOPLANKTON TOWS, AND GENERAL AREAS OF FISH COLLECTION
ALLENDALE DAM TO DYERVILLE DAM
CENTREDALE MANOR RESTORATION SITE
NORTH PROVIDENCE, RI

FILE	DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
centerdale_2002.dwg	MCR	51226		1/8/03	

Table 1
Number of Samples by Exposure Area - Proposed and Actual

Data Evaluation Report
Centredale Manor Restoration Site
North Providence, Rhode Island

		Number of Authentic Samples													
		Reference Area [a]				*Exposure Area [a]*									
Matrix	Type	Upstream/ Greystone Mill Pond		Assapumpsett Brook/Pond		Allendale Reach		Lyman Mill Reach		Manton Reach		Dyerville Reach		Proposed Total # Samples	Actual Total # Samples
		Proposed	*Actual*	*Proposed*	*Actual*	*Proposed*	*Actual*	*Proposed*	*Actual*	*Proposed*	*Actual*	*Proposed*	*Actual*		
Tissue	Fish - demersal	10 {2}	10 {1} "WS"	10 {2}	3 {0} "BB"	10 {2}	13 {6} "WS/FF"	10 {2}	12 {5} "WS"					40	38
	Fish - demersal (egg)							0	1{1} "WS"						1
	Fish - piscivorous (fillet)	10 {2}	10 {1} "LB"	10 {2}	4 {0} "LB"	10 {2}	0	10 {2}	10 {5} "LB"	3 [c]	3 [c] "LB"	3 [c]	0	46	27
	Fish - piscivorous (offal)	10 {2}	10 {1} "LB"	10 {2}	4 {0} "LB"	10 {2}	0	10 {2}	10 {5} "LB"	3 [c]	3 [c] "LB"	3 [c]	0	46	27
	Other - fish, frog or turtle	10 {2}	10 {1} "AE"	10 {2}	6 {0} "AE"	10 {2}	10 {4} "AE"	10 {2}	10 {3} "AE"				3 {1} "AE"	40	39
	Subtotal - BCRA/BERA tissue	40 {8}	40 {4}	40 {8}	17 {0}	40 {8}	20 {7}	40 {8}	43 {20}	6	6	6	3	172	132
Tissue	Crayfish	3 {1}	4 {1}	1	1	3 {1}	3 {0}	4 {1}	4 {1}	-		-		11	12
	Emerging insects	5	1 {1} [b]	-	-	5	0	5	1 {1} [b]	-		-		15	2
	Earthworms	3 {1}	4 {1}	1	0	3 {1}	4	4 {1}	4 {1}	-		-		11	12
	Subtotal - BERA only tissue	11 {2}	9 {3}	2	1	11 {2}	7	13 {2}	9 {3}					37	26
Tissue	Swallow - eggs	5	6 {0, 3, 0} [d]	-	-	5	13 {3, 3, 0} [d]	5	9 {3, 2, 0} [d]	-	-	-	-	15	28 {6, 8, 0}
	Swallow - nestlings	5	5 {1, 5, 0} [d]	-	-	5	5 {1, 5, 0} [d]	5	5 {1, 5, 0} [d]	-	-	-	-	15	15 {3, 15, 0}
	Swallow - stomach contents	3	1 {0, 0, 0} [d]	-	-	3	1 {0, 0, 0} [d]	3	1 {0, 0, 0} [d]	-	-	-	-	9	3 {0, 0, 0}
	Swallow - liver	5	0 {0, 0, 5} [d]	-	-	5	0 {0, 0, 5} [d]	5	0 {0, 0, 5} [d]	-	-	-	-	15	0 {0, 0, 15}
	Subtotal - swallow study	18	12 {1, 8, 5} [d]			18	19 {4, 8, 5} [d]	18	15 {4, 7, 5} [d]					54	51 [e]
Tissue	ELS - eggs	-	-	-	-	-	-	-	-	-	-	-	-	21	39 Egg samples + 14 Catfish Fry samples
	ELS - fish tissue	-	-	-	-	-	3 [f]	-	3 [g]	-	-	-	-	7	6
	Subtotal - ELS	-	-	-	-	-	-	-	-	-	-	-	-	7	59
	Total Tissue	51	66	42	18	51	54	53	72	6	6	6	3	209	272
Sediment	Crayfish locations	3 {1}	3 {1}	1	1	3 {1}	3 {0}	4	4 {2}	-		-		11	11
Sediment	Invertebrate bioassay	1	1	1	1	3	3	3	3	-		-		8	8
	Subtotal - Sediment	4 {1}	4 {1}	2	2	6 {1}	6	7	7 {2}					19	19
Surface Water		3	2	2	1	3	4	2	2	-		-		10	9
Floodplain Soil		3 {1}	4 {1}	1	0	3 {1}	4	4	3 {2}	-		-		11	11

Notes:
[a] - Number in brackets is the number of samples from each area that were proposed to be or were analyzed for PCB congeners.
[b] - Emerging insect samples were collected from each of the 5 traps, but were composited together due to the low sample volume obtained from the traps.
[c] - Three whole body samples collected, but samples required analysis of separate tissue fractions to support the human health and ecological risk assessments.
[d] -The first number in the cell is the number of samples that were analyzed for Dioxin/Furan/HCX/TCX.
The first number in brackets is the number of samples from each area that were proposed to be or were analyzed for PCB congeners.
The second number in brackets (if the second number presents) is the number of samples that were analyzed for PCB Aroclor/Pesticides/Lipid,
and the third number (if the third number presents) is the number of samples that were analyzed for metals and MeHg.
[e] - Actual total number of samples is the sum of the number of samples for all tissue matrices (28 samples for eggs, 15 samples for nestlings, 3 samples for stomach contents, and 15 samples for liver)
[f] - Six fish were collected, but AP-SC-01, AP-SC-02 and AP-SC-03 were composited into one sample per EPA direction; and AP-SC-04 and AP-SC-05 were composited into one sample per EPA direction.
[g] - Two fish were collected, but LP-CC-07 was a female fish and eggs were removed to generate one egg sample and the remaining whole body generated another sample.
AVS/SEM - acid volatile sulfides/simultaneously extracted metals
ERA - ecological risk assessment
HCX - hexachloro(9H)xanthene
BCRA - human health biota consumption risk assessment
PCB - polychlorinated biphenyls
SVOC - semivolatile organic compound
TIC - tentatively identified compound
TOC - total organic carbon
VOC - volatile organic compound
"AE" = American eel
"BB" = Brown bullhead
"LB" = Largemouth Bass
"WS" = White sucker
"WS/FF" = White sucker and Fall fish

Table 2
Summary of Data Analyses

Data Evaluation Report
Centredale Manor Restoration Site
North Providence, Rhode Island

		Sample Analyses Performed [a]												
Matrix	Type	VOCs	SVOCs	PCBs/ Pesticides/	Metals, MeHg	Dioxins/ Furans (w/ HCX)	PCB congeners	Hardness	TOC	Lipid	AVS/ SEM	Grain Size	Percent Moisture	Nutrients
Tissue	Fish - demersal	-	✓ [20]	✓ [31]	✓ [21]	✓ [27]	✓ [104]	-	-	✓	-	-	✓	-
	Fish - piscivorous (fillet)	-	✓ [20]	✓ [31]	✓ [21]	✓ [27]	✓ [104]	-	-	✓	-	-	✓	-
	Fish - piscivorous (offal)	-	✓ [20]	✓ [31]	✓ [21]	✓ [27]	✓ [104]	-	-	✓	-	-	✓	-
	Other - fish, frog or turtle	-	✓ [20]	✓ [31]	✓ [21]	✓ [27]	✓ [104]	-	-	✓	-	-	✓	-
Tissue	Crayfish	-	-	✓ [31]	✓ [21]	✓ [27]	✓ [101]	-	-	✓	-	-	✓	-
	Emerging insects	-	-	-	-	✓ [27]	✓ [101]	-	-	✓	-	-	✓	-
	Earthworms	-	-	✓ [31]	✓ [21]	✓ [27]	✓ [101]	-	-	✓	-	-	✓	-
Tissue	Swallow - eggs	-	-	✓ [31]	-	✓ [27]	✓ [104]	-	-	✓	-	-	✓	-
	Swallow - nestlings	-	-	✓ [31]	-	✓ [27]	✓ [104]	-	-	✓	-	-	✓	-
	Swallow - stomach contents	-	-	-	-	✓ [27]	-	-	-	✓	-	-	✓	-
	Swallow - liver	-	-	-	✓ [21]	-	-	-	-	✓	-	-	✓	-
Tissue	ELS - eggs	-	-	-	-	✓ [27]	✓ [11]	-	-	✓	-	-	✓	-
	ELS - fish tissue	-	-	-	-	✓ [27]	✓ [12]	-	-	✓	-	-	✓	-
Sediment	Crayfish locations	-	-	✓ [31]	✓ [21]	✓ [27]	✓ [104]	-	✓	-	✓ [7]	✓	✓	-
Sediment	Invertebrate bioassay	-	✓ [33]	✓ [31]	✓ [21]	-	-	-	✓	-	✓ [7]	✓	✓	-
Surface Water		✓ [61]	✓ [33]	✓ [31]	✓ [20]	-	-	✓	-	-	-	-	-	✓ [11]
Floodplain Soil		-	✓ [33]	✓ [31]	✓ [21]	✓ [27]	✓ [104]	-	✓	-	-	✓	✓	-

Notes:

[a] For chemical groups, value in brackets is the number of constituents analyzed for within that group.

Analysis proposed, but not done due to inadequate tissue sample volume. These deviations are described in Section 4 of the text.

Table 3

Comparison of Human Health and Ecological Health-Based Project Action Goals [a] to Achievable Laboratory Limits - Soil

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER [b]	CAS Number	PAG [c]	QLs [d]	QL Exceeds PAG?	Magnitude of Exceedance [e]
Pesticide/PCBs (ng/g Dry Wt.)					
4,4'-DDD	50-29-3	0.52	0.53	Yes	1
4,4'-DDE	72-54-8	0.37	0.54	Yes	1.5
4,4'-DDT	72-55-9	0.52	0.53	Yes	1.0
Aldrin	309-00-2	0.10	0.53	Yes	5.2
alpha-BHC	319-84-6	0.06	0.53	Yes	9.0
alpha-Chlordane	5103-71-9	0.58	0.53	No	--
beta-BHC	319-85-7	0.21	0.53	Yes	2.6
delta-BHC	319-86-8	7.9	0.54	No	--
Dieldrin	60-57-1	0.0090	0.53	Yes	59
Endosulfan I	959-98-8	44.9	0.53	No	--
Endosulfan II	33213-65-9	44.9	0.53	No	--
Endosulfan Sulfate	1031-07-8	44.9	0.53	No	--
Endrin	72-20-8	6.5	0.53	No	--
Endrin Aldehyde	7421-93-4	6.5	0.53	No	--
Endrin Ketone	53494-70-5	6.5	0.53	No	--
gamma-BHC	58-89-9	0.28	0.53	Yes	1.9
gamma-Chlordane	5103-74-2	0.58	0.53	No	--
Heptachlor	76-44-8	0.21	0.53	Yes	2.5
Heptachlor Epoxide	1024-57-3	0.11	0.53	Yes	5.0
Methoxychlor	72-43-5	361	0.53	No	--
Aroclor-1016	12674-11-2	12.6	6.7	No	--
Aroclor-1221	1104-28-2	12.6	6.7	No	--
Aroclor-1232	11141-16-5	12.6	6.7	No	--
Aroclor-1242	53469-21-9	12.6	6.7	No	--
Aroclor-1248	12672-29-6	12.6	6.7	No	--
Aroclor-1254	11097-69-1	12.6	6.7	No	--
Aroclor-1260	11096-82-5	12.6	6.7	No	--
Aroclor-1268	11100-14-4	12.6	6.7	No	--

Table 3

Comparison of Human Health and Ecological Health-Based Project Action Goals [a] to Achievable Laboratory Limits - Soil

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER [b]	CAS Number	PAG [c]	QLs [d]	QL Exceeds PAG?	Magnitude of Exceedance [e]
SVOCs (PAHs) (ng/g Dry Wt.)					
2-Methylnaphthalene	91-57-6	1130	0.67	No	--
Acenaphthene	83-32-9	3010	0.67	No	--
Acenaphthylene	208-96-8	3010	0.67	No	--
Anthracene	120-12-7	3010	0.67	No	--
Benz[a]anthracene	56-55-3	1.8	0.67	No	--
Benzo[a]pyrene	50-32-8	0.18	0.67	Yes	4
Benzo[b]fluoranthene	205-99-2	1.8	0.67	No	--
Benzo[g,h,i]perylene	191-24-2	1690	0.67	No	--
Benzo[k]fluoranthene	207-08-9	18	0.67	No	--
Chrysene	218-01-9	180	0.67	No	--
Dibenz[a,h]anthracene	53-70-3	0.18	0.67	Yes	4
Dibenzofuran	132-64-9	3290	0.67	No	--
Fluoranthene	206-44-0	2260	0.67	No	--
Fluorene	86-73-7	2260	0.67	No	--
Indeno[1,2,3-cd]pyrene	193-39-5	1.8	0.67	No	--
Naphthalene	91-20-3	1130	0.67	No	--
Phenanthrene	85-01-8	1690	0.67	No	--
Pyrene	129-00-0	1690	0.67	No	--
Inorganics (ug/g Dry Wt.)					
Aluminum	7429-90-5	549	4	No	--
Antimony	7440-36-0	0.33	0.08	No	--
Arsenic	7440-38-2	0.10	2	Yes	21
Barium	7440-39-3	384	0.04	No	--
Beryllium	7440-41-7	1.7	0.016	No	--
Cadmium	7440-43-9	0.029	0.71	Yes	24
Chromium	7440-47-3	0.77	0.96	Yes	1
Cobalt	7440-48-4	7.4	1.34	No	--
Copper	7440-50-8	9.6	0.388	No	--

Table 3

Comparison of Human Health and Ecological Health-Based Project Action Goals [a] to Achievable Laboratory Limits - Soil

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER [b]	CAS Number	PAG [c]	QLs [d]	QL Exceeds PAG?	Magnitude of Exceedance [e]
Lead	7439-92-1	0.40	0.4	Yes	1
Manganese	7439-96-5	288	0.064	No	--
Mercury	7439-97-6	0.00073	0.008	Yes	11
Nickel	7440-02-0	3.6	3.12	No	--
Selenium	7782-49-2	0.27	1.06	Yes	4
Silver	7440-22-4	1.4	0.356	No	--
Thallium	7440-28-0	0.0017	0.08	Yes	48
Vanadium	7440-62-2	2.2	1.08	No	--
Zinc	7440-66-6	6.9	0.384	No	--
Methyl Mercury	22967-92-6	0.00024	0.0002	No	--
Dioxins (pg/g Dry Wt)					
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	0.0080	1	Yes	125
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	0.057	1	Yes	18
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	0.0090	5	Yes	556
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	0.47	5	Yes	11
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	0.0080	5	Yes	625
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	0.23	5	Yes	21
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	0.47	5	Yes	11
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	0.47	5	Yes	11
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	0.16	5	Yes	32
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	0.23	5	Yes	21
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	0.16	5	Yes	32
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	0.16	5	Yes	32
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	23.3	5	No	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	233	5	No	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	4.7	5	Yes	1
Octachlorodibenzo-p-dioxin	3268-87-9	4670	10	No	--
Octachlorodibenzofuran	39001-02-0	15600	10	No	--
1,2,4,5,7,8-Hexachloro-9-Xanthene (HCX)	NA	0.0014	NA	NA	NA

Table 3

Comparison of Human Health and Ecological Health-Based Project Action Goals [a] to Achievable Laboratory Limits - Soil

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER [b]	CAS Number	PAG [c]	QLs [d]	QL Exceeds PAG?	Magnitude of Exceedance [e]
PCB Congeners (pg/g Dry Wt.)					
PCB77	32598-13-3	0.21	100	Yes	483
PCB81	70362-50-4	0.18	100	Yes	559
PCB105	32598-14-4	1.6	40	Yes	26
PCB114	74472-37-0	0.31	100	Yes	321
PCB118	31508-00-6	4.1	100	Yes	25
PCB123	65510-44-3	1.6	100	Yes	64
PCB126	57465-28-8	0.0022	200	Yes	91743
PCB156	38380-08-4	0.31	100	Yes	321
PCB157	69782-90-7	0.31	100	Yes	321
PCB167	52663-72-6	101	100	No	--
PCB169	32774-16-6	0.016	100	Yes	6410
PCB189	39635-31-9	9.9	100	Yes	10

Notes:

[a] Analytes without PAGs have not been included in this table (e.g., magnesium)

[b] QLs for additional non-chemical parameters, including % lipid, grain size, and % moisture, have been provided in the QAPP; however, PAGs have not been established for comparison.

[c] PAG - Project Action Goal; represents the lower of the Project Action Human Health Goal and the Project Action Ecological Goal.

[d] QL - Achievable Laboratory Limit; QL determined from the low calibration standard and adjusted for sample processing volumes and factors.
(obtained from the QAPP Worksheet #9b; Battelle, 2001)

[e] The value indicates that the QL exceeds the PAG by this number of times.

ng = nanogram

pg = picogram

ug = microgram

Table 4

Comparison of Human Health and Ecological Health-Based Project Action Goals [a] to Achievable Laboratory Limits - Sediment

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER [b]	CAS Number	PAG [c]	QLs [d]	QL Exceeds PAG?	Magnitude of Exceedance [e]
Pesticide/PCBs (ng/g Dry Wt.)					
4,4'-DDD	50-29-3	0.52	0.67	Yes	1
4,4'-DDE	72-54-8	0.37	0.67	Yes	1.8
4,4'-DDT	72-55-9	0.52	0.67	Yes	1.3
Aldrin	309-00-2	0.10	0.67	Yes	6.6
alpha-BHC	319-84-6	0.06	0.67	Yes	11.4
alpha-Chlordane	5103-71-9	0.58	0.67	Yes	1.2
beta-BHC	319-85-7	0.21	0.67	Yes	3.3
delta-BHC	319-86-8	7.9	0.67	No	--
Dieldrin	60-57-1	0.0090	0.67	Yes	74
Endosulfan I	959-98-8	44.9	0.67	No	--
Endosulfan II	33213-65-9	44.9	0.67	No	--
Endosulfan Sulfate	1031-07-8	44.9	0.67	No	--
Endrin	72-20-8	6.5	0.67	No	--
Endrin Aldehyde	7421-93-4	6.5	0.67	No	--
Endrin Ketone	53494-70-5	6.5	0.67	No	--
gamma-BHC	58-89-9	0.28	0.67	Yes	2.4
gamma-Chlordane	5103-74-2	0.58	0.67	Yes	1.2
Heptachlor	76-44-8	0.21	0.67	Yes	3.1
Heptachlor Epoxide	1024-57-3	0.11	0.67	Yes	6.3
Methoxychlor	72-43-5	361	0.67	No	--
Aroclor-1016	12674-11-2	12.6	8.3	No	--
Aroclor-1221	1104-28-2	12.6	8.3	No	--
Aroclor-1232	11141-16-5	12.6	8.3	No	--
Aroclor-1242	53469-21-9	12.6	8.3	No	--
Aroclor-1248	12672-29-6	12.6	8.3	No	--
Aroclor-1254	11097-69-1	12.6	8.3	No	--
Aroclor-1260	11096-82-5	12.6	8.3	No	--
Aroclor-1268	11100-14-4	12.6	8.3	No	--

Table 4

Comparison of Human Health and Ecological Health-Based Project Action Goals [a] to Achievable Laboratory Limits - Sediment

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER [b]	CAS Number	PAG [c]	QLs [d]	QL Exceeds PAG?	Magnitude of Exceedance [e]
SVOCs (PAHs) (ng/g Dry Wt.)					
2-Methylnaphthalene	91-57-6	0.83	0.56	No	--
Acenaphthene	83-32-9	0.83	0.56	No	--
Acenaphthylene	208-96-8	0.83	0.56	No	--
Anthracene	120-12-7	0.83	0.56	No	--
Benz[a]anthracene	56-55-3	0.83	0.56	No	--
Benzo[a]pyrene	50-32-8	0.83	0.56	No	--
Benzo[b]fluoranthene	205-99-2	0.83	0.56	No	--
Benzo[g,h,i]perylene	191-24-2	0.83	0.56	No	--
Benzo[k]fluoranthene	207-08-9	0.83	0.56	No	--
Chrysene	218-01-9	0.83	0.56	No	--
Dibenz[a,h]anthracene	53-70-3	0.83	0.56	No	--
Dibenzofuran	132-64-9	0.83	0.56	No	--
Fluoranthene	206-44-0	0.83	0.56	No	--
Fluorene	86-73-7	0.83	0.56	No	--
Indeno[1,2,3-cd]pyrene	193-39-5	0.83	0.56	No	--
Naphthalene	91-20-3	0.83	0.56	No	--
Phenanthrene	85-01-8	0.83	0.56	No	--
Pyrene	129-00-0	0.83	0.56	No	--
Inorganics (ug/g Dry Wt.)					
Aluminum	7429-90-5	549	4	No	--
Antimony	7440-36-0	0.33	0.08	No	--
Arsenic	7440-38-2	0.10	2	Yes	21
Barium	7440-39-3	384	0.04	No	--
Beryllium	7440-41-7	1.7	0.016	No	--
Cadmium	7440-43-9	0.029	0.71	Yes	24
Chromium	7440-47-3	0.77	0.96	Yes	1
Cobalt	7440-48-4	7.4	1.34	No	--
Copper	7440-50-8	9.6	0.388	No	--
Lead	7439-92-1	0.40	0.4	Yes	1
Manganese	7439-96-5	288	0.064	No	--
Mercury	7439-97-6	0.00073	0.008	Yes	11

Table 4

Comparison of Human Health and Ecological Health-Based Project Action Goals [a] to Achievable Laboratory Limits - Sediment

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER [b]	CAS Number	PAG [c]	QLs [d]	QL Exceeds PAG?	Magnitude of Exceedance [e]
Nickel	7440-02-0	3.6	3.12	No	--
Selenium	7782-49-2	0.27	1.06	Yes	4
Silver	7440-22-4	1.4	0.356	No	--
Thallium	7440-28-0	0.0017	0.08	Yes	48
Vanadium	7440-62-2	2.2	1.08	No	--
Zinc	7440-66-6	6.9	0.384	No	--
Methyl Mercury	22967-92-6	0.00024	0.0002	No	--
Dioxins (pg/g Dry Wt)					
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	0.0080	1	Yes	125
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	0.057	1	Yes	18
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	0.0090	5	Yes	556
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	0.47	5	Yes	11
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	0.0080	5	Yes	625
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	0.23	5	Yes	21
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	0.47	5	Yes	11
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	0.47	5	Yes	11
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	0.16	5	Yes	32
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	0.23	5	Yes	21
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	0.16	5	Yes	32
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	0.16	5	Yes	32
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	23.3	5	No	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	233	5	No	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	4.7	5	Yes	1
Octachlorodibenzo-p-dioxin	3268-87-9	4670	10	No	--
Octachlorodibenzofuran	39001-02-0	15600	10	No	--
1,2,4,5,7,8-Hexachloro-9-Xanthene (HCX)	NA	0.0014	NA	NA	NA

Table 4

Comparison of Human Health and Ecological Health-Based Project Action Goals [a] to Achievable Laboratory Limits - Sediment

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER [b]	CAS Number	PAG [c]	QLs [d]	QL Exceeds PAG?	Magnitude of Exceedance [e]
PCB Congeners (pg/g Dry Wt.)					
PCB77	32598-13-3	0.21	100	Yes	483
PCB81	70362-50-4	0.18	100	Yes	559
PCB105	32598-14-4	1.6	40	Yes	26
PCB114	74472-37-0	0.31	100	Yes	321
PCB118	31508-00-6	4.1	100	Yes	25
PCB123	65510-44-3	1.6	100	Yes	64
PCB126	57465-28-8	0.0022	200	Yes	91743
PCB156	38380-08-4	0.31	100	Yes	321
PCB157	69782-90-7	0.31	100	Yes	321
PCB167	52663-72-6	101	100	No	--
PCB169	32774-16-6	0.016	100	Yes	6410
PCB189	39635-31-9	9.9	100	Yes	10

Notes:

[a] Analytes without PAGs have not been included in this table (e.g., magnesium, AVS/SEM)

[b] QLs for additional non-chemical parameters, including % lipid, grain size, and % moisture, have been provided in the QAPP; however, PAGs have not been established for comparison.

[c] PAG - Project Action Goal; represents the lower of the Project Action Human Health Goal and the Project Action Ecological Goal.

[d] QL - Achievable Laboratory Limit; QL determined from the low calibration standard and adjusted for sample processing volumes and factors.
(obtained from the QAPP Worksheet #9b; Battelle, 2001)

[e] The value indicates that the QL exceeds the PAG by this number of times.

ng = nanogram

pg = picogram

ug = microgram

Table 5

Comparison of Human Health and Ecological Health-Based Project Action Goals [a] to Achievable Laboratory Limits - Surface Water

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER[b]	CAS Number	PAG [c]	QLs [d]	QL Exceeds PAG?	Magnitude of Exceedance [e]
Pesticide/PCBs (ng/L)					
4,4'-DDD	50-29-3	8.3	4	No	--
4,4'-DDE	72-54-8	5.9	4	No	--
4,4'-DDT	72-55-9	1.0	4	Yes	4.0
Aldrin	309-00-2	1.3	4	Yes	3.1
alpha-BHC	319-84-6	39	4	No	--
alpha-Chlordane	5103-71-9	4.3	4	No	--
beta-BHC	319-85-7	140.0	4	No	--
Dieldrin	60-57-1	1.4	4	Yes	3
Endosulfan I	959-98-8	56	4	No	--
Endosulfan II	33213-65-9	56	4	No	--
Endosulfan Sulfate	1031-07-8	930	4	No	--
Endrin	72-20-8	2.3	4	Yes	2
Endrin Aldehyde	7421-93-4	760	4	No	--
gamma-BHC	58-89-9	80	4	No	--
gamma-Chlordane	5103-74-2	4.3	4	No	--
Heptachlor	76-44-8	2.1	4	Yes	1.9
Heptachlor Epoxide	1024-57-3	1.0	4	Yes	4.0
Technical chlordane	57-74-9	4.3	50	Yes	11.6
Toxaphene	8001-35-2	0.20	50	Yes	250.0
Aroclor-1016	12674-11-2	0.44	50	Yes	113.6
Aroclor-1221	1104-28-2	0.44	50	Yes	114
Aroclor-1232	11141-16-5	0.44	50	Yes	113.6
Aroclor-1242	53469-21-9	0.44	50	Yes	113.6
Aroclor-1248	12672-29-6	0.44	50	Yes	113.6
Aroclor-1254	11097-69-1	0.44	50	Yes	114
Aroclor-1260	11096-82-5	0.44	50	Yes	114
Aroclor-1268	11100-14-4	12.6	6.7	No	--

Table 5

Comparison of Human Health and Ecological Health-Based Project Action Goals [a] to Achievable Laboratory Limits - Surface Water

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER[b]	CAS Number	PAG [c]	QLs [d]	QL Exceeds PAG?	Magnitude of Exceedance [e]
SVOCs (PAHs) (ng/L)					
Acenaphthene	83-32-9	1900	5	No	--
Anthracene	120-12-7	9600000	5	No	--
Benz[a]anthracene	56-55-3	28	5	No	--
Benzo[a]pyrene	50-32-8	28	5	No	--
Benzo[b]fluoranthene	205-99-2	28	5	No	--
Benzo[k]fluoranthene	207-08-9	28	5	No	--
Chrysene	218-01-9	28	5	No	--
Dibenz[a,h]anthracene	53-70-3	28	5	No	--
Fluoranthene	206-44-0	44000	5	No	--
Fluorene	86-73-7	1300000	5	No	--
Indeno[1,2,3-cd]pyrene	193-39-5	28	5	No	--
Naphthalene	91-20-3	2600	5	No	--
Pyrene	129-00-0	960000	5	No	--
SVOCs (phthalates and phenols) (ng/L)					
2,4,5-Trichlorophenol	95-95-4	0.51	50	Yes	98
2,4-Dinitrophenol	51-28-5	0.69	50	Yes	72
Bis (2-ethylhexyl)phthalate	117-81-7	12	10		
Butyl benzyl phthalate	85-68-7	1.9	10	Yes	5
di-n-Butyl phthalate	84-74-2	2700	10	No	--
Pentachlorophenol	87-86-5	2.8	50	Yes	18
Phenol	108-95-2	5.6	10	Yes	2
Inorganics (ug/L)					
Aluminum	7429-90-5	87	40	No	--
Antimony	7440-36-0	10	0.04	No	--
Arsenic	7440-38-2	50	0.16	No	--
Beryllium	7440-41-7	0.17	0.212	Yes	1
Chromium	7440-47-3	10	12	Yes	1
Copper	7440-50-8	1300	3.24	No	--
Mercury	7439-97-6	0.012	0.0008	No	--
Nickel	7440-02-0	610	14.3	No	--
Selenium	7782-49-2	5.0	0.4	No	--
Silver	7440-22-4	1.9	2.68	Yes	1
Thallium	7440-28-0	1.0	0.016	No	--

Table 5

Comparison of Human Health and Ecological Health-Based Project Action Goals [a] to Achievable Laboratory Limits - Surface Water

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER[b]	CAS Number	PAG [c]	QLs [d]	QL Exceeds PAG?	Magnitude of Exceedance [e]
VOCs (ug/L)					
1,1,1,2-Tetrachloroethane	630-20-6	22	1	No	--
1,1,2,2-Tetrachloroethane	79-34-5	1.7	1	No	--
1,1,2-Trichloroethane	79-00-5	6.0	1	No	--
1,2,4-Trichlorobenzene	120-82-1	1.7	1	No	--
1,2-Dichlorobenzene	95-50-1	1.8	1	No	--
1,2-Dichloroethane	107-06-2	3.8	1	No	--
1,2-Dichloropropane	78-87-5	5.2	1	No	--
1,3-Dichlorobenzene	541-73-1	8.7	1	No	--
1,3-Dichloropropane	142-28-9	6.7	1	No	--
1,4-Dichlorobenzene	106-46-7	1.2	1	No	--
Benzene	71-43-2	5.9	1	No	--
Bromodichloromethane	75-27-4	2.7	1	No	--
Bromoform	75-25-2	33	1	No	--
Bromomethane	74-83-9	48	1	No	--
Carbon tertachloride	56-23-5	2.5	1	No	--
Chlorobenzene	108-90-7	18	1	No	--
Chloroform	75-00-3	32	1	No	--
Dibromochloromethane	96-12-8	4.1	1	No	--
Ethylbenzene	100-41-4	36	1	No	--
Hexachlorobutadiene	87-68-3	4.4	1	No	--
Methylene Chloride	75-09-2	47	1	No	--
Naphthalene	91-20-3	2.6	1	No	--
Toluene	108-88-3	14	1	No	--
Vinyl Chloride	75-01-4	20	1	No	--

Notes:

[a] Analytes without PAGs have not been included in this table (e.g., magnesium)

[b] QLs for additional non-chemical parameters, including % lipid, grain size, and % moisture, have been provided in the QAPP; however, PAGs have not been established for comparison.

[c] PAG - Project Action Goal, represents the lower of the Project Action Human Health Goal and the Project Action Ecological Goal.

[d] QL - Achievable Laboratory Limit; QL determined from the low calibration standard and adjusted for sample processing volumes and factors.
(obtained from the QAPP Worksheet #9b, Battelle, 2001)

[e] The value indicates that the QL exceeds the PAG by this number of times.

ng = nanogram

pg = picogram

ug = microgram

Table 6

Comparison of Human Health and Ecological Health-Based Project Action Goals [a] to Achievable Laboratory Limits - Tissue

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER [b]	CAS Number	PAG [c]	QLs [d]	QL Exceeds PAG?	Magnitude of Exceedance [e]
Pesticide/PCBs (ng/g Wet Wt.)					
4,4'-DDD	50-29-3	4.0	0.45	No	--
4,4'-DDE	72-54-8	2.8	0.45	No	--
4,4'-DDT	72-55-9	0.87	0.45	No	--
Aldrin	309-00-2	0.057	0.45	Yes	8.0
alpha-BHC	319-84-6	0.15	0.45	Yes	2.9
alpha-Chlordane	5103-71-9	2.8	0.45	No	--
beta-BHC	319-85-7	0.53	0.45	No	--
delta-BHC	319-86-8	20.6	0.45	No	--
Dieldrin	60-57-1	0.060	0.45	Yes	8
Endosulfan I	959-98-8	247	0.45	No	--
Endosulfan II	33213-65-9	247	0.45	No	--
Endosulfan Sulfate	1031-07-8	247	0.45	No	--
Endrin	72-20-8	11.5	0.45	No	--
Endrin Aldehyde	7421-93-4	11.5	0.45	No	--
Endrin Ketone	53494-70-5	11.5	0.45	No	--
gamma-BHC	58-89-9	0.74	0.45	No	--
gamma-Chlordane	5103-74-2	2.8	0.45	No	--
Heptachlor	76-44-8	0.21	0.45	Yes	2.1
Heptachlor Epoxide	1024-57-3	0.11	0.45	Yes	4.2
Methoxychlor	72-43-5	206	0.45	No	--
Toxaphene	8001-35-2	0.87	5.6	Yes	6.4
Aroclor-1016	12674-11-2	0.48	5.6	Yes	11.7
Aroclor-1221	1104-28-2	0.48	5.6	Yes	11.7
Aroclor-1232	11141-16-5	0.48	5.6	Yes	11.7
Aroclor-1242	53469-21-9	0.48	5.6	Yes	12
Aroclor-1248	12672-29-6	0.48	5.6	Yes	12
Aroclor-1254	11097-69-1	0.48	5.6	Yes	12
Aroclor-1260	11096-82-5	0.48	5.6	Yes	12
Aroclor-1268	11100-14-4	0.48	5.6	Yes	12

Table 6

Comparison of Human Health and Ecological Health-Based Project Action Goals [a] to Achievable Laboratory Limits - Tissue

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER [b]	CAS Number	PAG [c]	QLs [d]	QL Exceeds PAG?	Magnitude of Exceedance [e]
SVOCs (PAHs) (ng/g Wet Wt.)					
Biphenyl	92-52-4	2060		No	--
2-Methylnaphthalene	91-57-6	824	0.56	No	--
Acenaphthene	83-32-9	2200	0.56	No	--
Acenaphthylene	208-96-8	2200	0.56	No	--
Anthracene	120-12-7	2200	0.56	No	--
Benz[a]anthracene	56-55-3	1.3	0.56	No	--
Benzo[a]pyrene	50-32-8	0.13	0.56	Yes	4
Benzo[b]fluoranthene	205-99-2	1.3	0.56	No	--
Benzo[g,h,i]perylene	191-24-2	1240	0.56	No	--
Benzo[k]fluoranthene	207-08-9	13.2	0.56	No	--
Chrysene	218-01-9	132	0.56	No	--
Dibenz[a,h]anthracene	53-70-3	0.13	0.56	Yes	4
Dibenzofuran	132-64-9	150	0.56	No	--
Fluoranthene	206-44-0	1650	0.56	No	--
Fluorene	86-73-7	1650	0.56	No	--
Indeno[1,2,3-cd]pyrene	193-39-5	1.3	0.56	No	--
Naphthalene	91-20-3	824	0.56	No	--
Phenanthrene	85-01-8	1240	0.56	No	--
Pyrene	129-00-0	1240	0.56	No	--
Inorganics (ug/g Wet Wt.)					
Aluminum	7429-90-5	40	4	No	--
Antimony	7440-36-0	0.082	0.12	Yes	1
Arsenic	7440-38-2	0.0032	0.12	Yes	38
Barium	7440-39-3	14.4	0.04	No	--
Beryllium	7440-41-7	0.41	0.016	No	--
Cadmium	7440-43-9	0.015	0.712	Yes	47
Chromium	7440-47-3	0.62	0.96	Yes	2
Cobalt	7440-48-4	22	1.34	No	--
Copper	7440-50-8	2.5	0.26	No	--
Lead	7439-92-1	0.15		No	--
Manganese	7439-96-5	28.8	0.064	No	--

Table 6

Comparison of Human Health and Ecological Health-Based Project Action Goals [a] to Achievable Laboratory Limits - Tissue

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER [b]	CAS Number	PAG [c]	QLs [d]	QL Exceeds PAG?	Magnitude of Exceedance [e]
Mercury	7439-97-6	0.062	0.008	No	--
Molybdenum	13939-06-5	1.0	1.152	Yes	1
Nickel	7440-02-0	4.1	1.14	No	--
Selenium	7782-49-2	1.0	1.6	Yes	2
Silver	7440-22-4	1.0	0.22	No	--
Thallium	7440-28-0	0.017	0.08	Yes	5
Vanadium	7440-62-2	0.10	0.64	Yes	6
Zinc	7440-66-6	61.8	0.384	No	--
Methyl Mercury	22967-92-6	0.021	0.01	No	--
Dioxins (pg/g Wet Wt)					
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	0.00070	0.5	Yes	714
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	0.0060	0.5	Yes	83
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	0.00070	2.5	Yes	3571
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	0.014	2.5	Yes	179
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	0.0014	2.5	Yes	1786
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	0.0070	2.5	Yes	357
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	0.0070	2.5	Yes	357
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	0.0070	2.5	Yes	357
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	0.0070	2.5	Yes	357
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	0.0070	2.5	Yes	357
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	0.0070	2.5	Yes	357
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	0.0070	2.5	Yes	357
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	0.070	2.5	Yes	36
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	0.070	2.5	Yes	36
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	0.070	2.5	Yes	36
Octachlorodibenzo-p-dioxin	3268-87-9	7.0	5	No	--
Octachlorodibenzofuran	39001-02-0	7.0	5	No	--

Table 6

Comparison of Human Health and Ecological Health-Based Project Action Goals [a] to Achievable Laboratory Limits - Tissue

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER [b]	CAS Number	PAG [c]	QLs [d]	QL Exceeds PAG?	Magnitude of Exceedance [e]
PCB Congeners (pg/g Wet Wt.)					
PCB77	32598-13-3	7.0	50	Yes	7
PCB81	70362-50-4	7.0	50	Yes	7
PCB105	32598-14-4	7.0	20	Yes	3
PCB114	74472-37-0	1.4	50	Yes	36
PCB118	31508-00-6	7.0	50	Yes	7
PCB123	65510-44-3	7.0	50	Yes	7
PCB126	57465-28-8	0.0070	100	Yes	14286
PCB156	38380-08-4	1.4	50	Yes	36
PCB157	69782-90-7	1.4	50	Yes	36
PCB167	52663-72-6	70.0	50	No	--
PCB169	32774-16-6	0.070	50	Yes	714
PCB189	39635-31-9	7.0	50	Yes	7

Notes:

[a] Analytes without PAGs have not been included in this table (e.g., magnesium)

[b] QLs for additional non-chemical parameters, including % lipid, grain size, and % moisture, have been provided in the QAPP; however, PAGs have not been established for comparison.

[c] PAG - Project Action Goal; represents the lower of the Project Action Human Health Goal and the Project Action Ecological Goal.

[d] QL - Achievable Laboratory Limit, QL determined from the low calibration standard and adjusted for sample processing volumes and factors.
(obtained from the QAPP Worksheet #9b; Battelle, 2001)

[e] The value indicates that the QL exceeds the PAG by this number of times.

ng = nanogram

pg = picogram

ug = microgram

Table A-1
Summary Statistics and Analytical Results for Floodplain Soil - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	RWR-FP-5001-0000-01 7/17/2001	RWR-FP-5002-0000-01 7/16/2001
Semivolatile Organics (ug/Kg)									
1,1'-Biphenyl	4	4			26.02	61.7	45.80	61.7	58.57
2,4,5-Trichlorophenol	0	4	3000	5200			1837.50	5200 U	3300 U
2,4-Dinitrophenol	0	3	3000	5200			1900.00	5200 U	R
2-Methylnaphthalene	4	4			72.82	170.22	107.10	83.4	170.22 J
2-Nitrophenol	0	4	580	1000			356.25	1000 U	640 U
4-Methylphenol	0	4	580	1000			356.25	1000 U	640 U
4-Nitrophenol	0	4	3000	5200			1837.50	5200 U	3300 U
Acenaphthene	4	4			186.26	563.84	290.34	186.26	563.84 J
Acenaphthylene	4	4			196.67	497.49	317.65	497.49	210.65 J
Anthracene	4	4			480.2	982.95	707.41	699.86	982.95
Benzaldehyde	4	4			60.52	172.29	108.15	87.69	112.08
Benzo(a)anthracene	4	4			2292.65	3410.86	3093.72	3359.99	3311.39
Benzo(a)pyrene	4	4			2291.23	3418.03	3077.18	3418.03	3204.84
Benzo(b)fluoranthene	4	4			2315.49	4288.61	3452.07	4288.61	3263.74
Benzo(g,h,i)perylene	4	4			1676	2871.39	2336.03	2871.39	2183.89
Benzo(k)fluoranthene	4	4			2283.94	3863.54	3201.39	3863.54	3098.9
bis(2-Ethylhexyl)phthalate	4	4			800	1900	1500.00	1900 J	1600
Butylbenzylphthalate	4	4			120	580	402.50	540 J	370 J
Carbazole	4	4			420	860	675.00	420 J	860 J
Chrysene	4	4			2747.66	4488.51	3844.74	4488.51	3844.25
Dibenzo(a,h)anthracene	4	4			435.44	728.51	614.85	728.51	590.75 J
Dibenzofuran	4	4			160.55	399.25	229.80	160.55	399.25
Di-n-Butylphthalate	4	4			61	170	113.75	150 J	74 J
Di-n-octylphthalate	1	4	580	1000	83	83	297.00	1000 UJ	83 J
Fluoranthene	4	4			5227.48	7731.24	7048.33	7731.24	7686.74 J
Fluorene	4	4			256.25	658.99	373.65	256.25	658.99 J
Indeno(1,2,3-cd)pyrene	4	4			1768.19	3092.9	2518.86	3092.9	2384.11
Naphthalene	4	4			103.75	302.18	170.21	123.24	302.18 J
Pentachlorophenol	0	4	3000	5200			1837.50	5200 U	3300 U
Phenanthrene	4	4			3072.07	5301.36	3955.43	3485.83	5301.36
Phenol	0	4	580	1000			356.25	1000 U	640 U
Pyrene	4	4			4335.06	6372.72	5807.92	6313.86	6210.02
Total PAH	4	4			29945.97	45711.17	41192.47	45711.17	44426.64
Pesticides/PCBs (ug/Kg)									
4,4'-DDD	4	4			4.64	15.17	8.23	15.17	4.64 J
4,4'-DDE	4	4			5.19	20.61	13.35	20.61	5.19 J
4,4'-DDT	4	4			2.69	18.27	8.54	6.59	2.69 J
Aldrin	0	4	1.24	2.15			0.79	2.15 U	1.39 U

Table A-1
Summary Statistics and Analytical Results for Floodplain Soil - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	RWR-FP-5001-0000-01 7/17/2001	RWR-FP-5002-0000-01 7/16/2001
alpha-BHC	0	4	1.24	2.15			0.79	2.15 U	1.39 U
alpha-Chlordane	4	4			7.81	35.92	17.80	35.92	16.7 J
Aroclor, Total	4	4			250.9	922.32	603.87	922.32	250.9
Aroclor-1016	0	4	15.51	26.93			9.90	26.93 U	17.35 U
Aroclor-1221	0	4	15.51	26.93			9.90	26.93 U	17.35 U
Aroclor-1232	0	4	15.51	26.93			9.90	26.93 U	17.35 U
Aroclor-1242	0	4	15.51	26.93			9.90	26.93 U	17.35 U
Aroclor-1248	0	4	15.51	26.93			9.90	26.93 U	17.35 U
Aroclor-1254	4	4			207.34	838.72	519.98	838.72	207.34
Aroclor-1260	0	4	15.51	26.93			9.90	26.93 U	17.35 U
Aroclor-1268	4	4			43.56	139.53	83.89	83.6	43.56
beta-BHC	0	4	1.24	2.15			0.79	2.15 U	1.39 U
delta-BHC	0	4	1.24	2.15			0.79	2.15 U	1.39 U
Dieldrin	4	4			4.24	9.41	6.29	9.41	4.3 J
Endosulfan I	0	4	1.24	2.15			0.79	2.15 U	1.39 UJ
Endosulfan II	0	4	1.24	2.15			0.79	2.15 U	1.39 U
Endosulfan Sulfate	3	4	2.15	2.15	4.09	12.69	6.50	2.15 U	4.09 J
Endrin	0	4	1.24	2.15			0.79	2.15 U	1.39 U
Endrin Aldehyde	0	4	1.24	2.15			0.79	2.15 U	1.39 U
Endrin Ketone	0	4	1.24	2.15			0.79	2.15 U	1.39 U
gamma-BHC	0	4	1.24	2.15			0.79	2.15 U	1.39 U
gamma-Chlordane	0	4	1.24	2.15			0.79	2.15 U	1.39 UJ
Heptachlor	0	4	1.24	2.15			0.79	2.15 U	1.39 U
Heptachlor Epoxide	1	4	1.24	2.15	0.74	0.74	0.78	2.15 U	1.39 U
Methoxychlor	0	4	1.24	2.15			0.79	2.15 U	1.39 U
Technical Chlordane	4	4			278.2	735.38	430.70	735.38	347.23
Toxaphene	0	4	31.03	53.85			19.79	53.85 U	34.7 U
Inorganics (mg/Kg)									
Aluminum	4	4			10971	21793	15899	21793 J	12231 J
Antimony	4	4			0.462	0.982	0.624	0.521 J	0.462 J
Arsenic	4	4			5.58	12.2	7.72	5.58	6.34
Barium	4	4			181	282	231	239	282
Beryllium	4	4			1.9	4.46	3.08	4.46	2.48
Cadmium	4	4			0.711	3.46	1.63	3.46	1.06
Chromium	4	4			171	291	231	291	171
Cobalt	4	4			9.57	20.3	13.1	9.57	12.5
Copper	4	4			109	324	205	324	109
Iron	4	4			21383	37162	27261	24538	25960
Lead	4	4			316	591	450	591	319

Table A-1
Summary Statistics and Analytical Results for Floodplain Soil - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	RWR-FP-5001-0000-01 7/17/2001	RWR-FP-5002-0000-01 7/16/2001
Manganese	4	4			439	4126	1841	511	2286
Mercury	4	4			0.381	0.811	0.582	0.811	0.381
Mercury (methyl)	4	4			0.000326	0.000762	0.000493	0.000326 J	0.000762 J
Molybdenum	4	4			34.8	87.7	54.0	34.8 J	37 J
Nickel	4	4			25.5	387	120	387	27.4
Selenium	3	4	0.611	0.611	0.687	0.963	0.704	0.862 J	0.611 U
Silver	4	4			1.23	3.8	2.18	3.8	1.38
Thallium	4	4			0.345	0.585	0.461	0.566	0.345
Vanadium	4	4			53.6	103	82.3	90.7	53.6
Zinc	4	4			158	497	288	497	248
Dioxins/Furans (ug/Kg)									
HCX	4	4			0.08577	0.41706	0.19333	0.08577 J	0.11704 J
TCX	0	0						R	R
2,3,7,8-TCDD	1	4	0.00352	0.01842	0.0567	0.0567	0.01749	0.0567	0.00352 U
1,2,3,7,8-PeCDD	4	4			0.00266	0.00805	0.00513	0.00672 J	0.00309 J
1,2,3,4,7,8-HxCDD	4	4			0.00424	0.01228	0.00833	0.01131 J	0.0055 J
1,2,3,6,7,8-HxCDD	4	4			0.01811	0.04643	0.03310	0.04643	0.02198
1,2,3,7,8,9-HxCDD	4	4			0.01394	0.03504	0.02382	0.031	0.0153
1,2,3,4,6,7,8-HpCDD	4	4			0.27936	1.02763	0.64202	0.87788	0.38319
OCDD	4	4			2.19127	8.33815	4.71742	5.93093	2.40931
2,3,7,8-TCDF	4	4			0.01029	0.11028	0.04335	0.11028 J	0.01029 J
1,2,3,7,8-PeCDF	4	4			0.00294	0.00794	0.00507	0.00521 J	0.00294 J
2,3,4,7,8-PeCDF	3	4	0.02446	0.02446	0.00663	0.01171	0.00954	0.01171 J	0.00663 J
1,2,3,4,7,8-HxCDF	4	4			0.0192	0.05059	0.03033	0.03109	0.0192
1,2,3,6,7,8-HxCDF	4	4			0.01297	0.03295	0.02078	0.02362	0.01297 J
2,3,4,6,7,8-HxCDF	4	4			0.00968	0.02481	0.01508	0.01554 J	0.01027 J
1,2,3,7,8,9-HxCDF	3	4	0.00353	0.00353	0.00041	0.00107	0.00096	0.00107 J	0.00061 J
1,2,3,4,6,7,8-HpCDF	4	4			0.14191	0.48157	0.26845	0.3021	0.14191
1,2,3,4,7,8,9-HpCDF	4	4			0.00693	0.02157	0.01270	0.01501 J	0.00693 J
OCDF	4	4			0.13373	1.25355	0.52044	0.47782	0.13373 J
Total TCDD	0	4	0.00514	0.06294			0.01197	0.06294 UJ	0.00594 UJ
Total PeCDD	4	4			0.01697	0.03478	0.02903	0.03478 J	0.01697 J
Total HxCDD	4	4			0.12755	0.31981	0.21452	0.26645 J	0.14425 J
Total HpCDD	4	4			0.56545	2.02814	1.25385	1.68853 J	0.73327 J
Total TCDF	4	4			0.02831	0.12881	0.07987	0.11028 J	0.02831 J
Total PeCDF	4	4			0.16195	0.65109	0.35190	0.3869 J	0.16195 J
Total HxCDF	4	4			0.21632	0.61693	0.36739	0.41568 J	0.21632 J
Total HpCDF	4	4			0.2876	1.249	0.63063	0.67898 J	0.2876 J
Toxicity Equivalency (Dioxins, Furans, HCX)	4	4			0.0205	0.109	0.0501	0.109	0.0218

Table A-1
Summary Statistics and Analytical Results for Floodplain Soil - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	RWR-FP-5001-0000-01 7/17/2001	RWR-FP-5002-0000-01 7/16/2001
PCB Congeners (ug/Kg)									
2-Monochlorobiphenyl (1)	1	1			0.06167	0.06167	0.06167		0.06167 J
4-Chlorobiphenyl (3)	1	1			0.09923	0.09923	0.09923		0.09923 J
2,2'-Dichlorobiphenyl (4)	1	1			0.80503	0.80503	0.80503		0.80503 J
2,3-Dichlorobiphenyl (5)	1	1			0.09878	0.09878	0.09878		0.09878 J
2,3'-Dichlorobiphenyl (6)	1	1			0.73743	0.73743	0.73743		0.73743 J
2,4-Dichlorobiphenyl (7)	1	1			0.11977	0.11977	0.11977		0.11977 J
2,4'-Dichlorobiphenyl (8)	1	1			3.58234	3.58234	3.58234		3.58234 J
2,5-Dichlorobiphenyl (9)	1	1			0.24	0.24	0.24000		0.24 J
2,6-Dichlorobiphenyl (10)	1	1			0.03945	0.03945	0.03945		0.03945 J
3,4-Dichlorobiphenyl (12)	1	1			0.24342	0.24342	0.24342		0.24342 J
2,2',3'-Trichlorobiphenyl (16)	1	1			2.31589	2.31589	2.31589		2.31589 J
2,2',4-Trichlorobiphenyl (17)	1	1			2.41576	2.41576	2.41576		2.41576 J
2,2',5-Trichlorobiphenyl (18)	1	1			2.18236	2.18236	2.18236		2.18236 J
2,2',6-Trichlorobiphenyl (19)	1	1			0.58127	0.58127	0.58127		0.58127 J
2,3,3'-Trichlorobiphenyl (20)	1	1			8.99815	8.99815	8.99815		8.99815 J
2,3,4'-Trichlorobiphenyl (22)	1	1			3.25385	3.25385	3.25385		3.25385 J
2,3,6-Trichlorobiphenyl (24)	1	1			0.44674	0.44674	0.44674		0.44674 J
2,3',4-Trichlorobiphenyl (25)	1	1			0.43219	0.43219	0.43219		0.43219 J
2,3',5-Trichlorobiphenyl (26)	1	1			1.09534	1.09534	1.09534		1.09534 J
2,4',5-Trichlorobiphenyl (31)	1	1			4.0322	4.0322	4.03220		4.0322 J
2,4',6-Trichlorobiphenyl (32)	1	1			0.79627	0.79627	0.79627		0.79627 J
2,2',3,3'-Tetrachlorobiphenyl (40)	1	1			3.29677	3.29677	3.29677		3.29677 J
2,2',3,4'-Tetrachlorobiphenyl (42)	1	1			1.54495	1.54495	1.54495		1.54495 J
2,2',3,5-Tetrachlorobiphenyl (43)	1	1			5.38647	5.38647	5.38647		5.38647 J
2,2',3,5'-Tetrachlorobiphenyl (44)	1	1			4.21199	4.21199	4.21199		4.21199 J
2,2',3,6-Tetrachlorobiphenyl (45)	1	1			1.17033	1.17033	1.17033		1.17033 J
2,2',3,6'-Tetrachlorobiphenyl (46)	1	1			0.45003	0.45003	0.45003		0.45003 J
2,2',4,5-Tetrachlorobiphenyl (48)	1	1			0.92776	0.92776	0.92776		0.92776 J
2,2',4,5'-Tetrachlorobiphenyl (49)	1	1			2.10611	2.10611	2.10611		2.10611 J
2,2',4,6-Tetrachlorobiphenyl (50)	1	1			0.92847	0.92847	0.92847		0.92847 J
2,3,3',4'-Tetrachlorobiphenyl (56)	1	1			0.86104	0.86104	0.86104		0.86104 J
2,3,3',6-Tetrachlorobiphenyl (59)	1	1			0.40694	0.40694	0.40694		0.40694 J
2,3,4,4'-Tetrachlorobiphenyl (60)	1	1			0.24141	0.24141	0.24141		0.24141 J
2,3,4,5-Tetrachlorobiphenyl (61)	1	1			3.10409	3.10409	3.10409		3.10409 J
2,3,4',5-Tetrachlorobiphenyl (63)	1	1			0.03272	0.03272	0.03272		0.03272 J
2,3,4',6-Tetrachlorobiphenyl (64)	1	1			1.57756	1.57756	1.57756		1.57756 J
2,3',4,4'-Tetrachlorobiphenyl (66)	1	1			2.55948	2.55948	2.55948		2.55948 J
3,3',4,4'-Tetrachlorobiphenyl (77)	1	1			0.39357	0.39357	0.39357		0.39357 J

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	RWR-FP-5001-0000-01 7/17/2001	RWR-FP-5002-0000-01 7/16/2001
3,4,4',5-Tetrachlorobiphenyl (81)	0	1	0.096	0.096			0.04800		0.096 UJ
2,2',3,3',4-Pentachlorobiphenyl (82)	1	1			3.68549	3.68549	3.68549		3.68549 J
2,2',3,3',5-Pentachlorobiphenyl (83)	1	1			6.56009	6.56009	6.56009		6.56009 J
2,2',3,3',6-Pentachlorobiphenyl (84)	1	1			8.05484	8.05484	8.05484		8.05484 J
2,2',3,4,4'-Pentachlorobiphenyl (85)	1	1			3.20073	3.20073	3.20073		3.20073 J
2,2',3,4,5-Pentachlorobiphenyl (86)	1	1			13.20021	13.20021	13.20021		13.20021 J
2,2',3,4,6-Pentachlorobiphenyl (88)	1	1			3.37677	3.37677	3.37677		3.37677 J
2,2',3,4,6'-Pentachlorobiphenyl (89)	1	1			0.11235	0.11235	0.11235		0.11235 J
2,2',3,4',5-Pentachlorobiphenyl (90)	1	1			11.07859	11.07859	11.07859		11.07859 J
2,2',3,5,5'-Pentachlorobiphenyl (92)	1	1			2.7982	2.7982	2.79820		2.7982 J
2,2',3,5,6-Pentachlorobiphenyl (93)	1	1			17.80039	17.80039	17.80039		17.80039 J
2,3,3',4,4'-Pentachlorobiphenyl (105)	1	1			4.41497	4.41497	4.41497		4.41497 J
2,3,3',4,5-Pentachlorobiphenyl (106)	1	1			0.93745	0.93745	0.93745		0.93745 J
2,3,3',4',5'-Pentachlorobiphenyl (108)	1	1			0.73618	0.73618	0.73618		0.73618 J
2,3,3',4',6-Pentachlorobiphenyl (110)	1	1			34.32638	34.32638	34.32638		34.32638 J
2,3,4,4',5-Pentachlorobiphenyl (114)	1	1			0.18779	0.18779	0.18779		0.18779 J
2,3',4,4',5-Pentachlorobiphenyl (118)	1	1			14.77995	14.77995	14.77995		14.77995 J
3,3',4,4',5-Pentachlorobiphenyl (126)	1	1			0.34063	0.34063	0.34063		0.34063 J
2,2',3,3',4,4'-Hexachlorobiphenyl (128)	1	1			8.71691	8.71691	8.71691		8.71691 J
2,2',3,3',4,5-Hexachlorobiphenyl (129)	1	1			29.84594	29.84594	29.84594		29.84594 J
2,2',3,3',4,5'-Hexachlorobiphenyl (130)	1	1			2.33884	2.33884	2.33884		2.33884 J
2,2',3,3',4,6-Hexachlorobiphenyl (131)	1	1			0.48272	0.48272	0.48272		0.48272 J
2,2',3,3',4,6'-Hexachlorobiphenyl (132)	1	1			17.96661	17.96661	17.96661		17.96661 J
2,2',3,3',5,6-Hexachlorobiphenyl (134)	1	1			2.52531	2.52531	2.52531		2.52531 J
2,2',3,3',5,6'-Hexachlorobiphenyl (135)	1	1			7.49559	7.49559	7.49559		7.49559 J
2,2',3,3',6,6'-Hexachlorobiphenyl (136)	1	1			5.21951	5.21951	5.21951		5.21951 J
2,2',3,4,4',5-Hexachlorobiphenyl (137)	1	1			4.39408	4.39408	4.39408		4.39408 J
2,2',3,4,5,5'-Hexachlorobiphenyl (141)	1	1			3.25807	3.25807	3.25807		3.25807 J
2,2',3,4,5',6-Hexachlorobiphenyl (144)	0	1	0.0963	0.0963			0.04815		0.0963 UJ
2,2',3,4',5,5'-Hexachlorobiphenyl (146)	1	1			1.18174	1.18174	1.18174		1.18174 J
2,2',3,4',5,6-Hexachlorobiphenyl (147)	1	1			21.33722	21.33722	21.33722		21.33722 J
2,2',4,4',5,5'-Hexachlorobiphenyl (153)	1	1			7.67713	7.67713	7.67713		7.67713 J
2,3,3',4,4',5-Hexachlorobiphenyl (156)	1	1			2.52639	2.52639	2.52639		2.52639 J
2,3,3',4,4',6-Hexachlorobiphenyl (158)	1	1			2.38598	2.38598	2.38598		2.38598 J
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	1	1			1.09031	1.09031	1.09031		1.09031 J
3,3',4,4',5,5'-Hexachlorobiphenyl (169)	0	1	0.0963	0.0963			0.04815		0.0963 UJ
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	1	1			7.80164	7.80164	7.80164		7.80164 J
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)	1	1			1.94133	1.94133	1.94133		1.94133 J
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)	1	1			0.62098	0.62098	0.62098		0.62098 J

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	RWR-FP-5001-0000-01 7/17/2001	RWR-FP-5002-0000-01 7/16/2001
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)	1	1			8.30421	8.30421	8.30421		8.30421 J
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)	1	1			0.10577	0.10577	0.10577		0.10577 J
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)	1	1			0.68504	0.68504	0.68504		0.68504 J
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)	1	1			3.22518	3.22518	3.22518		3.22518 J
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)	1	1			0.77451	0.77451	0.77451		0.77451 J
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)	1	1			4.95613	4.95613	4.95613		4.95613 J
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)	0	1	0.19261	0.19261			0.09631		0.19261 UJ
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)	1	1			1.36684	1.36684	1.36684		1.36684 J
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)	0	1	0.01961	0.01961			0.00981		0.01961 UJ
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)	1	1			0.28095	0.28095	0.28095		0.28095 J
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	1	1			2.81425	2.81425	2.81425		2.81425 J
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	1	1			0.14433	0.14433	0.14433		0.14433 J
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)	1	1			0.9734	0.9734	0.97340		0.9734 J
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	1	1			0.12793	0.12793	0.12793		0.12793 J
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	1	1			1.89239	1.89239	1.89239		1.89239 J
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	1	1			0.91833	0.91833	0.91833		0.91833 J
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)	1	1			1.24699	1.24699	1.24699		1.24699 J
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)	1	1			0.04508	0.04508	0.04508		0.04508 J
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)	1	1			7.61985	7.61985	7.61985		7.61985 J
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (200)	1	1			0.56363	0.56363	0.56363		0.56363 J
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)	1	1			0.41837	0.41837	0.41837		0.41837 J
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)	1	1			2.27038	2.27038	2.27038		2.27038 J
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	1	1			0.10246	0.10246	0.10246		0.10246 J
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	1	1			11.30434	11.30434	11.30434		11.30434 J
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	1	1			0.78162	0.78162	0.78162		0.78162 J
Decachlorobiphenyl (209)	1	1			16.45018	16.45018	16.45018		16.45018 J
PCB Congeners, Total	1	1			383.5463	383.5463	383.54630		383.5463 J
Toxicity Equivalency (PCB)	1	1			0.0374	0.0374	0.0374		0.0374
Grain Size (%)									
Percent Coarse Sand	5	5			0	0.19	0.046	0	0.19
Percent Fine Sand	5	5			3.42	50.5	32.01	3.42	45.15
Percent Gravel	5	5			0	0	0	0	0
Percent Medium Sand	5	5			0.35	5.02	2.582	0.35	2.6
Percent Clay	5	5			11	18	13.62	18	12
Percent Silt	5	5			33.38	78.24	51.744	78.24	40.06
Other (%)									
Total Organic Carbon	5	5			5.35	10.91	7.63	10.91	5.35
% Water	4	4			79	221	124	221	99
Solids, Percent	4	4			32.4	56.7	48.2	32.4	51.5

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Percent_moisture	4	4			43.3	67.6	51.8	67.6	48.5

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* 106(12):775-792.

Table A-1
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PARAMETER	RWR-FP-5003-0000-01 7/17/2001 DUPLICATE	RWR-FP-5003-0000-01 7/17/2001	RWR-FP-5004-0000-01 7/19/2001
Semivolatile Organics (ug/Kg)			
1,1'-Biphenyl		26.02	36.9
2,4,5-Trichlorophenol		3000 U	3200 U
2,4-Dinitrophenol		3000 U	3200 UJ
2-Methylnaphthalene		72.82	101.96
2-Nitrophenol		580 U	630 U
4-Methylphenol		580 U	630 U
4-Nitrophenol		3000 U	3200 U
Acenaphthene		195.04	216.23
Acenaphthylene		196.67	365.79
Anthracene		480.2	666.64
Benzaldehyde		60.52	172.29
Benzo(a)anthracene		2292.65	3410.86
Benzo(a)pyrene		2291.23	3394.61
Benzo(b)fluoranthene		2315.49	3940.44
Benzo(g,h,i)perylene		1676	2612.84
Benzo(k)fluoranthene		2283.94	3559.19
bis(2-Ethylhexyl)phthalate		800 J	1700
Butylbenzylphthalate		120 J	580 J
Carbazole		830 J	590 J
Chrysene		2747.66	4298.55
Dibenzo(a,h)anthracene		435.44	704.69
Dibenzofuran		163.56	195.84
Di-n-Butylphthalate		61 J	170 J
Di-n-octylphthalate		580 UJ	630 UJ
Fluoranthene		5227.48	7547.84
Fluorene		262.7	316.66
Indeno(1,2,3-cd)pyrene		1768.19	2830.24
Naphthalene		103.75	151.65
Pentachlorophenol		3000 U	3200 U
Phenanthrene		3072.07	3962.44
Phenol		580 U	630 U
Pyrene		4335.06	6372.72
Total PAH		29945.97	44686.1
Pesticides/PCBs (ug/Kg)			
4,4'-DDD		6.33	6.78 J
4,4'-DDE		7.65	19.96 J
4,4'-DDT		6.6	18.27 J
Aldrin		1.24 U	1.55 U

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alpha-BHC		1.24 U	1.55 U
alpha-Chlordane		7.81	10.76 J
Aroclor, Total		463.49	778.76 J
Aroclor-1016		15.51 U	19.38 U
Aroclor-1221		15.51 U	19.38 U
Aroclor-1232		15.51 U	19.38 U
Aroclor-1242		15.51 U	19.38 U
Aroclor-1248		15.51 U	19.38 U
Aroclor-1254		394.64	639.23 J
Aroclor-1260		15.51 U	19.38 U
Aroclor-1268		68.85	139.53 J
beta-BHC		1.24 U	1.55 U
delta-BHC		1.24 U	1.55 U
Dieldrin		4.24	7.19 J
Endosulfan I		1.24 U	1.55 U
Endosulfan II		1.24 U	1.55 U
Endosulfan Sulfate		8.15	12.69 J
Endrin		1.24 U	1.55 U
Endrin Aldehyde		1.24 U	1.55 U
Endrin Ketone		1.24 U	1.55 U
gamma-BHC		1.24 U	1.55 U
gamma-Chlordane		1.24 U	1.55 U
Heptachlor		1.24 U	1.55 U
Heptachlor Epoxide		1.24 U	0.74 J
Methoxychlor		1.24 U	1.55 U
Technical Chlordane		278.2	361.99 J
Toxaphene		31.03 U	38.77 U
Inorganics (mg/Kg)			
Aluminum		10971 J	18600 J
Antimony		0.532 J	0.982 J
Arsenic		6.74	12.2
Barium		181	222
Beryllium		1.9	3.47
Cadmium		0.711	1.28
Chromium		214	246
Cobalt		10.1	20.3
Copper		132	255
Iron		21383	37162
Lead		316	574

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PARAMETER	RWR-FP-5003-0000-01 7/17/2001 DUPLICATE	RWR-FP-5003-0000-01 7/17/2001	RWR-FP-5004-0000-01 7/19/2001
Manganese		439	4126
Mercury		0.423	0.712
Mercury (methyl)		0.000535 J	0.000348 J
Molybdenum		87.7 J	56.6 J
Nickel		25.5	39
Selenium		0.687 J	0.963 J
Silver		1.23	2.31
Thallium		0.346	0.585
Vanadium		81.7	103
Zinc		158	249
Dioxins/Furans (ug/Kg)			
HCX		0.15346 J	0.41706 J
TCX		R	R
2,3,7,8-TCDD		0.00457 U	0.01842 U
1,2,3,7,8-PeCDD		0.00266 J	0.00805 J
1,2,3,4,7,8-HxCDD		0.00424 J	0.01228 J
1,2,3,6,7,8-HxCDD		0.01811	0.04586 J
1,2,3,7,8,9-HxCDD		0.01394	0.03504 J
1,2,3,4,6,7,8-HpCDD		0.27936	1.02763
OCDD		2.19127	8.33815
2,3,7,8-TCDF		0.01225 J	0.04057 J
1,2,3,7,8-PeCDF		0.00418 J	0.00794 J
2,3,4,7,8-PeCDF		0.00758 J	0.02446 U
1,2,3,4,7,8-HxCDF		0.02044	0.05059 J
1,2,3,6,7,8-HxCDF		0.01357	0.03295 J
2,3,4,6,7,8-HxCDF		0.00968 J	0.02481 J
1,2,3,7,8,9-HxCDF		0.00041 J	0.00353 U
1,2,3,4,6,7,8-HpCDF		0.14823	0.48157
1,2,3,4,7,8,9-HpCDF		0.0073 J	0.02157 J
OCDF		0.21667	1.25355
Total TCDD		0.00514 UJ	0.02171 UJ
Total PeCDD		0.03166 J	0.03269 J
Total HxCDD		0.12755 J	0.31981 J
Total HpCDD		0.56545 J	2.02814 J
Total TCDF		0.05209 J	0.12881 J
Total PeCDF		0.20764 J	0.65109 J
Total HxCDF		0.22062 J	0.61693 J
Total HpCDF		0.30692 J	1.249 J
Toxicity Equivalency (Dioxins, Furans, HCX)		0.0205	0.049

Table A-1
Summary Statistics and Analytical Results for Floodplain Soil - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	RWR-FP-5003-0000-01 7/17/2001 DUPLICATE	RWR-FP-5003-0000-01 7/17/2001	RWR-FP-5004-0000-01 7/19/2001
PCB Congeners (ug/Kg)			
2-Monochlorobiphenyl (1)			
4-Chlorobiphenyl (3)			
2,2'-Dichlorobiphenyl (4)			
2,3-Dichlorobiphenyl (5)			
2,3'-Dichlorobiphenyl (6)			
2,4-Dichlorobiphenyl (7)			
2,4'-Dichlorobiphenyl (8)			
2,5-Dichlorobiphenyl (9)			
2,6-Dichlorobiphenyl (10)			
3,4-Dichlorobiphenyl (12)			
2,2',3'-Trichlorobiphenyl (16)			
2,2',4-Trichlorobiphenyl (17)			
2,2',5-Trichlorobiphenyl (18)			
2,2',6-Trichlorobiphenyl (19)			
2,3,3'-Trichlorobiphenyl (20)			
2,3,4'-Trichlorobiphenyl (22)			
2,3,6-Trichlorobiphenyl (24)			
2,3',4-Trichlorobiphenyl (25)			
2,3',5-Trichlorobiphenyl (26)			
2,4',5-Trichlorobiphenyl (31)			
2,4',6-Trichlorobiphenyl (32)			
2,2',3,3'-Tetrachlorobiphenyl (40)			
2,2',3,4'-Tetrachlorobiphenyl (42)			
2,2',3,5-Tetrachlorobiphenyl (43)			
2,2',3,5'-Tetrachlorobiphenyl (44)			
2,2',3,6-Tetrachlorobiphenyl (45)			
2,2',3,6'-Tetrachlorobiphenyl (46)			
2,2',4,5-Tetrachlorobiphenyl (48)			
2,2',4,5'-Tetrachlorobiphenyl (49)			
2,2',4,6-Tetrachlorobiphenyl (50)			
2,3,3',4'-Tetrachlorobiphenyl (56)			
2,3,3',6-Tetrachlorobiphenyl (59)			
2,3,4,4'-Tetrachlorobiphenyl (60)			
2,3,4,5-Tetrachlorobiphenyl (61)			
2,3,4',5-Tetrachlorobiphenyl (63)			
2,3,4',6-Tetrachlorobiphenyl (64)			
2,3',4,4'-Tetrachlorobiphenyl (66)			
3,3',4,4'-Tetrachlorobiphenyl (77)			

Table A-1
Summary Statistics and Analytical Results for Floodplain Soil - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	RWR-FP-5003-0000-01 7/17/2001 DUPLICATE	RWR-FP-5003-0000-01 7/17/2001	RWR-FP-5004-0000-01 7/19/2001
3,4,4',5-Tetrachlorobiphenyl (81)			
2,2',3,3',4-Pentachlorobiphenyl (82)			
2,2',3,3',5-Pentachlorobiphenyl (83)			
2,2',3,3',6-Pentachlorobiphenyl (84)			
2,2',3,4,4'-Pentachlorobiphenyl (85)			
2,2',3,4,5-Pentachlorobiphenyl (86)			
2,2',3,4,6-Pentachlorobiphenyl (88)			
2,2',3,4,6'-Pentachlorobiphenyl (89)			
2,2',3,4',5-Pentachlorobiphenyl (90)			
2,2',3,5,5'-Pentachlorobiphenyl (92)			
2,2',3,5,6-Pentachlorobiphenyl (93)			
2,3,3',4,4'-Pentachlorobiphenyl (105)			
2,3,3',4,5-Pentachlorobiphenyl (106)			
2,3,3',4',5'-Pentachlorobiphenyl (108)			
2,3,3',4',6-Pentachlorobiphenyl (110)			
2,3,4,4',5-Pentachlorobiphenyl (114)			
2,3',4,4',5-Pentachlorobiphenyl (118)			
3,3',4,4',5-Pentachlorobiphenyl (126)			
2,2',3,3',4,4'-Hexachlorobiphenyl (128)			
2,2',3,3',4,5-Hexachlorobiphenyl (129)			
2,2',3,3',4,5'-Hexachlorobiphenyl (130)			
2,2',3,3',4,6-Hexachlorobiphenyl (131)			
2,2',3,3',4,6'-Hexachlorobiphenyl (132)			
2,2',3,3',5,6-Hexachlorobiphenyl (134)			
2,2',3,3',5,6'-Hexachlorobiphenyl (135)			
2,2',3,3',6,6'-Hexachlorobiphenyl (136)			
2,2',3,4,4',5-Hexachlorobiphenyl (137)			
2,2',3,4,5,5'-Hexachlorobiphenyl (141)			
2,2',3,4,5',6-Hexachlorobiphenyl (144)			
2,2',3,4',5,5'-Hexachlorobiphenyl (146)			
2,2',3,4',5,6-Hexachlorobiphenyl (147)			
2,2',4,4',5,5'-Hexachlorobiphenyl (153)			
2,3,3',4,4',5-Hexachlorobiphenyl (156)			
2,3,3',4,4',6-Hexachlorobiphenyl (158)			
2,3',4,4',5,5'-Hexachlorobiphenyl (167)			
3,3',4,4',5,5'-Hexachlorobiphenyl (169)			
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)			
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)			
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)			

Table A-1
Summary Statistics and Analytical Results for Floodplain Soil - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	RWR-FP-5003-0000-01 7/17/2001 DUPLICATE	RWR-FP-5003-0000-01 7/17/2001	RWR-FP-5004-0000-01 7/19/2001
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)			
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)			
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)			
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)			
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)			
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)			
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)			
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)			
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)			
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)			
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)			
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)			
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)			
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)			
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)			
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)			
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)			
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)			
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)			
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (200)			
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)			
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)			
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)			
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl			
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl			
Decachlorobiphenyl (209)			
PCB Congeners, Total			
Toxicity Equivalency (PCB)			
Grain Size (%)			
Percent Coarse Sand	0	0.04	0
Percent Fine Sand	50.5	49.29	11.69
Percent Gravel	0	0	0
Percent Medium Sand	5.02	4.33	0.61
Percent Clay	11.1	11	16
Percent Silt	33.38	35.34	71.7
Other (%)			
Total Organic Carbon	5.54	6.05	10.3
% Water		79	98
Solids, Percent		56.7	52.2

Table A-1
Summary Statistics and Analytical Results for Floodplain Soil - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
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PARAMETER	RWR-FP-5003-0000-01 7/17/2001 DUPLICATE	RWR-FP-5003-0000-01 7/17/2001	RWR-FP-5004-0000-01 7/19/2001
Percent_moisture		43.3	47.8

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* 106(12):775-792.

Table A-2
Summary Statistics and Analytical Results for Floodplain Soil - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	CMS-DU-072001 7/20/2001 REPLICATE	CMS-FP-4001-0000-01 7/18/2001	CMS-FP-4002-0000-01 7/18/2001
Semivolatile Organics (ug/Kg)										
1,1'-Biphenyl	4	4			31.03	38.37	36.17	88.26 J	31.03 J	38.2
2,4,5-Trichlorophenol	0	4	2900	3700			1637.50	3800 U	3400 U	3100 U
2,4-Dinitrophenol	0	4	2900	3700			1637.50	3800 U	3400 UJ	3100 U
2-Methylnaphthalene	4	4			79.29	103.66	92.34	109.67	103.66	101.27
2-Nitrophenol	0	4	560	720			318.75	740 U	670 U	600 U
4-Methylphenol	0	4	560	720			318.75	740 U	670 U	600 U
4-Nitrophenol	0	4	2900	3700			1637.50	3800 U	3400 U	3100 U
Acenaphthene	4	4			258.37	416.46	336.08	597.4 J	349.76 J	258.37
Acenaphthylene	4	4			201.67	330.61	255.37	306.41	201.67	242.49
Anthracene	4	4			596.06	933.32	800.80	1232.73	765.1	596.06
Benzaldehyde	4	4			72.88	207.41	139.78	142.08	97.44	72.88
Benzo(a)anthracene	4	4			2747.5	6007.46	4817.89	7861.94	4868.68	2747.5
Benzo(a)pyrene	4	4			3024.19	7236.58	5430.05	9617.88 J	5170.57 J	3024.19
Benzo(b)fluoranthene	4	4			3620.64	8576.07	6543.68	11383.07 J	6412.48 J	3620.64
Benzo(g,h,i)perylene	4	4			2694.75	5915.09	4456.21	7473.29 J	4220.65 J	2694.75
Benzo(k)fluoranthene	4	4			3239.64	7788.67	5905.35	10518.57 J	5940.65 J	3239.64
bis(2-Ethylhexyl)phthalate	4	4			1100	2100	1425.00	1800 J	1300	1200
Butylbenzylphthalate	4	4			280	370	307.50	270 J	280 J	370 J
Carbazole	4	4			520	1200	835.00	1100 J	980 J	520 J
Chrysene	4	4			3834.68	9135.77	6962.25	11721.71 J	6920.45 J	3834.68
Dibenzo(a,h)anthracene	4	4			617.88	1394.46	1078.13	1746.72 J	1033.58 J	617.88
Dibenzofuran	4	4			198.57	255.03	224.82	355.92	225.31	198.57
Di-n-Butylphthalate	4	4			71	150	92.50	120 J	77 J	71 J
Di-n-octylphthalate	2	4	560	600	72	120	193.00	81 J	72 J	600 UJ
Fluoranthene	4	4			6757.77	16435.55	12549.85	22283.2	13076.87	6757.77
Fluorene	4	4			325.02	465.77	407.72	640.9 J	412.78 J	325.02
Indeno(1,2,3-cd)pyrene	4	4			2782.74	6516.13	4880.39	8172.14 J	4691.51 J	2782.74
Naphthalene	4	4			119.66	140.14	131.63	179.18	119.66	136.12
Pentachlorophenol	0	4	2900	3700			1637.50	3800 UJ	3400 U	3100 U
Phenanthrene	4	4			3784.44	7315.77	5923.11	10253.65	6231.65	3784.44
Phenol	0	4	560	720			318.75	740 U	670 U	600 U
Pyrene	4	4			5673.47	12720.81	9914.46	17223.08 J	10134.45 J	5673.47
Total PAH	4	4			40673.79	91582.02	70746.28	121765.74 J	70908.52 J	40673.79
Pesticides/PCBs (ug/Kg)										
4,4'-DDD	5	5			10.05	17.45	13.81	15.61 J	10.05 J	17.45
4,4'-DDE	5	5			5.61	15.83	9.27	10.43 J	5.61 J	15.83
4,4'-DDT	5	5			3.66	29.96	14.88	14.83 J	29.96 J	3.66
Aldrin	0	5	1.29	1.57			0.72	1.57 U	1.29 U	1.48 U

Table A-2
Summary Statistics and Analytical Results for Floodplain Soil - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	CMS-DU-072001 7/20/2001 REPLICATE	CMS-FP-4001-0000-01 7/18/2001	CMS-FP-4002-0000-01 7/18/2001
alpha-BHC	0	5	1.29	1.57			0.72	1.57 U	1.29 U	1.48 U
alpha-Chlordane	5	5			25.07	55.1	37.71	40.17	28.57	55.1
Aroclor, Total	5	5			523.2	1344.16	777.33	730.46	523.2	1344.16
Aroclor-1016	0	5	16.1	19.63			9.00	19.63 U	16.18 U	18.45 U
Aroclor-1221	0	5	16.1	19.63			9.00	19.63 U	16.18 U	18.45 U
Aroclor-1232	0	5	16.1	19.63			9.00	19.63 U	16.18 U	18.45 U
Aroclor-1242	0	5	16.1	19.63			9.00	19.63 U	16.18 U	18.45 U
Aroclor-1248	0	5	16.1	19.63			9.00	19.63 U	16.18 U	18.45 U
Aroclor-1254	5	5			481.74	1297.67	736.58	685.38	481.74	1297.67
Aroclor-1260	0	5	16.1	19.63			9.00	19.63 U	16.18 U	18.45 U
Aroclor-1268	5	5			33.93	46.49	40.75	45.08	41.46	46.49
beta-BHC	0	5	1.29	1.57			0.72	1.57 U	1.29 U	1.48 U
delta-BHC	0	5	1.29	1.57			0.72	1.57 U	1.29 U	1.48 U
Dieldrin	5	5			10.55	19.46	15.13	18.4 J	10.55 J	19.46
Endosulfan I	0	5	1.29	1.57			0.72	1.57 U	1.29 U	1.48 U
Endosulfan II	0	5	1.29	1.57			0.72	1.57 U	1.29 U	1.48 U
Endosulfan Sulfate	4	5	1.48	1.48	6.77	9.48	6.75	9.48	6.77	1.48 U
Endrin	0	5	1.29	1.57			0.72	1.57 U	1.29 U	1.48 U
Endrin Aldehyde	0	5	1.29	1.57			0.72	1.57 U	1.29 U	1.48 U
Endrin Ketone	0	5	1.29	1.57			0.72	1.57 U	1.29 U	1.48 U
gamma-BHC	0	5	1.29	1.57			0.72	1.57 U	1.29 U	1.48 U
gamma-Chlordane	0	5	1.29	1.57			0.72	1.57 U	1.29 U	1.48 U
Heptachlor	4	5	1.48	1.48	0.53	2.88	1.74	1.75	2.88	1.48 U
Heptachlor Epoxide	0	5	1.29	1.57			0.72	1.57 U	1.29 U	1.48 U
Methoxychlor	0	5	1.29	1.57			0.72	1.57 U	1.29 U	1.48 U
Technical Chlordane	5	5			525.84	965.66	740.72	965.66 J	560.99 J	851.81
Toxaphene	0	5	32.2	39.27			17.99	39.27 U	32.37 U	36.9 U
Inorganics (mg/Kg)										
Aluminum	4	4			8643	13135	11292		10832 J	8643 J
Antimony	4	4			0.199	0.328	0.261		0.243 J	0.275 J
Arsenic	4	4			3.94	5.01	4.47		3.94	4.27
Barium	4	4			87.5	172	137		128	87.5
Beryllium	4	4			0.676	2.08	1.48		1.59	0.676
Cadmium	4	4			0.368	2.01	1.18		1.13	0.368 J
Chromium	4	4			74.5	107	86.5		83.2	81.2
Cobalt	4	4			3.14	10.6	7.63		7.03 J	3.14
Copper	4	4			62.1	93.3	80.6		81.5	62.1
Iron	4	4			17365	25275	21506		19468	17365
Lead	4	4			211	477	286		211	477

Table A-2
Summary Statistics and Analytical Results for Floodplain Soil - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	CMS-DU-072001 7/20/2001 REPLICATE	CMS-FP-4001-0000-01 7/18/2001	CMS-FP-4002-0000-01 7/18/2001
Manganese	4	4			180	1966	1009		1066	180
Mercury	4	4			0.222	0.389	0.300		0.252	0.222
Mercury (methyl)	4	4			0.000223	0.000499	0.000343		0.000499 J	0.000263 J
Molybdenum	4	4			8.81	16	13.1		11.7 J	16 J
Nickel	4	4			13.6	27.3	22.4		23.8	13.6
Selenium	0	4	0.458	0.58			0.258		0.485 U	0.458 U
Silver	4	4			0.468	1.01	0.738		0.599	0.468
Thallium	4	4			0.286	0.338	0.314		0.286	0.338
Vanadium	4	4			39.1	46.1	41.8		39.1	40.3
Zinc	4	4			91.1	371	238		217 J	91.1
Dioxins/Furans (ug/Kg)										
HCX	4	4			12.98402	74.69384	34.42924	3.13072 J	12.98402 J	74.69384 J
TCX	0	0						R	R	R
2,3,7,8-TCDD	4	4			0.63429	4.71826	2.32957	1.0576	1.58271 J	4.71826 J
1,2,3,7,8-PeCDD	4	4			0.00492	0.00979	0.00708	0.00949 J	0.00636 J	0.00492 J
1,2,3,4,7,8-HxCDD	4	4			0.00746	0.01603	0.01108	0.01848	0.01046 J	0.00746 J
1,2,3,6,7,8-HxCDD	4	4			0.03163	0.07039	0.04431	0.0566	0.036 J	0.03163
1,2,3,7,8,9-HxCDD	4	4			0.02445	0.05781	0.03754	0.05024	0.03455 J	0.02445
1,2,3,4,6,7,8-HpCDD	4	4			0.67591	1.41133	0.94194	1.3713 J	0.81454 J	0.67591
OCDD	4	4			4.61074	10.0042	6.66757	10.93463 J	5.66825 J	4.61074
2,3,7,8-TCDF	4	4			0.00827	0.01557	0.01249	0.01051 J	0.00827 J	0.01557 J
1,2,3,7,8-PeCDF	3	4	0.00457	0.00457	0.00252	0.00289	0.00260	0.00359 J	0.00252 J	0.00289 J
2,3,4,7,8-PeCDF	4	4			0.0046	0.00838	0.00644	0.00663 J	0.0046 J	0.00838 J
1,2,3,4,7,8-HxCDF	4	4			0.01421	0.02331	0.01964	0.02104	0.01421 J	0.02331
1,2,3,6,7,8-HxCDF	4	4			0.01254	0.01834	0.01537	0.01897	0.01254 J	0.01361 J
2,3,4,6,7,8-HxCDF	4	4			0.00838	0.01357	0.01044	0.0119 J	0.00838 J	0.00875 J
1,2,3,7,8,9-HxCDF	0	4	0.00078	0.0124			0.00278	0.0005 J	0.0012 UJ	0.00078 U
1,2,3,4,6,7,8-HpCDF	4	4			0.1492	0.30561	0.22079	0.28955	0.19109 J	0.1492
1,2,3,4,7,8,9-HpCDF	4	4			0.00921	0.01832	0.01279	0.01638	0.01026 J	0.00921 J
OCDF	4	4			0.34041	0.81324	0.54217	0.7039	0.49189 J	0.34041
Total TCDD	4	4			0.63429	4.71826	2.32957	1.0576 J	1.58271 J	4.71826 J
Total PeCDD	4	4			0.01682	0.02278	0.01854	0.02565 J	0.01763 J	0.02278 J
Total HxCDD	4	4			0.19707	0.35267	0.24981	0.34189 J	0.21143 J	0.19707 J
Total HpCDD	4	4			1.24498	2.42403	1.64099	2.49334 J	1.39818 J	1.24498 J
Total TCDF	4	4			0.01414	0.04941	0.03514	0.02176 J	0.01414 J	0.04941 J
Total PeCDF	4	4			0.15167	0.26992	0.20411	0.20985 J	0.15167 J	0.26992 J
Total HxCDF	4	4			0.20352	0.25793	0.23512	0.35363 J	0.23395 J	0.20352 J
Total HpCDF	4	4			0.32168	0.70471	0.48015	0.63556 J	0.39713 J	0.32168 J
Toxicity Equivalency (Dioxins, Furans, HCX)	4	4			0.691	4.76	2.38	1.11	1.62	4.76

Table A-2

Summary Statistics and Analytical Results for Floodplain Soil - Allendale

Data Evaluation Report
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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	CMS-DU-072001 7/20/2001 REPLICATE	CMS-FP-4001-0000-01 7/18/2001	CMS-FP-4002-0000-01 7/18/2001
PCB Congeners (ug/Kg)										
2-Monochlorobiphenyl (1)	0	4	1.29	1.57			0.70375	0.8809 J		
4-Chlorobiphenyl (3)	4	4			525.84	851.81	684.48250	1.80561 J		
2,2'-Dichlorobiphenyl (4)	0	4	1.29	1.57			0.70375	1.26036 J		
2,3-Dichlorobiphenyl (5)	0	4	1.29	1.57			0.70375	R		
2,3'-Dichlorobiphenyl (6)	0	4	1.29	1.57			0.70375	1.89648 J		
2,4-Dichlorobiphenyl (7)	3	4	1.48	1.48	0.53	2.88	1.73250	0.30214 J		
2,4'-Dichlorobiphenyl (8)	0	4	1.29	1.57			0.70375	7.37425 J		
2,5-Dichlorobiphenyl (9)	0	4	1.29	1.57			0.70375	0.39872 J		
2,6-Dichlorobiphenyl (10)	0	4	1.29	1.57			0.70375	0.08655 J		
3,4-Dichlorobiphenyl (12)	4	4			10.55	19.46	14.31250	1.25066 J		
2,2',3'-Trichlorobiphenyl (16)	4	4			5.61	15.83	8.98000	3.00275 J		
2,2',4-Trichlorobiphenyl (17)	0	4	1.29	1.57			0.70375	2.05079 J		
2,2',5-Trichlorobiphenyl (18)	0	4	1.29	1.57			0.70375	2.36144 J		
2,2',6-Trichlorobiphenyl (19)	4	4			10.05	17.45	13.36500	1.03145 J		
2,3,3'-Trichlorobiphenyl (20)	3	4	1.48	1.48	6.77	9.02	6.06750	15.33736 J		
2,3,4'-Trichlorobiphenyl (22)	4	4			3.66	29.96	14.89750	6.07428 J		
2,3,6-Trichlorobiphenyl (24)	0	4	1.29	1.57			0.70375	0.84038 J		
2,3',4-Trichlorobiphenyl (25)	0	4	1.29	1.57			0.70375	0.72906 J		
2,3',5-Trichlorobiphenyl (26)	0	4	1.29	1.57			0.70375	1.58064 J		
2,4',5-Trichlorobiphenyl (31)	4	4			25.07	55.1	37.09250	4.78343 J		
2,4',6-Trichlorobiphenyl (32)	0	4	1.29	1.57			0.70375	0.79135 J		
2,2',3,3'-Tetrachlorobiphenyl (40)	0	4	32.2	39.18			17.58125	12.72783 J		
2,2',3,4'-Tetrachlorobiphenyl (42)	0	4	16.1	19.59			8.79000	5.9235 J		
2,2',3,5-Tetrachlorobiphenyl (43)	0	4	16.1	19.59			8.79000	25.68461 J		
2,2',3,5'-Tetrachlorobiphenyl (44)	0	4	16.1	19.59			8.79000	21.14526 J		
2,2',3,6-Tetrachlorobiphenyl (45)	0	4	16.1	19.59			8.79000	4.3747 J		
2,2',3,6'-Tetrachlorobiphenyl (46)	0	4	16.1	19.59			8.79000	1.8908 J		
2,2',4,5-Tetrachlorobiphenyl (48)	4	4			481.74	1297.67	749.38500	1.48736 J		
2,2',4,5'-Tetrachlorobiphenyl (49)	0	4	16.1	19.59			8.79000	5.4658 J		
2,2',4,6-Tetrachlorobiphenyl (50)	4	4			33.93	46.49	39.66500	3.77634 J		
2,3,3',4'-Tetrachlorobiphenyl (56)	4	4			523.2	1344.16	789.05250	3.6699 J		
2,3,3',6-Tetrachlorobiphenyl (59)	4	4			5.85	8.47	6.75000	1.54086 J		
2,3,4,4'-Tetrachlorobiphenyl (60)	4	4			74	126	96.75000	3.19674 J		
2,3,4,5-Tetrachlorobiphenyl (61)	4	4			45.6	58.9	52.10000	25.87856 J		
2,3,4',5-Tetrachlorobiphenyl (63)	4	4			41.1	54.4	47.90000	R		
2,3,4',6-Tetrachlorobiphenyl (64)	1	1			6.44367	6.44367	6.44367	6.44367 J		
2,3',4,4'-Tetrachlorobiphenyl (66)	0	0						R		
3,3',4,4'-Tetrachlorobiphenyl (77)	1	1			2.92845	2.92845	2.92845	2.92845 J		

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	CMS-DU-072001 7/20/2001 REPLICATE	CMS-FP-4001-0000-01 7/18/2001	CMS-FP-4002-0000-01 7/18/2001
3,4,4',5-Tetrachlorobiphenyl (81)	0	0						R		
2,2',3,3',4-Pentachlorobiphenyl (82)	1	1			21.96579	21.96579	21.96579	21.96579 J		
2,2',3,3',5-Pentachlorobiphenyl (83)	1	1			19.50964	19.50964	19.50964	19.50964 J		
2,2',3,3',6-Pentachlorobiphenyl (84)	1	1			47.133	47.133	47.13300	47.133 J		
2,2',3,4,4'-Pentachlorobiphenyl (85)	1	1			11.62875	11.62875	11.62875	11.62875 J		
2,2',3,4,5-Pentachlorobiphenyl (86)	1	1			58.72614	58.72614	58.72614	58.72614 J		
2,2',3,4,6-Pentachlorobiphenyl (88)	1	1			12.76346	12.76346	12.76346	12.76346 J		
2,2',3,4,6'-Pentachlorobiphenyl (89)	0	0						R		
2,2',3,4',5-Pentachlorobiphenyl (90)	1	1			35.97246	35.97246	35.97246	35.97246 J		
2,2',3,5,5'-Pentachlorobiphenyl (92)	1	1			8.19031	8.19031	8.19031	8.19031 J		
2,2',3,5,6-Pentachlorobiphenyl (93)	1	1			87.21245	87.21245	87.21245	87.21245 J		
2,3,3',4,4'-Pentachlorobiphenyl (105)	1	1			20.46671	20.46671	20.46671	20.46671 J		
2,3,3',4,5-Pentachlorobiphenyl (106)	1	1			4.34728	4.34728	4.34728	4.34728 J		
2,3,3',4',5'-Pentachlorobiphenyl (108)	1	1			2.06484	2.06484	2.06484	2.06484 J		
2,3,3',4',6-Pentachlorobiphenyl (110)	1	1			150.92166	150.92166	150.92166	150.92166 J		
2,3,4,4',5-Pentachlorobiphenyl (114)	1	1			2.63425	2.63425	2.63425	2.63425 J		
2,3',4,4',5-Pentachlorobiphenyl (118)	1	1			65.1835	65.1835	65.18350	65.1835 J		
3,3',4,4',5-Pentachlorobiphenyl (126)	1	1			1.33157	1.33157	1.33157	1.33157 J		
2,2',3,3',4,4'-Hexachlorobiphenyl (128)	1	1			59.03502	59.03502	59.03502	59.03502 J		
2,2',3,3',4,5-Hexachlorobiphenyl (129)	1	1			146.80756	146.80756	146.80756	146.80756 J		
2,2',3,3',4,5'-Hexachlorobiphenyl (130)	1	1			12.05331	12.05331	12.05331	12.05331 J		
2,2',3,3',4,6-Hexachlorobiphenyl (131)	1	1			3.2237	3.2237	3.22370	3.2237 J		
2,2',3,3',4,6'-Hexachlorobiphenyl (132)	1	1			122.18177	122.18177	122.18177	122.18177 J		
2,2',3,3',5,6-Hexachlorobiphenyl (134)	1	1			14.54764	14.54764	14.54764	14.54764 J		
2,2',3,3',5,6'-Hexachlorobiphenyl (135)	1	1			31.91946	31.91946	31.91946	31.91946 J		
2,2',3,3',6,6'-Hexachlorobiphenyl (136)	1	1			37.08056	37.08056	37.08056	37.08056 J		
2,2',3,4,4',5-Hexachlorobiphenyl (137)	1	1			11.18438	11.18438	11.18438	11.18438 J		
2,2',3,4,5,5'-Hexachlorobiphenyl (141)	1	1			13.85344	13.85344	13.85344	13.85344 J		
2,2',3,4,5',6-Hexachlorobiphenyl (144)	0	0						R		
2,2',3,4',5,5'-Hexachlorobiphenyl (146)	1	1			4.02842	4.02842	4.02842	4.02842 J		
2,2',3,4',5,6-Hexachlorobiphenyl (147)	1	1			85.96274	85.96274	85.96274	85.96274 J		
2,2',4,4',5,5'-Hexachlorobiphenyl (153)	1	1			24.35728	24.35728	24.35728	24.35728 J		
2,3,3',4,4',5-Hexachlorobiphenyl (156)	1	1			7.53904	7.53904	7.53904	7.53904 J		
2,3,3',4,4',6-Hexachlorobiphenyl (158)	1	1			10.3917	10.3917	10.39170	10.3917 J		
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	1	1			2.87008	2.87008	2.87008	2.87008 J		
3,3',4,4',5,5'-Hexachlorobiphenyl (169)	0	0						R		
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	1	1			29.73246	29.73246	29.73246	29.73246 J		
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)	1	1			7.5625	7.5625	7.56250	7.5625 J		
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)	1	1			1.26733	1.26733	1.26733	1.26733 J		

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	CMS-DU-072001 7/20/2001 REPLICATE	CMS-FP-4001-0000-01 7/18/2001	CMS-FP-4002-0000-01 7/18/2001
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)	1	1			21.69413	21.69413	21.69413	21.69413 J		
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)	1	1			0.22135	0.22135	0.22135	0.22135 J		
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)	1	1			2.50201	2.50201	2.50201	2.50201 J		
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)	1	1			11.59143	11.59143	11.59143	11.59143 J		
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)	1	1			1.43506	1.43506	1.43506	1.43506 J		
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)	1	1			11.15702	11.15702	11.15702	11.15702 J		
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)	0	0						R		
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)	1	1			2.68778	2.68778	2.68778	2.68778 J		
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)	0	0						R		
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)	0	0						R		
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	1	1			6.10277	6.10277	6.10277	6.10277 J		
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	1	1			0.32826	0.32826	0.32826	0.32826 J		
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)	1	1			2.01764	2.01764	2.01764	2.01764 J		
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	1	1			0.29379	0.29379	0.29379	0.29379 J		
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	1	1			2.88218	2.88218	2.88218	2.88218 J		
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	1	1			1.8054	1.8054	1.80540	1.8054 J		
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)	1	1			1.71454	1.71454	1.71454	1.71454 J		
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)	0	0						R		
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)	1	1			8.7787	8.7787	8.77870	8.7787 J		
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (200)	1	1			0.93423	0.93423	0.93423	0.93423 J		
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)	1	1			0.46326	0.46326	0.46326	0.46326 J		
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)	1	1			1.88677	1.88677	1.88677	1.88677 J		
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	1	1			0.12743	0.12743	0.12743	0.12743 J		
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	1	1			7.56578	7.56578	7.56578	7.56578 J		
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	1	1			0.85912	0.85912	0.85912	0.85912 J		
Decachlorobiphenyl (209)	1	1			12.54088	12.54088	12.54088	12.54088 J		
PCB Congeners, Total	1	1			1455.19271	1455.19271	1455.19271	1455.19271 J		
Toxicity Equivalency (PCB)	1	1			0.147	0.147	0.147	0.147		
Grain Size (%)										
Percent Coarse Sand	4	4			0	2.32	0.61	0	0	0.12
Percent Fine Sand	4	4			25.93	45.76	36.2	21.04 J	43.88 J	45.76
Percent Gravel	4	4			0	0	0	0	0	0
Percent Medium Sand	4	4			5.3	19.05	9.4	3.68	5.3	5.96
Percent Clay	4	4			8	12.5	10.6	14 J	8 J	12.5
Percent Silt	4	4			35.66	56.77	43.2	61.28	42.82	35.66
Other (%)										
Total Organic Carbon	4	4			5.85	8.47	6.75		6.14	6.54
% Water	4	4			74	126	96.8		91	96
Solids, Percent	5	5			44.8	58.9	50.6	44.8	49.3	54.6

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	CMS-DU-072001 7/20/2001 REPLICATE	CMS-FP-4001-0000-01 7/18/2001	CMS-FP-4002-0000-01 7/18/2001
Percent_moisture	5	5			41.1	55.2	49.4	55.2	50.7	45.4

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* 106(12):775-792.

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PARAMETER	CMS-FP-4003-0000-01 7/19/2001	CMS-FP-4005-0000-01 7/20/2001
Semivolatile Organics (ug/Kg)		
1,1'-Biphenyl	38.37	37.08
2,4,5-Trichlorophenol	2900 UJ	3700 U
2,4-Dinitrophenol	2900 UJ	3700 U
2-Methylnaphthalene	85.15	79.29
2-Nitrophenol	560 UJ	720 U
4-Methylphenol	560 UJ	720 U
4-Nitrophenol	2900 UJ	3700 U
Acenaphthene	319.74	416.46
Acenaphthylene	330.61	246.72
Anthracene	933.32	908.71
Benzaldehyde	181.4	207.41
Benzo(a)anthracene	5649.91	6007.46
Benzo(a)pyrene	6288.84	7236.58
Benzo(b)fluoranthene	7565.51	8576.07
Benzo(g,h,i)perylene	4994.34	5915.09
Benzo(k)fluoranthene	6652.42	7788.67
bis(2-Ethylhexyl)phthalate	1100	2100 J
Butylbenzylphthalate	290 J	290 J
Carbazole	640 J	1200 J
Chrysene	7958.1	9135.77
Dibenzo(a,h)anthracene	1266.6	1394.46
Dibenzofuran	220.38	255.03
Di-n-Butylphthalate	72 J	150 J
Di-n-octylphthalate	560 U	120 J
Fluoranthene	13929.21	16435.55
Fluorene	427.3	465.77
Indeno(1,2,3-cd)pyrene	5531.18	6516.13
Naphthalene	140.14	130.61
Pentachlorophenol	2900 UJ	3700 U
Phenanthrene	6360.56	7315.77
Phenol	560 UJ	720 U
Pyrene	11129.12	12720.81
Total PAH	79820.79	91582.02
Pesticides/PCBs (ug/Kg)		
4,4'-DDD	11.54	14.42
4,4'-DDE	6.36	8.12
4,4'-DDT	9.39	16.58
Aldrin	1.29 U	1.57 U

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PARAMETER	CMS-FP-4003-0000-01 7/19/2001	CMS-FP-4005-0000-01 7/20/2001
alpha-BHC	1.29 U	1.57 U
alpha-Chlordane	25.07	39.63
Aroclor, Total	666.57	622.28
Aroclor-1016	16.1 U	19.59 U
Aroclor-1221	16.1 U	19.59 U
Aroclor-1232	16.1 U	19.59 U
Aroclor-1242	16.1 U	19.59 U
Aroclor-1248	16.1 U	19.59 U
Aroclor-1254	629.78	588.35
Aroclor-1260	16.1 U	19.59 U
Aroclor-1268	36.78	33.93
beta-BHC	1.29 U	1.57 U
delta-BHC	1.29 U	1.57 U
Dieldrin	12.36	14.88
Endosulfan I	1.29 U	1.57 U
Endosulfan II	1.29 U	1.57 U
Endosulfan Sulfate	9.02	7.74
Endrin	1.29 U	1.57 U
Endrin Aldehyde	1.29 U	1.57 U
Endrin Ketone	1.29 U	1.57 U
gamma-BHC	1.29 U	1.57 U
gamma-Chlordane	1.29 U	1.57 U
Heptachlor	0.53 J	2.78
Heptachlor Epoxide	1.29 U	1.57 U
Methoxychlor	1.29 U	1.57 U
Technical Chlordane	525.84	799.29
Toxaphene	32.2 U	39.18 U
Inorganics (mg/Kg)		
Aluminum	12558 J	13135 J
Antimony	0.328 J	0.199 J
Arsenic	5.01	4.64
Barium	172	161
Beryllium	2.08	1.57
Cadmium	1.2	2.01
Chromium	107	74.5
Cobalt	9.74	10.6
Copper	93.3	85.4
Iron	23915	25275
Lead	221	236

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PARAMETER	CMS-FP-4003-0000-01 7/19/2001	CMS-FP-4005-0000-01 7/20/2001
Manganese	823	1966
Mercury	0.389	0.336
Mercury (methyl)	0.000223 J	0.000387 J
Molybdenum	15.8 J	8.81 J
Nickel	24.9	27.3
Selenium	0.58 U	0.538 U
Silver	1.01	0.875
Thallium	0.295	0.336
Vanadium	46.1	41.5
Zinc	272	371
Dioxins/Furans (ug/Kg)		
HCX	27.98003 J	22.05905 J
TCX	R	R
2,3,7,8-TCDD	2.38301	0.63429 J
1,2,3,7,8-PeCDD	0.00723 J	0.00979 J
1,2,3,4,7,8-HxCDD	0.01037 J	0.01603 J
1,2,3,6,7,8-HxCDD	0.03922	0.07039 J
1,2,3,7,8,9-HxCDD	0.03334	0.05781 J
1,2,3,4,6,7,8-HpCDD	0.86599	1.41133 J
OCDD	6.3871	10.0042 J
2,3,7,8-TCDF	0.01244 J	0.01368 J
1,2,3,7,8-PeCDF	0.00457 U	0.00271 J
2,3,4,7,8-PeCDF	0.00612 J	0.00667 J
1,2,3,4,7,8-HxCDF	0.02076	0.02026 J
1,2,3,6,7,8-HxCDF	0.017	0.01834 J
2,3,4,6,7,8-HxCDF	0.01107 J	0.01357 J
1,2,3,7,8,9-HxCDF	0.0124 U	0.00785 UJ
1,2,3,4,6,7,8-HpCDF	0.23724	0.30561 J
1,2,3,4,7,8,9-HpCDF	0.01335 J	0.01832 J
OCDF	0.52312	0.81324 J
Total TCDD	2.38301 J	0.63429 J
Total PeCDD	0.01692 J	0.01682 J
Total HxCDD	0.23807 J	0.35267 J
Total HpCDD	1.49678 J	2.42403 J
Total TCDF	0.03369 J	0.04332 J
Total PeCDF	0.2236 J	0.17123 J
Total HxCDF	0.24508 J	0.25793 J
Total HpCDF	0.49706 J	0.70471 J
Toxicity Equivalency (Dioxins, Furans, HCX)	2.43	0.691

Table A-2
Summary Statistics and Analytical Results for Floodplain Soil - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	CMS-FP-4003-0000-01 7/19/2001	CMS-FP-4005-0000-01 7/20/2001
PCB Congeners (ug/Kg)		
2-Monochlorobiphenyl (1)		
4-Chlorobiphenyl (3)		
2,2'-Dichlorobiphenyl (4)		
2,3-Dichlorobiphenyl (5)		
2,3'-Dichlorobiphenyl (6)		
2,4-Dichlorobiphenyl (7)		
2,4'-Dichlorobiphenyl (8)		
2,5-Dichlorobiphenyl (9)		
2,6-Dichlorobiphenyl (10)		
3,4-Dichlorobiphenyl (12)		
2,2',3'-Trichlorobiphenyl (16)		
2,2',4-Trichlorobiphenyl (17)		
2,2',5-Trichlorobiphenyl (18)		
2,2',6-Trichlorobiphenyl (19)		
2,3,3'-Trichlorobiphenyl (20)		
2,3,4'-Trichlorobiphenyl (22)		
2,3,6-Trichlorobiphenyl (24)		
2,3',4-Trichlorobiphenyl (25)		
2,3',5-Trichlorobiphenyl (26)		
2,4',5-Trichlorobiphenyl (31)		
2,4',6-Trichlorobiphenyl (32)		
2,2',3,3'-Tetrachlorobiphenyl (40)		
2,2',3,4'-Tetrachlorobiphenyl (42)		
2,2',3,5-Tetrachlorobiphenyl (43)		
2,2',3,5'-Tetrachlorobiphenyl (44)		
2,2',3,6-Tetrachlorobiphenyl (45)		
2,2',3,6'-Tetrachlorobiphenyl (46)		
2,2',4,5-Tetrachlorobiphenyl (48)		
2,2',4,5'-Tetrachlorobiphenyl (49)		
2,2',4,6-Tetrachlorobiphenyl (50)		
2,3,3',4'-Tetrachlorobiphenyl (56)		
2,3,3',6-Tetrachlorobiphenyl (59)		
2,3,4,4'-Tetrachlorobiphenyl (60)		
2,3,4,5-Tetrachlorobiphenyl (61)		
2,3,4',5-Tetrachlorobiphenyl (63)		
2,3,4',6-Tetrachlorobiphenyl (64)		
2,3',4,4'-Tetrachlorobiphenyl (66)		
3,3',4,4'-Tetrachlorobiphenyl (77)		

Table A-2

Summary Statistics and Analytical Results for Floodplain Soil - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	CMS-FP-4003-0000-01 7/19/2001	CMS-FP-4005-0000-01 7/20/2001
3,4,4',5-Tetrachlorobiphenyl (81)		
2,2',3,3',4-Pentachlorobiphenyl (82)		
2,2',3,3',5-Pentachlorobiphenyl (83)		
2,2',3,3',6-Pentachlorobiphenyl (84)		
2,2',3,4,4'-Pentachlorobiphenyl (85)		
2,2',3,4,5-Pentachlorobiphenyl (86)		
2,2',3,4,6-Pentachlorobiphenyl (88)		
2,2',3,4,6'-Pentachlorobiphenyl (89)		
2,2',3,4',5-Pentachlorobiphenyl (90)		
2,2',3,5,5'-Pentachlorobiphenyl (92)		
2,2',3,5,6-Pentachlorobiphenyl (93)		
2,3,3',4,4'-Pentachlorobiphenyl (105)		
2,3,3',4,5-Pentachlorobiphenyl (106)		
2,3,3',4',5'-Pentachlorobiphenyl (108)		
2,3,3',4',6-Pentachlorobiphenyl (110)		
2,3,4,4',5-Pentachlorobiphenyl (114)		
2,3',4,4',5-Pentachlorobiphenyl (118)		
3,3',4,4',5-Pentachlorobiphenyl (126)		
2,2',3,3',4,4'-Hexachlorobiphenyl (128)		
2,2',3,3',4,5-Hexachlorobiphenyl (129)		
2,2',3,3',4,5'-Hexachlorobiphenyl (130)		
2,2',3,3',4,6-Hexachlorobiphenyl (131)		
2,2',3,3',4,6'-Hexachlorobiphenyl (132)		
2,2',3,3',5,6-Hexachlorobiphenyl (134)		
2,2',3,3',5,6'-Hexachlorobiphenyl (135)		
2,2',3,3',6,6'-Hexachlorobiphenyl (136)		
2,2',3,4,4',5-Hexachlorobiphenyl (137)		
2,2',3,4,5,5'-Hexachlorobiphenyl (141)		
2,2',3,4,5',6-Hexachlorobiphenyl (144)		
2,2',3,4',5,5'-Hexachlorobiphenyl (146)		
2,2',3,4',5,6-Hexachlorobiphenyl (147)		
2,2',4,4',5,5'-Hexachlorobiphenyl (153)		
2,3,3',4,4',5-Hexachlorobiphenyl (156)		
2,3,3',4,4',6-Hexachlorobiphenyl (158)		
2,3',4,4',5,5'-Hexachlorobiphenyl (167)		
3,3',4,4',5,5'-Hexachlorobiphenyl (169)		
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)		
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)		
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)		

Table A-2
Summary Statistics and Analytical Results for Floodplain Soil - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	CMS-FP-4003-0000-01 7/19/2001	CMS-FP-4005-0000-01 7/20/2001
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)		
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)		
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)		
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)		
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)		
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)		
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)		
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)		
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)		
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)		
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)		
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)		
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)		
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)		
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)		
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)		
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)		
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)		
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)		
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (200)		
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)		
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)		
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)		
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl		
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl		
Decachlorobiphenyl (209)		
PCB Congeners, Total		
Toxicity Equivalency (PCB)		
Grain Size (%)		
Percent Coarse Sand	2.32	0
Percent Fine Sand	29.16	25.93 J
Percent Gravel	0	0
Percent Medium Sand	19.05	7.29
Percent Clay	12	10 J
Percent Silt	37.47	56.77
Other (%)		
Total Organic Carbon	5.85	8.47
% Water	74	126
Solids, Percent	58.9	45.6

Table A-2
Summary Statistics and Analytical Results for Floodplain Soil - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	CMS-FP-4003-0000-01 7/19/2001	CMS-FP-4005-0000-01 7/20/2001
Percent_moisture	41.1	54.4

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* 106(12):775-792.

Table 3

Summary Statistics and Analytical Results for Floodplain Soil - Lyman Mill

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	LPX-FP-4004-0000-01 7/19/2001 DUPLICATE	LPX-FP-4004-0000-01 7/19/2001	LPX-FP-4006-0000-01 7/19/2001
Semivolatile Organics (ug/Kg)										
Phenol	0	3	510	580			266.67		510 U	510 U
4-Methylphenol	0	3	510	580			266.67		510 U	510 U
2-Nitrophenol	0	3	510	580			266.67		510 U	510 U
Naphthalene	3	3			12.75	63.4	35.27		12.75 J	29.65
2-Methylnaphthalene	3	3			7.82	35.66	20.26		7.82 J	17.29
2,4,5-Trichlorophenol	0	3	2600	3000			1366.67		2600 U	2600 U
Acenaphthylene	3	3			19.34	213.23	86.93		28.23 J	19.34
Acenaphthene	3	3			10.54	71.58	34.50		10.54 J	21.38
2,4-Dinitrophenol	0	3	2600	3000			1366.67		2600 UJ	2600 UJ
4-Nitrophenol	0	3	2600	3000			1366.67		2600 U	2600 U
Dibenzofuran	3	3			11.11	70.22	35.17		11.11 J	24.17
Fluorene	3	3			16.38	106.14	48.77		16.38 J	23.79
Pentachlorophenol	0	3	2600	3000			1366.67		2600 U	2600 U
Phenanthrene	3	3			331.52	2130.94	934.19		331.52 J	340.1
Anthracene	3	3			44.75	275.32	125.77		44.75 J	57.24
Carbazole	3	3			72	450	210.67		72 J	110 J
Di-n-Butylphthalate	2	3	510	510	89	850	398.00		510 UJ	850 J
Fluoranthene	3	3			596.05	4871.19	2086.59		792.52 J	596.05
Pyrene	3	3			490.12	3846.04	1653.78		625.17 J	490.12
Butylbenzylphthalate	3	3			70	210	146.67		70 J	160 J
Benzo(a)anthracene	3	3			245.99	1748.81	763.92		296.95 J	245.99
Chrysene	3	3			320.25	2830.46	1202.69		457.35 J	320.25
bis(2-Ethylhexyl)phthalate	3	3			310	1600	786.67		310 J	450 J
Di-n-octylphthalate	1	3	510	510	97	97	202.33		510 U	510 U
Benzo(b)fluoranthene	3	3			296.53	2814.41	1176.65		419 J	296.53
Benzo(k)fluoranthene	3	3			274.86	2383.12	1009.86		371.61 J	274.86
Benzo(a)pyrene	3	3			281.37	2066.37	899.14		349.67 J	281.37
Indeno(1,2,3-cd)pyrene	3	3			237.08	2122.7	894.25		322.96 J	237.08
Dibenzo(a,h)anthracene	3	3			55.03	466.27	198.35		73.75 J	55.03
Benzo(g,h,i)perylene	3	3			222.54	1970.47	829.82		296.44 J	222.54
Total PAH	3	3			3568.29	28101.84	12047.31		4471.8 J	3568.29
1,1'-Biphenyl	3	3			3.28	15.52	11.44		3.28 J	15.52
Benzaldehyde	2	3	29.51	29.51	55.66	70.51	46.98		29.51 U	55.66
Pesticides/PCBs (ug/Kg)										
4,4'-DDD	3	3			1.44	13.15	6.89	11.87 J	1.44	6.07 J
4,4'-DDE	3	3			5.05	31.59	16.80	36.33 J	5.05	13.77 J
4,4'-DDT	3	3			3.04	43.13	18.16	14.45 J	3.04	8.31 J
Aldrin	0	3	1.14	1.49			0.67	5.26 U	1.14 U	1.49 U

Table .-3

Summary Statistics and Analytical Results for Floodplain Soil - Lyman Mill

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	LPX-FP-4004-0000-01 7/19/2001 DUPLICATE	LPX-FP-4004-0000-01 7/19/2001	LPX-FP-4006-0000-01 7/19/2001
alpha-BHC	0	3	1.14	1.49			0.67	5.26 U	1.14 U	1.49 U
alpha-Chlordane	3	3			1.23	22.23	8.77	16.73 J	2.84	1.23 J
Aroclor, Total	3	3			108.73	278.11	176.45	859.24 J	142.52	278.11 J
Aroclor-1016	0	3	14.23	18.6			8.32	65.72 U	14.23 U	18.6 U
Aroclor-1221	0	3	14.23	18.6			8.32	65.72 U	14.23 U	18.6 U
Aroclor-1232	0	3	14.23	18.6			8.32	65.72 U	14.23 U	18.6 U
Aroclor-1242	0	3	14.23	18.6			8.32	65.72 U	14.23 U	18.6 U
Aroclor-1248	0	3	14.23	18.6			8.32	65.72 U	14.23 U	18.6 U
Aroclor-1254	3	3			85.28	253.05	152.78	746.14 J	120.02	253.05 J
Aroclor-1260	0	3	14.23	18.6			8.32	65.72 U	14.23 U	18.6 U
Aroclor-1268	3	3			22.49	25.07	23.67	113.1 J	22.49	25.07 J
beta-BHC	0	3	1.14	1.49			0.67	5.26 U	1.14 U	1.49 U
delta-BHC	0	3	1.14	1.49			0.67	5.26 U	1.14 U	1.49 U
Dieldrin	2	3	1.49	1.49	2.2	5.4	2.78	13.13 J	2.2	1.49 U
Endosulfan I	0	3	1.14	1.49			0.67	5.26 U	1.14 U	1.49 U
Endosulfan II	0	3	1.14	1.49			0.67	5.26 U	1.14 U	1.49 U
Endosulfan Sulfate	2	3	1.49	1.49	1.37	1.71	1.28	10.3 J	1.37	1.49 U
Endrin	0	3	1.14	1.49			0.67	5.26 U	1.14 U	1.49 U
Endrin Aldehyde	0	3	1.14	1.49			0.67	5.26 U	1.14 U	1.49 U
Endrin Ketone	0	3	1.14	1.49			0.67	5.26 U	1.14 U	1.49 U
gamma-BHC	0	3	1.14	1.49			0.67	5.26 U	1.14 U	1.49 U
gamma-Chlordane	0	3	1.14	1.49			0.67	5.26 U	1.14 U	1.49 U
Heptachlor	0	3	1.14	1.49			0.67	5.26 U	1.14 U	1.49 U
Heptachlor Epoxide	2	3	1.49	1.49	0.39	2.07	1.07	5.26 U	0.39 J	1.49 U
Methoxychlor	0	3	1.14	1.49			0.67	5.26 U	1.14 U	1.49 U
Technical Chlordane	3	3			79.63	455.84	207.34	473.36 J	79.63 J	86.55 J
Toxaphene	0	3	28.45	37.19			16.63	131.45 U	28.45 U	37.19 U
Inorganics (mg/Kg)										
Aluminum	3	3			13131	20313	16078		14791 J	20313 J
Antimony	2	3	0.112	0.112	0.213	0.704	0.324		0.112 U	0.704 J
Arsenic	3	3			4.25	7.42	5.53		4.25	7.42
Barium	3	3			72.3	842	340		72.3	842
Beryllium	3	3			0.649	1.06	0.802		1.06	0.649
Cadmium	3	3			0.463	3.18	1.80		0.463 J	3.18
Chromium	2	3	27.2	27.2	33.9	107	51.5		33.9	107
Cobalt	3	3			4.94	7.47	5.81		5.03	7.47
Copper	3	3			33.4	400	173		33.4	400
Iron	3	3			18264	25516	20754		18264	25516
Lead	3	3			158	901	436		158	901

Ta 3

Summary Statistics and Analytical Results for Floodplain Soil - Lyman Mill

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	LPX-FP-4004-0000-01 7/19/2001 DUPLICATE	LPX-FP-4004-0000-01 7/19/2001	LPX-FP-4006-0000-01 7/19/2001
Manganese	3	3			307	740	506		740	470
Mercury	3	3			0.159	0.245	0.204		0.209	0.245
Mercury (methyl)	3	3			0.000159	0.000767	0.000407		0.000767 J	0.000159 J
Molybdenum	3	3			1.42	3.48	2.52		3.48 J	2.67 J
Nickel	3	3			12.3	25.8	19.5		12.3	25.8
Selenium	1	3	0.438	0.586	0.779	0.779	0.430		0.779 J	0.586 U
Silver	3	3			0.407	3.88	1.91		0.407	1.43
Thallium	3	3			0.279	0.575	0.381		0.279	0.575
Vanadium	3	3			31.6	42.6	37.6		38.6	42.6
Zinc	3	3			97.5	1150	489		97.5	1150
Dioxins/Furans (ug/Kg)										
HCX	3	3			0.11784	0.26193	0.18950		0.26193 J	0.11784 J
TCX	0	0							R	R
2,3,7,8-TCDD	2	3	0.01971	0.01971	0.12329	1.13007	0.42107		1.13007	0.12329
1,2,3,7,8-PeCDD	3	3			0.00061	0.01264	0.00656		0.00061 J	0.00644 J
1,2,3,4,7,8-HxCDD	3	3			0.0009	0.02712	0.01154		0.0009 J	0.00661 J
1,2,3,6,7,8-HxCDD	3	3			0.00253	0.07439	0.03174		0.00253 J	0.01829
1,2,3,7,8,9-HxCDD	3	3			0.00233	0.0722	0.03230		0.00233 J	0.02236
1,2,3,4,6,7,8-HpCDD	3	3			0.05714	1.73931	0.71486		0.05714	0.34812
OCDD	3	3			0.43255	11.18023	4.47796		0.43255	1.8211
2,3,7,8-TCDF	3	3			0.00226	0.03551	0.01596		0.00226 J	0.03551
1,2,3,7,8-PeCDF	3	3			0.00088	0.00894	0.00491		0.00088 J	0.00894 J
2,3,4,7,8-PeCDF	3	3			0.00134	0.01294	0.00757		0.00134 J	0.01294 J
1,2,3,4,7,8-HxCDF	3	3			0.00267	0.03622	0.02105		0.00267 J	0.02427
1,2,3,6,7,8-HxCDF	3	3			0.00166	0.02904	0.01394		0.00166 J	0.01113 J
2,3,4,6,7,8-HxCDF	3	3			0.00131	0.02515	0.01304		0.00131 J	0.01265 J
1,2,3,7,8,9-HxCDF	2	3	0.00116	0.00116	0.00049	0.00066	0.00058		0.00116 U	0.00066 J
1,2,3,4,6,7,8-HpCDF	3	3			0.01822	0.84393	0.30755		0.01822	0.0605
1,2,3,4,7,8,9-HpCDF	3	3			0.00118	0.03893	0.01477		0.00118 J	0.00419 J
OCDF	3	3			0.03719	1.99234	0.70110		0.03719	0.07377
Total TCDD	2	3	0.01971	0.01971	0.13703	1.13007	0.42565		1.13007 J	0.13703 J
Total PeCDD	3	3			0.00208	0.08924	0.04075		0.00208 J	0.08924 J
Total HxCDD	3	3			0.02238	0.39697	0.20115		0.02238 J	0.18409 J
Total HpCDD	3	3			0.1128	3.3059	1.36030		0.1128 J	0.6622 J
Total TCDF	3	3			0.00744	0.16136	0.05964		0.00744 J	0.16136 J
Total PeCDF	3	3			0.03324	0.22582	0.14484		0.03324 J	0.22582 J
Total HxCDF	3	3			0.03017	0.60505	0.26063		0.03017 J	0.14667 J
Total HpCDF	3	3			0.0373	1.97568	0.71072		0.0373 J	0.11918 J
Toxicity Equivalency (Dioxins, Furans, HCX)	3	3			0.0722	1.13	0.452		1.13	0.154

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Summary Statistics and Analytical Results for Floodplain Soil - Lyman Mill

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	LPX-FP-4004-0000-01 7/19/2001 DUPLICATE	LPX-FP-4004-0000-01 7/19/2001	LPX-FP-4006-0000-01 7/19/2001
PCB Congeners (ug/Kg)										
2-Monochlorobiphenyl (1)	2	2			0.05602	0.11428	0.08515		0.11428	
4-Chlorobiphenyl (3)	1	2	0.03202	0.03202	0.3231	0.3231	0.16956		0.3231	
2,2'-Dichlorobiphenyl (4)	2	2			0.03331	0.19493	0.11412		0.19493 J	
2,3-Dichlorobiphenyl (5)	1	2	0.00909	0.00909	0.0224	0.0224	0.01347		0.0224	
2,3'-Dichlorobiphenyl (6)	1	2	0.00909	0.00909	0.18402	0.18402	0.09428		0.18402 J	
2,4-Dichlorobiphenyl (7)	1	2	0.00909	0.00909	0.03896	0.03896	0.02175		0.03896	
2,4'-Dichlorobiphenyl (8)	2	2			0.10612	0.87293	0.48953		0.87293 J	
2,5-Dichlorobiphenyl (9)	1	2	0.00909	0.00909	0.05415	0.05415	0.02935		0.05415	
2,6-Dichlorobiphenyl (10)	1	2	0.00909	0.00909	0.01138	0.01138	0.00796		0.01138	
3,4-Dichlorobiphenyl (12)	1	2	0.01818	0.01818	0.17728	0.17728	0.09319		0.17728 J	
2,2',3'-Trichlorobiphenyl (16)	1	2	0.05857	0.05857	0.33617	0.33617	0.18273		0.33617	
2,2',4-Trichlorobiphenyl (17)	1	2	0.05303	0.05303	0.30023	0.30023	0.16337		0.30023	
2,2',5-Trichlorobiphenyl (18)	1	2	0.02107	0.02107	0.68318	0.68318	0.34686		0.68318 J	
2,2',6-Trichlorobiphenyl (19)	1	2	0.01607	0.01607	0.07436	0.07436	0.04120		0.07436	
2,3,3'-Trichlorobiphenyl (20)	1	2	0.32088	0.32088	2.44912	2.44912	1.30478		2.44912 J	
2,3,4'-Trichlorobiphenyl (22)	1	2	0.10061	0.10061	0.5813	0.5813	0.31580		0.5813	
2,3,6-Trichlorobiphenyl (24)	1	2	0.0111	0.0111	0.0643	0.0643	0.03493		0.0643 J	
2,3',4-Trichlorobiphenyl (25)	1	2	0.01242	0.01242	0.09846	0.09846	0.05234		0.09846	
2,3',5-Trichlorobiphenyl (26)	1	2	0.0287	0.0287	0.23632	0.23632	0.12534		0.23632 J	
2,4',5-Trichlorobiphenyl (31)	1	2	0.12548	0.12548	1.4153	1.4153	0.73902		1.4153	
2,4',6-Trichlorobiphenyl (32)	1	2	0.02662	0.02662	0.2112	0.2112	0.11226		0.2112	
2,2',3,3'-Tetrachlorobiphenyl (40)	2	2			0.17322	0.5841	0.37866		0.5841 J	
2,2',3,4'-Tetrachlorobiphenyl (42)	2	2			0.08874	0.37978	0.23426		0.37978	
2,2',3,5-Tetrachlorobiphenyl (43)	2	2			0.60003	3.21474	1.90739		3.21474 J	
2,2',3,5'-Tetrachlorobiphenyl (44)	2	2			0.35865	1.65825	1.00845		1.65825 J	
2,2',3,6-Tetrachlorobiphenyl (45)	1	2	0.05108	0.05108	0.1671	0.1671	0.09632		0.1671 J	
2,2',3,6'-Tetrachlorobiphenyl (46)	2	2			0.01744	0.04792	0.03268		0.04792 J	
2,2',4,5-Tetrachlorobiphenyl (48)	2	2			0.04088	0.21367	0.12728		0.21367	
2,2',4,5'-Tetrachlorobiphenyl (49)	2	2			0.20372	1.2725	0.73811		1.2725 J	
2,2',4,6-Tetrachlorobiphenyl (50)	2	2			0.04178	0.1181	0.07994		0.1181 J	
2,3,3',4'-Tetrachlorobiphenyl (56)	2	2			0.25679	0.99071	0.62375		0.99071	
2,3,3',6-Tetrachlorobiphenyl (59)	2	2			0.03153	0.11835	0.07494		0.11835 J	
2,3,4,4'-Tetrachlorobiphenyl (60)	2	2			0.12377	0.47862	0.30120		0.47862	
2,3,4,5-Tetrachlorobiphenyl (61)	2	2			1.00572	5.02108	3.01340		5.02108 J	
2,3,4',5-Tetrachlorobiphenyl (63)	2	2			0.0111	0.05875	0.03493		0.05875 J	
2,3,4',6-Tetrachlorobiphenyl (64)	2	2			0.18591	0.77616	0.48104		0.77616	
2,3',4,4'-Tetrachlorobiphenyl (66)	2	2			0.50668	2.45189	1.47929		2.45189 J	
3,3',4,4'-Tetrachlorobiphenyl (77)	2	2			0.13009	0.41288	0.27149		0.41288 J	

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	LPX-FP-4004-0000-01 7/19/2001 DUPLICATE	LPX-FP-4004-0000-01 7/19/2001	LPX-FP-4006-0000-01 7/19/2001
3,4,4',5-Tetrachlorobiphenyl (81)	0	2	0.07746	0.09088			0.04209		0.07746 U	
2,2',3,3',4-Pentachlorobiphenyl (82)	2	2			0.35037	0.82768	0.58903		0.82768 J	
2,2',3,3',5-Pentachlorobiphenyl (83)	2	2			0.99228	3.6114	2.30184		3.6114 J	
2,2',3,3',6-Pentachlorobiphenyl (84)	2	2			0.63553	1.34798	0.99176		1.34798 J	
2,2',3,4,4'-Pentachlorobiphenyl (85)	2	2			0.43605	1.64589	1.04097		1.64589 J	
2,2',3,4,5-Pentachlorobiphenyl (86)	2	2			0.86682	5.60616	3.23649		5.60616 J	
2,2',3,4,6-Pentachlorobiphenyl (88)	2	2			0.37516	0.91194	0.64355		0.91194 J	
2,2',3,4,6'-Pentachlorobiphenyl (89)	2	2			0.01112	0.03207	0.02160		0.03207 J	
2,2',3,4',5-Pentachlorobiphenyl (90)	2	2			1.90488	7.44117	4.67303		7.44117 J	
2,2',3,5,5'-Pentachlorobiphenyl (92)	2	2			0.3854	1.3136	0.84950		1.3136	
2,2',3,5,6-Pentachlorobiphenyl (93)	2	2			1.26177	4.9983	3.13004		4.9983 J	
2,3,3',4,4'-Pentachlorobiphenyl (105)	2	2			0.85953	2.94701	1.90327		2.94701 J	
2,3,3',4,5-Pentachlorobiphenyl (106)	2	2			0.1839	0.68271	0.43331		0.68271 J	
2,3,3',4',5'-Pentachlorobiphenyl (108)	2	2			0.08076	0.35066	0.21571		0.35066 J	
2,3,3',4',6-Pentachlorobiphenyl (110)	2	2			3.9417	9.2305	6.58610		9.2305 J	
2,3,4,4',5-Pentachlorobiphenyl (114)	2	2			0.04208	0.16675	0.10442		0.16675 J	
2,3',4,4',5-Pentachlorobiphenyl (118)	2	2			2.47566	8.83673	5.65620		8.83673 J	
3,3',4,4',5-Pentachlorobiphenyl (126)	2	2			0.04261	0.04965	0.04613		0.04261 J	
2,2',3,3',4,4'-Hexachlorobiphenyl (128)	2	2			0.98934	2.3494	1.66937		2.3494 J	
2,2',3,3',4,5-Hexachlorobiphenyl (129)	2	2			4.6154	10.99404	7.80472		10.99404 J	
2,2',3,3',4,5'-Hexachlorobiphenyl (130)	2	2			0.31842	0.80181	0.56012		0.80181 J	
2,2',3,3',4,6-Hexachlorobiphenyl (131)	2	2			0.0532	0.11809	0.08565		0.11809 J	
2,2',3,3',4,6'-Hexachlorobiphenyl (132)	2	2			2.06364	3.69936	2.88150		3.69936 J	
2,2',3,3',5,6-Hexachlorobiphenyl (134)	2	2			0.28354	0.51112	0.39733		0.51112 J	
2,2',3,3',5,6'-Hexachlorobiphenyl (135)	2	2			1.56423	1.85067	1.70745		1.85067 J	
2,2',3,3',6,6'-Hexachlorobiphenyl (136)	2	2			0.81979	0.82549	0.82264		0.81979 J	
2,2',3,4,4',5-Hexachlorobiphenyl (137)	2	2			0.57662	1.24478	0.91070		1.24478 J	
2,2',3,4,5,5'-Hexachlorobiphenyl (141)	2	2			0.61949	1.31161	0.96555		1.31161 J	
2,2',3,4,5',6-Hexachlorobiphenyl (144)	1	2	0.09088	0.09088	0.23454	0.23454	0.13999		0.23454	
2,2',3,4',5,5'-Hexachlorobiphenyl (146)	2	2			0.22986	0.71162	0.47074		0.71162 J	
2,2',3,4',5,6-Hexachlorobiphenyl (147)	2	2			3.86188	5.63276	4.74732		5.63276 J	
2,2',4,4',5,5'-Hexachlorobiphenyl (153)	2	2			1.49058	4.52552	3.00805		4.52552 J	
2,3,3',4,4',5-Hexachlorobiphenyl (156)	2	2			0.36906	1.08036	0.72471		1.08036 J	
2,3,3',4,4',6-Hexachlorobiphenyl (158)	2	2			0.3385	0.94613	0.64232		0.94613 J	
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	2	2			0.15292	0.36874	0.26083		0.36874 J	
3,3',4,4',5,5'-Hexachlorobiphenyl (169)	1	2	0.09088	0.09088	0.00847	0.00847	0.02696		0.00847 J	
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	2	2			1.8151	2.04737	1.93124		1.8151 J	
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)	2	2			0.4942	0.52032	0.50726		0.4942 J	
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)	2	2			0.17475	0.19898	0.18687		0.19898 J	

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	LPX-FP-4004-0000-01 7/19/2001 DUPLICATE	LPX-FP-4004-0000-01 7/19/2001	LPX-FP-4006-0000-01 7/19/2001
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)	2	2			1.40923	2.27854	1.84389		1.40923 J	
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)	2	2			0.03272	0.03424	0.03348		0.03424 J	
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)	1	2	0.18176	0.18176	0.13115	0.13115	0.11102		0.13115 J	
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)	2	2			0.8102	1.13287	0.97154		0.8102 J	
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)	2	2			0.20939	0.25577	0.23258		0.20939	
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)	2	2			1.77594	1.81522	1.79558		1.77594 J	
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)	1	2	0.18176	0.18176	0.00652	0.00652	0.04870		0.00652 J	
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)	2	2			0.42019	0.46389	0.44204		0.42019	
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)	0	2	0.15491	0.18176			0.08417		0.15491 U	
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)	1	2	0.18176	0.18176	0.10098	0.10098	0.09593		0.10098 J	
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	2	2			0.98143	1.15323	1.06733		0.98143 J	
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	2	2			0.03283	0.04582	0.03933		0.04582 J	
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)	2	2			0.24409	0.28677	0.26543		0.28677 J	
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	2	2			0.03269	0.03711	0.03490		0.03711 J	
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	2	2			0.38264	0.61956	0.50110		0.38264 J	
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	2	2			0.17579	0.46209	0.31894		0.17579 J	
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)	2	2			0.21888	0.32156	0.27022		0.21888 J	
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)	1	2	0.18176	0.18176	0.01127	0.01127	0.05108		0.01127 J	
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)	2	2			1.26122	1.29678	1.27900		1.26122 J	
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (200)	2	2			0.08211	0.19249	0.13730		0.08211 J	
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)	2	2			0.06995	0.07758	0.07377		0.07758 J	
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)	2	2			0.3485	0.47262	0.41056		0.47262 J	
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	2	2			0.02401	0.0305	0.02726		0.02401 J	
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	2	2			1.10967	2.02532	1.56750		2.02532	
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	2	2			0.07063	0.14313	0.10688		0.14313 J	
Decachlorobiphenyl (209)	2	2			1.25253	2.02625	1.63939		2.02625 J	
PCB Congeners, Total	2	2			53.13488	129.26801	91.20145		129.26801 J	
Toxicity Equivalency (PCB)	2	2			0.00552	0.0062	0.00586		0.0062	
Grain Size (%)										
Percent Coarse Sand	3	3			1.01	7.44	3.94		3.36	7.44
Percent Fine Sand	3	3			16.55	31.31	22.3		31.31	16.55
Percent Gravel	3	3			0	46.66	16.1		1.53	46.66
Percent Medium Sand	3	3			9.38	27.06	18.1		17.79	27.06
Percent Clay	3	3			0	10	6.67		10	0
Percent Silt	3	3			2.3	60.69	33.0		36	2.3
Other (%)										
Total Organic Carbon	3	3			4.53	7.13	6.25		4.53	7.13
% Water	3	3			57	95	74.33		57	95
Solids, Percent	3	3			56.6	64.7	61.9		64.4	64.7

Tab 3

Summary Statistics and Analytical Results for Floodplain Soil - Lyman Mill

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	LPX-FP-4004-0000-01 7/19/2001 DUPLICATE	LPX-FP-4004-0000-01 7/19/2001	LPX-FP-4006-0000-01 7/19/2001
Percent_moisture	3	3			35.3	43.4	38.1		35.6	35.3

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* **106**(12):775-792.

Table 3
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PARAMETER	LPX-FP-4007-0000-01 7/19/2001
Semivolatile Organics (ug/Kg)	
Phenol	580 UJ
4-Methylphenol	580 UJ
2-Nitrophenol	580 UJ
Naphthalene	63.4
2-Methylnaphthalene	35.66
2,4,5-Trichlorophenol	3000 UJ
Acenaphthylene	213.23
Acenaphthene	71.58
2,4-Dinitrophenol	3000 UJ
4-Nitrophenol	3000 UJ
Dibenzofuran	70.22
Fluorene	106.14
Pentachlorophenol	3000 UJ
Phenanthrene	2130.94
Anthracene	275.32
Carbazole	450 J
Di-n-Butylphthalate	89 J
Fluoranthene	4871.19
Pyrene	3846.04
Butylbenzylphthalate	210 J
Benzo(a)anthracene	1748.81
Chrysene	2830.46
bis(2-Ethylhexyl)phthalate	1600
Di-n-octylphthalate	97 J
Benzo(b)fluoranthene	2814.41
Benzo(k)fluoranthene	2383.12
Benzo(a)pyrene	2066.37
Indeno(1,2,3-cd)pyrene	2122.7
Dibenzo(a,h)anthracene	466.27
Benzo(g,h,i)perylene	1970.47
Total PAH	28101.84
1,1'-Biphenyl	15.51
Benzaldehyde	70.51
Pesticides/PCBs (ug/Kg)	
4,4'-DDD	13.15
4,4'-DDE	31.59
4,4'-DDT	43.13
Aldrin	1.36 UJ

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PARAMETER	LPX-FP-4007-0000-01 7/19/2001
alpha-BHC	1.36 U
alpha-Chlordane	22.23
Aroclor, Total	108.73 J
Aroclor-1016	17.06 U
Aroclor-1221	17.06 U
Aroclor-1232	17.06 U
Aroclor-1242	17.06 U
Aroclor-1248	17.06 U
Aroclor-1254	85.28
Aroclor-1260	17.06 U
Aroclor-1268	23.44
beta-BHC	1.36 U
delta-BHC	1.36 U
Dieldrin	5.4
Endosulfan I	1.36 U
Endosulfan II	1.36 U
Endosulfan Sulfate	1.71
Endrin	1.36 U
Endrin Aldehyde	1.36 U
Endrin Ketone	1.36 U
gamma-BHC	1.36 U
gamma-Chlordane	1.36 U
Heptachlor	1.36 U
Heptachlor Epoxide	2.07
Methoxychlor	1.36 U
Technical Chlordane	455.84
Toxaphene	34.12 U
Inorganics (mg/Kg)	
Aluminum	13131 J
Antimony	0.213 J
Arsenic	4.93
Barium	105
Beryllium	0.698
Cadmium	1.76
Chromium	27.2 U
Cobalt	4.94
Copper	86
Iron	18481
Lead	248

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PARAMETER	LPX-FP-4007-0000-01 7/19/2001
Manganese	307
Mercury	0.159
Mercury (methyl)	0.000294 J
Molybdenum	1.42 J
Nickel	20.4
Selenium	0.438 U
Silver	3.88
Thallium	0.289
Vanadium	31.6
Zinc	218
Dioxins/Furans (ug/Kg)	
HCX	0.18874 J
TCX	R
2,3,7,8-TCDD	0.01971 UJ
1,2,3,7,8-PeCDD	0.01264 J
1,2,3,4,7,8-HxCDD	0.02712 J
1,2,3,6,7,8-HxCDD	0.07439 J
1,2,3,7,8,9-HxCDD	0.0722 J
1,2,3,4,6,7,8-HpCDD	1.73931 J
OCDD	11.18023 J
2,3,7,8-TCDF	0.01012 J
1,2,3,7,8-PeCDF	0.00491 J
2,3,4,7,8-PeCDF	0.00844 J
1,2,3,4,7,8-HxCDF	0.03622 J
1,2,3,6,7,8-HxCDF	0.02904 J
2,3,4,6,7,8-HxCDF	0.02515 J
1,2,3,7,8,9-HxCDF	0.00049 J
1,2,3,4,6,7,8-HpCDF	0.84393 J
1,2,3,4,7,8,9-HpCDF	0.03893 J
OCDF	1.99234 J
Total TCDD	0.01971 UJ
Total PeCDD	0.03092 J
Total HxCDD	0.39697 J
Total HpCDD	3.3059 J
Total TCDF	0.01012 J
Total PeCDF	0.17545 J
Total HxCDF	0.60505 J
Total HpCDF	1.97568 J
Toxicity Equivalency (Dioxins, Furans, HCX)	0.0722

Table -3

Summary Statistics and Analytical Results for Floodplain Soil - Lyman Mill

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	LPX-FP-4007-0000-01 7/19/2001
PCB Congeners (ug/Kg)	
2-Monochlorobiphenyl (1)	0.05602 J
4-Chlorobiphenyl (3)	0.03202 UJ
2,2'-Dichlorobiphenyl (4)	0.03331 J
2,3-Dichlorobiphenyl (5)	0.00909 UJ
2,3'-Dichlorobiphenyl (6)	0.00909 UJ
2,4-Dichlorobiphenyl (7)	0.00909 UJ
2,4'-Dichlorobiphenyl (8)	0.10612 J
2,5-Dichlorobiphenyl (9)	0.00909 UJ
2,6-Dichlorobiphenyl (10)	0.00909 UJ
3,4-Dichlorobiphenyl (12)	0.01818 UJ
2,2',3'-Trichlorobiphenyl (16)	0.05857 UJ
2,2',4-Trichlorobiphenyl (17)	0.05303 UJ
2,2',5-Trichlorobiphenyl (18)	0.02107 UJ
2,2',6-Trichlorobiphenyl (19)	0.01607 UJ
2,3,3'-Trichlorobiphenyl (20)	0.32088 UJ
2,3,4'-Trichlorobiphenyl (22)	0.10061 UJ
2,3,6-Trichlorobiphenyl (24)	0.0111 UJ
2,3',4-Trichlorobiphenyl (25)	0.01242 UJ
2,3',5-Trichlorobiphenyl (26)	0.0287 UJ
2,4',5-Trichlorobiphenyl (31)	0.12548 UJ
2,4',6-Trichlorobiphenyl (32)	0.02662 UJ
2,2',3,3'-Tetrachlorobiphenyl (40)	0.17322 J
2,2',3,4'-Tetrachlorobiphenyl (42)	0.08874 J
2,2',3,5-Tetrachlorobiphenyl (43)	0.60003 J
2,2',3,5'-Tetrachlorobiphenyl (44)	0.35865 J
2,2',3,6-Tetrachlorobiphenyl (45)	0.05108 UJ
2,2',3,6'-Tetrachlorobiphenyl (46)	0.01744 J
2,2',4,5-Tetrachlorobiphenyl (48)	0.04088 J
2,2',4,5'-Tetrachlorobiphenyl (49)	0.20372 J
2,2',4,6-Tetrachlorobiphenyl (50)	0.04178 J
2,3,3',4'-Tetrachlorobiphenyl (56)	0.25679 J
2,3,3',6-Tetrachlorobiphenyl (59)	0.03153 J
2,3,4,4'-Tetrachlorobiphenyl (60)	0.12377 J
2,3,4,5-Tetrachlorobiphenyl (61)	1.00572 J
2,3,4',5-Tetrachlorobiphenyl (63)	0.0111 J
2,3,4',6-Tetrachlorobiphenyl (64)	0.18591 J
2,3',4,4'-Tetrachlorobiphenyl (66)	0.50668 J
3,3',4,4'-Tetrachlorobiphenyl (77)	0.13009 J

Table A-3
Summary Statistics and Analytical Results for Floodplain Soil - Lyman Mill

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Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	LPX-FP-4007-0000-01 7/19/2001
3,4,4',5-Tetrachlorobiphenyl (81)	0.09088 UJ
2,2',3,3',4-Pentachlorobiphenyl (82)	0.35037 J
2,2',3,3',5-Pentachlorobiphenyl (83)	0.99228 J
2,2',3,3',6-Pentachlorobiphenyl (84)	0.63553 J
2,2',3,4,4'-Pentachlorobiphenyl (85)	0.43605 J
2,2',3,4,5-Pentachlorobiphenyl (86)	0.86682 J
2,2',3,4,6-Pentachlorobiphenyl (88)	0.37516 J
2,2',3,4,6'-Pentachlorobiphenyl (89)	0.01112 J
2,2',3,4',5-Pentachlorobiphenyl (90)	1.90488 J
2,2',3,5,5'-Pentachlorobiphenyl (92)	0.3854 J
2,2',3,5,6-Pentachlorobiphenyl (93)	1.26177 J
2,3,3',4,4'-Pentachlorobiphenyl (105)	0.85953 J
2,3,3',4,5-Pentachlorobiphenyl (106)	0.1839 J
2,3,3',4',5'-Pentachlorobiphenyl (108)	0.08076 J
2,3,3',4',6-Pentachlorobiphenyl (110)	3.9417 J
2,3,4,4',5-Pentachlorobiphenyl (114)	0.04208 J
2,3',4,4',5-Pentachlorobiphenyl (118)	2.47566 J
3,3',4,4',5-Pentachlorobiphenyl (126)	0.04965 J
2,2',3,3',4,4'-Hexachlorobiphenyl (128)	0.98934 J
2,2',3,3',4,5-Hexachlorobiphenyl (129)	4.6154 J
2,2',3,3',4,5'-Hexachlorobiphenyl (130)	0.31842 J
2,2',3,3',4,6-Hexachlorobiphenyl (131)	0.0532 J
2,2',3,3',4,6'-Hexachlorobiphenyl (132)	2.06364 J
2,2',3,3',5,6-Hexachlorobiphenyl (134)	0.28354 J
2,2',3,3',5,6'-Hexachlorobiphenyl (135)	1.56423 J
2,2',3,3',6,6'-Hexachlorobiphenyl (136)	0.82549 J
2,2',3,4,4',5-Hexachlorobiphenyl (137)	0.57002 J
2,2',3,4,5,5'-Hexachlorobiphenyl (141)	0.61949 J
2,2',3,4,5',6-Hexachlorobiphenyl (144)	0.09088 UJ
2,2',3,4',5,5'-Hexachlorobiphenyl (146)	0.22986 J
2,2',3,4',5,6-Hexachlorobiphenyl (147)	3.86188 J
2,2',4,4',5,5'-Hexachlorobiphenyl (153)	1.49058 J
2,3,3',4,4',5-Hexachlorobiphenyl (156)	0.36906 J
2,3,3',4,4',6-Hexachlorobiphenyl (158)	0.3385 J
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	0.15292 J
3,3',4,4',5,5'-Hexachlorobiphenyl (169)	0.09088 UJ
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	2.04737 J
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)	0.52032 J
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)	0.17475 J

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Summary Statistics and Analytical Results for Floodplain Soil - Lyman Mill

Data Evaluation Report
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PARAMETER	LPX-FP-4007-0000-01 7/19/2001
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)	2.27854 J
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)	0.03272 J
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)	0.18176 UJ
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)	1.13287 J
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)	0.25577 J
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)	1.81522 J
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)	0.18176 UJ
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)	0.46389 J
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)	0.18176 UJ
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)	0.18176 UJ
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	1.15323 J
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	0.03283 J
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)	0.24409 J
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	0.03269 J
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	0.61956 J
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	0.46209 J
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)	0.32156 J
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)	0.18176 UJ
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)	1.29678 J
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (200)	0.19249 J
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)	0.06995 J
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)	0.3485 J
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	0.0305 J
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	1.10967 J
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	0.07063 J
Decachlorobiphenyl (209)	1.25253 J
PCB Congeners, Total	53.13488 J
Toxicity Equivalency (PCB)	0.00552
Grain Size (%)	
Percent Coarse Sand	1.01
Percent Fine Sand	18.92
Percent Gravel	0
Percent Medium Sand	9.38
Percent Clay	10
Percent Silt	60.69
Other (%)	
Total Organic Carbon	7.1
% Water	71
Solids, Percent	56.6

Table 3

Summary Statistics and Analytical Results for Floodplain Soil - Lyman Mill

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Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	LPX-FP-4007-0000-01 7/19/2001
Percent_moisture	43.4

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* 106(12):775-792.

Tab. .4

Summary Statistics and Analytical Results for Aquatic Sediment - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	GMP-SD-5002-0000-01 7/11/2001	GMP-SD-5007-0000-01 7/9/2001
Semivolatile Organics (ug/Kg)									
1,1'-Biphenyl	1	1			30.42	30.42	30.42		30.42 J
2,4,5-Trichlorophenol	0	0							R
2,4-Dinitrophenol	0	0							R
2-Methylnaphthalene	1	1			74.78	74.78	74.78		74.78 J
2-Nitrophenol	0	0							R
4-Methylphenol	0	0							R
4-Nitrophenol	0	0							R
Acenaphthene	1	1			151.13	151.13	151.13		151.13 J
Acenaphthylene	1	1			192.79	192.79	192.79		192.79 J
Anthracene	1	1			433.35	433.35	433.35		433.35 J
Benzaldehyde	1	1			258.29	258.29	258.29		258.29 J
Benzo(a)anthracene	1	1			2199.25	2199.25	2199.25		2199.25 J
Benzo(a)pyrene	1	1			2517.31	2517.31	2517.31		2517.31 J
Benzo(b)fluoranthene	1	1			3085.53	3085.53	3085.53		3085.53 J
Benzo(g,h,i)perylene	1	1			2076.71	2076.71	2076.71		2076.71 J
Benzo(k)fluoranthene	1	1			2834.67	2834.67	2834.67		2834.67 J
bis(2-Ethylhexyl)phthalate	1	1			950	950	950.00		950 J
Butylbenzylphthalate	0	0							R
Carbazole	1	1			130	130	130.00		130 J
Chrysene	1	1			3408.89	3408.89	3408.89		3408.89 J
Dibenzo(a,h)anthracene	1	1			492.72	492.72	492.72		492.72 J
Dibenzofuran	1	1			143.89	143.89	143.89		143.89 J
Di-n-Butylphthalate	1	1			110	110	110.00		110 J
Di-n-octylphthalate	0	0							R
Fluoranthene	1	1			5827.21	5827.21	5827.21		5827.21 J
Fluorene	1	1			277	277	277.00		277 J
Indeno(1,2,3-cd)pyrene	1	1			2183.35	2183.35	2183.35		2183.35 J
Naphthalene	1	1			93.82	93.82	93.82		93.82 J
Pentachlorophenol	0	0							R
Phenanthrene	1	1			2549.79	2549.79	2549.79		2549.79 J
Phenol	0	0							R
Pyrene	1	1			4961.58	4961.58	4961.58		4961.58 J
Total PAH	1	1			33534.18	33534.18	33534.18		33534.18 J
Pesticides/PCBs (ug/Kg)									
4,4'-DDD	4	4			2.15	19.3	10.26	19.3 J	14.71 J
4,4'-DDE	4	4			1.07	31.28	13.75	31.28	20.75 J
4,4'-DDT	2	4	1.03	3.59	1.62	5.21	2.29	5.21 J	3.59 UJ
Aldrin	0	4	0.91	3.59			1.06	2.96 U	3.59 UJ
alpha-BHC	0	4	0.91	3.59			1.06	2.96 UJ	3.59 UJ

Table 4

Summary Statistics and Analytical Results for Aquatic Sediment - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	GMP-SD-5002-0000-01 7/11/2001	GMP-SD-5007-0000-01 7/9/2001
alpha-Chlordane	4	4			3.09	17.46	10.01	14.11	17.46 J
Aroclor, Total	4	4			139.92	427.92	291.88	427.92	401.74
Aroclor-1016	0	4	11.42	44.83			13.26	36.97 U	44.83 U
Aroclor-1221	0	4	11.42	44.83			13.26	36.97 U	44.83 U
Aroclor-1232	0	4	11.42	44.83			13.26	36.97 U	44.83 U
Aroclor-1242	0	4	11.42	44.83			13.26	36.97 U	44.83 U
Aroclor-1248	0	4	11.42	44.83			13.26	36.97 U	44.83 U
Aroclor-1254	4	4			117.91	181.26	154.62	181.26	159.11
Aroclor-1260	0	4	11.42	44.83			13.26	36.97 U	44.83 U
Aroclor-1268	4	4			22.01	246.67	137.26	246.67	242.63
beta-BHC	0	4	0.91	3.59			1.06	2.96 UJ	3.59 UJ
delta-BHC	0	4	0.91	3.59			1.06	2.96 UJ	3.59 UJ
Dieldrin	4	4			1.77	5.1	3.36	5.1 J	4.6 J
Endosulfan I	0	4	0.91	3.59			1.06	2.96 UJ	3.59 UJ
Endosulfan II	0	4	0.91	3.59			1.06	2.96 UJ	3.59 UJ
Endosulfan Sulfate	0	4	0.91	3.59			1.06	2.96 UJ	3.59 UJ
Endrin	1	4	0.91	3.59	2.96	2.96	1.43	2.96	3.59 UJ
Endrin Aldehyde	0	4	0.91	3.59			1.06	2.96 UJ	3.59 UJ
Endrin Ketone	0	4	0.91	3.59			1.06	2.96 UJ	3.59 UJ
gamma-BHC	0	4	0.91	3.59			1.06	2.96 UJ	3.59 UJ
gamma-Chlordane	4	4			1.92	10.16	6.13	10.16	8.79 J
Heptachlor	0	4	0.91	3.59			1.06	2.96 UJ	3.59 UJ
Heptachlor Epoxide	0	4	0.91	3.59			1.06	2.96 UJ	3.59 UJ
Methoxychlor	0	4	0.91	3.59			1.06	2.96 UJ	3.59 UJ
Technical Chlordane	4	4			151.85	626.18	401.54	602	626.18
Toxaphene	0	4	22.85	89.67			26.51	73.94 U	89.67 U
Inorganics (mg/Kg)									
Aluminum	5	5			4545	24690	12175	24690 J	20568 J
Antimony	2	5	0.0311	0.161	0.367	0.368	0.174	0.367 J	0.368 J
Arsenic	5	5			1.33	7.03	3.58	6.14 J	7.03 J
Barium	5	5			40.6	374	163	374 J	293 J
Beryllium	5	5			0.701	5.07	2.39	5.07	4.67
Cadmium	5	5			0.238	4.35	1.79	4.35	3.68
Chromium	5	5			36.4	171	89.9	171 J	109 J
Cobalt	5	5			4.7	15.3	8.73	12.9	15.3
Copper	5	5			18.9	94.1	44.1	94.1 J	53.4
Iron	5	5			8351	28339	16453	28019	28339
Lead	5	5			37.1	543	201	543 J	293 J
Manganese	5	5			162	1019	517	1004 J	1019 J
Mercury	5	5			0.0458	0.757	0.308	0.757	0.58 J

Table 4-4

Summary Statistics and Analytical Results for Aquatic Sediment - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	GMP-SD-5002-0000-01 7/11/2001	GMP-SD-5007-0000-01 7/9/2001
Mercury (methyl)	4	4			0.000079	0.000658	0.000255	0.000658 J	0.000142 J
Molybdenum	5	5			7.01	17.2	12.6	8.26	7.01
Nickel	5	5			2.03	39.3	14.4	39.3 J	19.2
Selenium	2	5	0.206	1.06	1.03	1.06	0.566	1.03 J	1.06 J
Silver	4	5	0.132	0.132	0.258	3.26	1.23	3.26	2.21
Thallium	5	5			0.079	0.696	0.302	0.696 J	0.524 J
Vanadium	5	5			18.6	49.2	31.5	49.2	43.7
Zinc	5	5			62.3	854	368	854 J	736 J
AVS/SEM (mg/Kg)									
Cadmium	4	4			0.144	3.03	1.50	2.62 J	3.03 J
Copper	4	4			7.29	94.1	41.3	94.1 J	53.4
Lead	4	4			50.4	596	246	596 J	271
Mercury	4	4			0.00283	0.0142	0.00719	0.0142 J	0.00873 J
Nickel	4	4			2.03	39.3	16.1	39.3 J	19.2
Zinc	2	4	42.1	194	608	790	379	790 J	608
Acid Volatile Sulfide	4	4			13.6	304	199	223 J	304 J
AVS/SEM Ration (unitless)	4	4			0.505	4.81	2.89	2.55	4.81
Dioxins/Furans (ug/Kg)									
HCX	3	3			0.02278	0.15429	0.06799	0.15429 J	
TCX	0	0						R	
2,3,7,8-TCDD	1	3	0.00076	0.00102	0.00277	0.00277	0.00122	0.00277 J	
1,2,3,7,8-PeCDD	1	3	0.00069	0.00105	0.00215	0.00215	0.00101	0.00215 J	
1,2,3,4,7,8-HxCDD	3	3			0.00143	0.00252	0.00190	0.00252 J	
1,2,3,6,7,8-HxCDD	3	3			0.00514	0.0101	0.00765	0.0101 J	
1,2,3,7,8,9-HxCDD	2	3	0.00357	0.00357	0.00682	0.00823	0.00561	0.00823 J	
1,2,3,4,6,7,8-HpCDD	3	3			0.06726	0.2079	0.12726	0.2079 J	
OCDD	3	3			0.46938	1.60128	0.88503	1.60128 J	
2,3,7,8-TCDF	3	3			0.00418	0.00676	0.00506	0.00676 JS	
1,2,3,7,8-PeCDF	1	3	0.00112	0.00201	0.00273	0.00273	0.00143	0.00273 J	
2,3,4,7,8-PeCDF	3	3			0.00239	0.00511	0.00381	0.00393 J	
1,2,3,4,7,8-HxCDF	3	3			0.00439	0.01018	0.00733	0.01018 J	
1,2,3,6,7,8-HxCDF	3	3			0.00256	0.00815	0.00547	0.00815 J	
2,3,4,6,7,8-HxCDF	3	3			0.00174	0.00491	0.00382	0.0048 J	
1,2,3,7,8,9-HxCDF	0	3	0.00047	0.0064			0.00141	0.00047 UJ	
1,2,3,4,6,7,8-HpCDF	3	3			0.02607	0.22668	0.11178	0.08258 J	
1,2,3,4,7,8,9-HpCDF	2	3	0.00135	0.00135	0.00324	0.00443	0.00278	0.00443 J	
OCDF	3	3			0.04494	0.13339	0.09364	0.13339 J	
Total TCDD	1	3	0.00102	0.00272	0.00881	0.00881	0.00356	0.00881 J	
Total PeCDD	2	3	0.00105	0.00105	0.00596	0.00765	0.00471	0.00765 J	
Total HxCDD	2	3	0.03703	0.03703	0.06252	0.07278	0.05127	0.07278 J	

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Summary Statistics and Analytical Results for Aquatic Sediment - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	GMP-SD-5002-0000-01 7/11/2001	GMP-SD-5007-0000-01 7/9/2001
Total HpCDD	2	3	0.14094	0.14094	0.20587	0.40124	0.22586	0.40124 J	
Total TCDF	2	3	0.00363	0.00363	0.02397	0.0398	0.02186	0.0398 J	
Total PeCDF	3	3			0.04811	0.08535	0.06694	0.08535 J	
Total HxCDF	3	3			0.0379	0.14892	0.09862	0.10904 J	
Total HpCDF	3	3			0.05335	0.38144	0.20167	0.17021 J	
Toxicity Equivalency (Dioxins, Furans, HCX)	3	3			0.00549	0.0152	0.00973	0.0152	
PCB Congeners (ug/Kg)									
2-Monochlorobiphenyl (1)	1	1			0.0315	0.0315	0.03150		
4-Chlorobiphenyl (3)	0	1	0.04019	0.04019			0.02010		
2,2'-Dichlorobiphenyl (4)	1	1			0.1479	0.1479	0.14790		
2,3-Dichlorobiphenyl (5)	0	1	0.00716	0.00716			0.00358		
2,3'-Dichlorobiphenyl (6)	1	1			0.12849	0.12849	0.12849		
2,4-Dichlorobiphenyl (7)	0	1	0.00716	0.00716			0.00358		
2,4'-Dichlorobiphenyl (8)	1	1			0.66632	0.66632	0.66632		
2,5-Dichlorobiphenyl (9)	0	1	0.00716	0.00716			0.00358		
2,6-Dichlorobiphenyl (10)	0	1	0.00716	0.00716			0.00358		
3,4-Dichlorobiphenyl (12)	1	1			0.03194	0.03194	0.03194		
2,2',3'-Trichlorobiphenyl (16)	1	1			0.42444	0.42444	0.42444		
2,2',4-Trichlorobiphenyl (17)	1	1			0.42751	0.42751	0.42751		
2,2',5-Trichlorobiphenyl (18)	1	1			0.41152	0.41152	0.41152		
2,2',6-Trichlorobiphenyl (19)	1	1			0.10975	0.10975	0.10975		
2,3,3'-Trichlorobiphenyl (20)	1	1			2.1464	2.1464	2.14640		
2,3,4'-Trichlorobiphenyl (22)	1	1			0.6592	0.6592	0.65920		
2,3,6-Trichlorobiphenyl (24)	1	1			0.26828	0.26828	0.26828		
2,3',4-Trichlorobiphenyl (25)	1	1			0.09804	0.09804	0.09804		
2,3',5-Trichlorobiphenyl (26)	1	1			0.23146	0.23146	0.23146		
2,4',5-Trichlorobiphenyl (31)	1	1			1.05327	1.05327	1.05327		
2,4',6-Trichlorobiphenyl (32)	1	1			0.19292	0.19292	0.19292		
2,2',3,3'-Tetrachlorobiphenyl (40)	1	1			1.0317	1.0317	1.03170		
2,2',3,4'-Tetrachlorobiphenyl (42)	1	1			0.46603	0.46603	0.46603		
2,2',3,5-Tetrachlorobiphenyl (43)	1	1			5.11014	5.11014	5.11014		
2,2',3,5'-Tetrachlorobiphenyl (44)	1	1			2.38707	2.38707	2.38707		
2,2',3,6-Tetrachlorobiphenyl (45)	1	1			0.11397	0.11397	0.11397		
2,2',3,6'-Tetrachlorobiphenyl (46)	1	1			0.08971	0.08971	0.08971		
2,2',4,5-Tetrachlorobiphenyl (48)	1	1			0.207	0.207	0.20700		
2,2',4,5'-Tetrachlorobiphenyl (49)	1	1			1.32892	1.32892	1.32892		
2,2',4,6-Tetrachlorobiphenyl (50)	1	1			0.25604	0.25604	0.25604		
2,3,3',4'-Tetrachlorobiphenyl (56)	1	1			0.74492	0.74492	0.74492		
2,3,3',6-Tetrachlorobiphenyl (59)	1	1			0.1083	0.1083	0.10830		
2,3,4,4'-Tetrachlorobiphenyl (60)	1	1			0.10132	0.10132	0.10132		

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	GMP-SD-5002-0000-01 7/11/2001	GMP-SD-5007-0000-01 7/9/2001
2,3,4,5-Tetrachlorobiphenyl (61)	1	1			4.5862	4.5862	4.58620		
2,3,4',5-Tetrachlorobiphenyl (63)	0	1	0.07163	0.07163			0.03582		
2,3,4',6-Tetrachlorobiphenyl (64)	1	1			0.76943	0.76943	0.76943		
2,3',4,4'-Tetrachlorobiphenyl (66)	1	1			2.57802	2.57802	2.57802		
3,3',4,4'-Tetrachlorobiphenyl (77)	1	1			0.15317	0.15317	0.15317		
3,4,4',5-Tetrachlorobiphenyl (81)	0	1	0.07163	0.07163			0.03582		
2,2',3,3',4-Pentachlorobiphenyl (82)	1	1			2.50962	2.50962	2.50962		
2,2',3,3',5-Pentachlorobiphenyl (83)	1	1			5.781	5.781	5.78100		
2,2',3,3',6-Pentachlorobiphenyl (84)	1	1			5.49037	5.49037	5.49037		
2,2',3,4,4'-Pentachlorobiphenyl (85)	1	1			2.8392	2.8392	2.83920		
2,2',3,4,5-Pentachlorobiphenyl (86)	1	1			12.4215	12.4215	12.42150		
2,2',3,4,6-Pentachlorobiphenyl (88)	1	1			2.37902	2.37902	2.37902		
2,2',3,4,6'-Pentachlorobiphenyl (89)	0	1	0.07163	0.07163			0.03582		
2,2',3,4',5-Pentachlorobiphenyl (90)	1	1			11.82084	11.82084	11.82084		
2,2',3,5,5'-Pentachlorobiphenyl (92)	1	1			2.29688	2.29688	2.29688		
2,2',3,5,6-Pentachlorobiphenyl (93)	1	1			14.32595	14.32595	14.32595		
2,3,3',4,4'-Pentachlorobiphenyl (105)	1	1			4.16501	4.16501	4.16501		
2,3,3',4,5-Pentachlorobiphenyl (106)	1	1			0.98105	0.98105	0.98105		
2,3,3',4',5'-Pentachlorobiphenyl (108)	1	1			0.58938	0.58938	0.58938		
2,3,3',4',6-Pentachlorobiphenyl (110)	1	1			25.4803	25.4803	25.48030		
2,3,4,4',5-Pentachlorobiphenyl (114)	1	1			0.19221	0.19221	0.19221		
2,3',4,4',5-Pentachlorobiphenyl (118)	1	1			13.33634	13.33634	13.33634		
3,3',4,4',5-Pentachlorobiphenyl (126)	1	1			0.21685	0.21685	0.21685		
2,2',3,3',4,4'-Hexachlorobiphenyl (128)	1	1			4.37706	4.37706	4.37706		
2,2',3,3',4,5-Hexachlorobiphenyl (129)	1	1			19.17496	19.17496	19.17496		
2,2',3,3',4,5'-Hexachlorobiphenyl (130)	1	1			1.37703	1.37703	1.37703		
2,2',3,3',4,6-Hexachlorobiphenyl (131)	1	1			0.31981	0.31981	0.31981		
2,2',3,3',4,6'-Hexachlorobiphenyl (132)	1	1			8.9453	8.9453	8.94530		
2,2',3,3',5,6-Hexachlorobiphenyl (134)	1	1			1.28898	1.28898	1.28898		
2,2',3,3',5,6'-Hexachlorobiphenyl (135)	1	1			4.32768	4.32768	4.32768		
2,2',3,3',6,6'-Hexachlorobiphenyl (136)	1	1			2.8966	2.8966	2.89660		
2,2',3,4,4',5-Hexachlorobiphenyl (137)	1	1			2.41698	2.41698	2.41698		
2,2',3,4,5,5'-Hexachlorobiphenyl (141)	1	1			2.24539	2.24539	2.24539		
2,2',3,4,5',6-Hexachlorobiphenyl (144)	0	1	0.07163	0.07163			0.03582		
2,2',3,4',5,5'-Hexachlorobiphenyl (146)	1	1			1.3242	1.3242	1.32420		
2,2',3,4',5,6-Hexachlorobiphenyl (147)	1	1			12.13772	12.13772	12.13772		
2,2',4,4',5,5'-Hexachlorobiphenyl (153)	1	1			5.2006	5.2006	5.20060		
2,3,3',4,4',5-Hexachlorobiphenyl (156)	1	1			1.93846	1.93846	1.93846		
2,3,3',4,4',6-Hexachlorobiphenyl (158)	1	1			1.65512	1.65512	1.65512		
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	1	1			0.78217	0.78217	0.78217		

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	GMP-SD-5002-0000-01 7/11/2001	GMP-SD-5007-0000-01 7/9/2001
3,3',4,4',5,5'-Hexachlorobiphenyl (169)	0	1	0.07163	0.07163			0.03582		
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	1	1			3.17531	3.17531	3.17531		
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)	1	1			0.98336	0.98336	0.98336		
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)	1	1			0.25272	0.25272	0.25272		
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)	1	1			3.31878	3.31878	3.31878		
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)	1	1			0.0608	0.0608	0.06080		
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)	1	1			0.33041	0.33041	0.33041		
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)	1	1			1.4486	1.4486	1.44860		
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)	1	1			0.2611	0.2611	0.26110		
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)	1	1			2.14444	2.14444	2.14444		
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)	0	1	0.14326	0.14326			0.07163		
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)	1	1			0.62466	0.62466	0.62466		
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)	0	1	0.14326	0.14326			0.07163		
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)	1	1			0.11323	0.11323	0.11323		
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	1	1			1.13568	1.13568	1.13568		
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	1	1			0.07274	0.07274	0.07274		
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)	1	1			0.35109	0.35109	0.35109		
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	1	1			0.0637	0.0637	0.06370		
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	1	1			0.36984	0.36984	0.36984		
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	1	1			0.22435	0.22435	0.22435		
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)	1	1			0.23822	0.23822	0.23822		
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)	1	1			0.01164	0.01164	0.01164		
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)	1	1			1.15346	1.15346	1.15346		
2,2',3,3',4,5,5',6'-Octachlorobiphenyl (199)	1	1			0.07298	0.07298	0.07298		
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)	1	1			0.10466	0.10466	0.10466		
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)	1	1			0.36362	0.36362	0.36362		
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	1	1			0.0221	0.0221	0.02210		
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	1	1			1.73154	1.73154	1.73154		
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	1	1			0.10336	0.10336	0.10336		
Decachlorobiphenyl (209)	1	1			1.79894	1.79894	1.79894		
PCB Congeners, Total	1	1			222.86598	222.86598	222.86598		
Toxicity Equivalency (PCB)	1	1			0.0245	0.0245	0.0245		
Grain Size (%)									
Percent Coarse Sand	4	4			0	8.78	2.43	0	0
Percent Fine Sand	4	4			2.47	66.27	27.7	2.47 J	7.76
Percent Gravel	4	4			0	0.14	0.0350	0	0
Percent Medium Sand	4	4			0.53	45.07	17.6	0.53	0.64
Percent Clay	4	4			3	38	17.4	38	24.02
Percent Silt	4	4			5.38	67.57	34.9	59	67.57
Other (%)									

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	GMP-SD-5002-0000-01 7/11/2001	GMP-SD-5007-0000-01 7/9/2001
Total Organic Carbon	4	4			2.01	14.09	7.52	11.95	14.09
% Water	4	4			56	569	311	569	556
Solids, Percent	1	1			18.5	18.5	18.5		18.5
Percent_moisture	1	1			81.5	81.5	81.5		81.5

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* **106**(12):775-792.

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PARAMETER	RWR-SD-5003-0000-01 7/12/2001	RWR-SD-5004-0000-01 7/12/2001
Semivolatile Organics (ug/Kg)		
1,1'-Biphenyl		
2,4,5-Trichlorophenol		
2,4-Dinitrophenol		
2-Methylnaphthalene		
2-Nitrophenol		
4-Methylphenol		
4-Nitrophenol		
Acenaphthene		
Acenaphthylene		
Anthracene		
Benzaldehyde		
Benzo(a)anthracene		
Benzo(a)pyrene		
Benzo(b)fluoranthene		
Benzo(g,h,i)perylene		
Benzo(k)fluoranthene		
bis(2-Ethylhexyl)phthalate		
Butylbenzylphthalate		
Carbazole		
Chrysene		
Dibenzo(a,h)anthracene		
Dibenzofuran		
Di-n-Butylphthalate		
Di-n-octylphthalate		
Fluoranthene		
Fluorene		
Indeno(1,2,3-cd)pyrene		
Naphthalene		
Pentachlorophenol		
Phenanthrene		
Phenol		
Pyrene		
Total PAH		
Pesticides/PCBs (ug/Kg)		
4,4'-DDD	2.15	4.87
4,4'-DDE	1.07	1.9
4,4'-DDT	1.62	1.03 U
Aldrin	0.91 U	1.03 U
alpha-BHC	0.91 U	1.03 U

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PARAMETER	RWR-SD-5003-0000-01 7/12/2001	RWR-SD-5004-0000-01 7/12/2001
alpha-Chlordane	5.39	3.09
Aroclor, Total	139.92	197.92
Aroclor-1016	11.42 U	12.82 U
Aroclor-1221	11.42 U	12.82 U
Aroclor-1232	11.42 U	12.82 U
Aroclor-1242	11.42 U	12.82 U
Aroclor-1248	11.42 U	12.82 U
Aroclor-1254	117.91	160.19
Aroclor-1260	11.42 U	12.82 U
Aroclor-1268	22.01	37.73
beta-BHC	0.91 U	1.03 U
delta-BHC	0.91 U	1.03 U
Dieldrin	1.96	1.77
Endosulfan I	0.91 U	1.03 U
Endosulfan II	0.91 U	1.03 U
Endosulfan Sulfate	0.91 U	1.03 U
Endrin	0.91 U	1.03 U
Endrin Aldehyde	0.91 U	1.03 UJ
Endrin Ketone	0.91 UJ	1.03 U
gamma-BHC	0.91 U	1.03 U
gamma-Chlordane	3.63	1.92
Heptachlor	0.91 UJ	1.03 UJ
Heptachlor Epoxide	0.91 UJ	1.03 UJ
Methoxychlor	0.91 UJ	1.03 UJ
Technical Chlordane	226.11	151.85
Toxaphene	22.85 U	25.65 U
Inorganics (mg/Kg)		
Aluminum	5267 J	4545 J
Antimony	0.08 U	0.101 U
Arsenic	1.33 J	1.92 J
Barium	40.6 J	59.3 J
Beryllium	0.701	0.752
Cadmium	0.238 J	0.374 J
Chromium	36.4 J	95.7 J
Cobalt	4.7	4.83
Copper	18.9	34.5
Iron	8351	8475
Lead	37.1 J	87.7 J
Manganese	162 J	222 J
Mercury	0.0458	0.109

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PARAMETER	RWR-SD-5003-0000-01 7/12/2001	RWR-SD-5004-0000-01 7/12/2001
Mercury (methyl)	0.000141 J	0.000079 J
Molybdenum	15	17.2
Nickel	3.98 J	2.03 J
Selenium	0.206 U	0.211 U
Silver	0.132 U	0.371
Thallium	0.079 J	0.105 J
Vanadium	18.6	23.9
Zinc	62.3 J	113 J
AVS/SEM (mg/Kg)		
Cadmium	0.198 J	0.144 J
Copper	7.29 J	10.4 J
Lead	50.4 J	66.9 J
Mercury	0.003 J	0.00283 J
Nickel	3.98 J	2.03 J
Zinc	194 U	42.1 U
Acid Volatile Sulfide	255 J	13.6 J
AVS/SEM Ration (unitless)	3.68	0.505
Dioxins/Furans (ug/Kg)		
HCX	0.02278 J	0.02689 J
TCX	R	R
2,3,7,8-TCDD	0.00102 U	0.00076 U
1,2,3,7,8-PeCDD	0.00105 U	0.00069 U
1,2,3,4,7,8-HxCDD	0.00143 J	0.00176 J
1,2,3,6,7,8-HxCDD	0.00514 J	0.00771
1,2,3,7,8,9-HxCDD	0.00357 U	0.00682
1,2,3,4,6,7,8-HpCDD	0.06726 J	0.10663
OCDD	0.46938 J	0.58443
2,3,7,8-TCDF	0.00418 $	0.00424 $
1,2,3,7,8-PeCDF	0.00201 U	0.00112 U
2,3,4,7,8-PeCDF	0.00511 J	0.00239 J
1,2,3,4,7,8-HxCDF	0.00439 J	0.00742
1,2,3,6,7,8-HxCDF	0.00256 J	0.00571
2,3,4,6,7,8-HxCDF	0.00174 J	0.00491
1,2,3,7,8,9-HxCDF	0.00156 U	0.0064 UJ
1,2,3,4,6,7,8-HpCDF	0.02607	0.22668
1,2,3,4,7,8,9-HpCDF	0.00135 U	0.00324 J
OCDF	0.04494	0.10259
Total TCDD	0.00102 UJ	0.00272 UJ
Total PeCDD	0.00105 UJ	0.00596 J
Total HxCDD	0.03703 UJ	0.06252 J

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PARAMETER	RWR-SD-5003-0000-01 7/12/2001	RWR-SD-5004-0000-01 7/12/2001
Total HpCDD	0.14094 UJ	0.20587 J
Total TCDF	0.00363 UJ	0.02397 J
Total PeCDF	0.04811 J	0.06737 J
Total HxCDF	0.0379 J	0.14892 J
Total HpCDF	0.05335 J	0.38144 J
Toxicity Equivalency (Dioxins, Furans, HCX)	0.00549	0.00849
PCB Congeners (ug/Kg)		
2-Monochlorobiphenyl (1)	0.0315 J	
4-Chlorobiphenyl (3)	0.04019 UJ	
2,2'-Dichlorobiphenyl (4)	0.1479 J	
2,3-Dichlorobiphenyl (5)	0.00716 UJ	
2,3'-Dichlorobiphenyl (6)	0.12849 J	
2,4-Dichlorobiphenyl (7)	0.00716 UJ	
2,4'-Dichlorobiphenyl (8)	0.66632 J	
2,5-Dichlorobiphenyl (9)	0.00716 UJ	
2,6-Dichlorobiphenyl (10)	0.00716 UJ	
3,4-Dichlorobiphenyl (12)	0.03194 J	
2,2',3'-Trichlorobiphenyl (16)	0.42444 J	
2,2',4-Trichlorobiphenyl (17)	0.42751 J	
2,2',5-Trichlorobiphenyl (18)	0.41152 J	
2,2',6-Trichlorobiphenyl (19)	0.10975 J	
2,3,3'-Trichlorobiphenyl (20)	2.1464 J	
2,3,4'-Trichlorobiphenyl (22)	0.6592 J	
2,3,6-Trichlorobiphenyl (24)	0.26828 J	
2,3',4-Trichlorobiphenyl (25)	0.09804 J	
2,3',5-Trichlorobiphenyl (26)	0.23146 J	
2,4',5-Trichlorobiphenyl (31)	1.05327 J	
2,4',6-Trichlorobiphenyl (32)	0.19292 J	
2,2',3,3'-Tetrachlorobiphenyl (40)	1.0317 J	
2,2',3,4'-Tetrachlorobiphenyl (42)	0.46603 J	
2,2',3,5-Tetrachlorobiphenyl (43)	5.11014 J	
2,2',3,5'-Tetrachlorobiphenyl (44)	2.38707 J	
2,2',3,6-Tetrachlorobiphenyl (45)	0.11397 J	
2,2',3,6'-Tetrachlorobiphenyl (46)	0.08971 J	
2,2',4,5-Tetrachlorobiphenyl (48)	0.207 J	
2,2',4,5'-Tetrachlorobiphenyl (49)	1.32892 J	
2,2',4,6-Tetrachlorobiphenyl (50)	0.25604 J	
2,3,3',4'-Tetrachlorobiphenyl (56)	0.74492 J	
2,3,3',6-Tetrachlorobiphenyl (59)	0.1083 J	
2,3,4,4'-Tetrachlorobiphenyl (60)	0.10132 J	

Summary Statistics and Analytical Results for Aquatic Sediment - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	RWR-SD-5003-0000-01 7/12/2001	RWR-SD-5004-0000-01 7/12/2001
2,3,4,5-Tetrachlorobiphenyl (61)	4.5862 J	
2,3,4',5-Tetrachlorobiphenyl (63)	0.07163 UJ	
2,3,4',6-Tetrachlorobiphenyl (64)	0.76943 J	
2,3',4,4'-Tetrachlorobiphenyl (66)	2.57802 J	
3,3',4,4'-Tetrachlorobiphenyl (77)	0.15317 J	
3,4,4',5-Tetrachlorobiphenyl (81)	0.07163 UJ	
2,2',3,3',4-Pentachlorobiphenyl (82)	2.50962 J	
2,2',3,3',5-Pentachlorobiphenyl (83)	5.781 J	
2,2',3,3',6-Pentachlorobiphenyl (84)	5.49037 J	
2,2',3,4,4'-Pentachlorobiphenyl (85)	2.8392 J	
2,2',3,4,5-Pentachlorobiphenyl (86)	12.4215 J	
2,2',3,4,6-Pentachlorobiphenyl (88)	2.37902 J	
2,2',3,4,6'-Pentachlorobiphenyl (89)	0.07163 UJ	
2,2',3,4',5-Pentachlorobiphenyl (90)	11.82084 J	
2,2',3,5,5'-Pentachlorobiphenyl (92)	2.29688 J	
2,2',3,5,6-Pentachlorobiphenyl (93)	14.32595 J	
2,3,3',4,4'-Pentachlorobiphenyl (105)	4.16501 J	
2,3,3',4,5-Pentachlorobiphenyl (106)	0.98105 J	
2,3,3',4',5'-Pentachlorobiphenyl (108)	0.58938 J	
2,3,3',4',6-Pentachlorobiphenyl (110)	25.4803 J	
2,3,4,4',5-Pentachlorobiphenyl (114)	0.19221 J	
2,3',4,4',5-Pentachlorobiphenyl (118)	13.33634 J	
3,3',4,4',5-Pentachlorobiphenyl (126)	0.21685 J	
2,2',3,3',4,4'-Hexachlorobiphenyl (128)	4.37706 J	
2,2',3,3',4,5-Hexachlorobiphenyl (129)	19.17496 J	
2,2',3,3',4,5'-Hexachlorobiphenyl (130)	1.37703 J	
2,2',3,3',4,6-Hexachlorobiphenyl (131)	0.31981 J	
2,2',3,3',4,6'-Hexachlorobiphenyl (132)	8.9453 J	
2,2',3,3',5,6-Hexachlorobiphenyl (134)	1.28898 J	
2,2',3,3',5,6'-Hexachlorobiphenyl (135)	4.32768 J	
2,2',3,3',6,6'-Hexachlorobiphenyl (136)	2.8966 J	
2,2',3,4,4',5-Hexachlorobiphenyl (137)	2.41698 J	
2,2',3,4,5,5'-Hexachlorobiphenyl (141)	2.24539 J	
2,2',3,4,5',6-Hexachlorobiphenyl (144)	0.07163 UJ	
2,2',3,4',5,5'-Hexachlorobiphenyl (146)	1.3242 J	
2,2',3,4',5,6-Hexachlorobiphenyl (147)	12.13772 J	
2,2',4,4',5,5'-Hexachlorobiphenyl (153)	5.2006 J	
2,3,3',4,4',5-Hexachlorobiphenyl (156)	1.93846 J	
2,3,3',4,4',6-Hexachlorobiphenyl (158)	1.65512 J	
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	0.78217 J	

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PARAMETER	RWR-SD-5003-0000-01 7/12/2001	RWR-SD-5004-0000-01 7/12/2001
3,3',4,4',5,5'-Hexachlorobiphenyl (169)	0.07163 UJ	
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	3.17531 J	
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)	0.98336 J	
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)	0.25272 J	
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)	3.31878 J	
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)	0.0608 J	
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)	0.33041 J	
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)	1.4486 J	
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)	0.2611 J	
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)	2.14444 J	
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)	0.14326 UJ	
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)	0.62466 J	
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)	0.14326 UJ	
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)	0.11323 J	
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	1.13568 J	
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	0.07274 J	
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)	0.35109 J	
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	0.0637 J	
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	0.36984 J	
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	0.22435 J	
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)	0.23822 J	
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)	0.01164 J	
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)	1.15346 J	
2,2',3,3',4,5,5',6'-Octachlorobiphenyl (199)	0.07298 J	
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)	0.10466 J	
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)	0.36362 J	
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	0.0221 J	
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	1.73154 J	
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	0.10336 J	
Decachlorobiphenyl (209)	1.79894 J	
PCB Congeners, Total	222.86598 J	
Toxicity Equivalency (PCB)	0.0245	
Grain Size (%)		
Percent Coarse Sand	0.95	8.78
Percent Fine Sand	66.27 J	34.28 J
Percent Gravel	0.14	0
Percent Medium Sand	24.27	45.07
Percent Clay	3	4.4
Percent Silt	5.38	7.48
Other (%)		

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PARAMETER	RWR-SD-5003-0000-01 7/12/2001	RWR-SD-5004-0000-01 7/12/2001
Total Organic Carbon	2.01	2.02
% Water	56	63
Solids, Percent		
Percent_moisture		

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* **106**(12):775-792.

TABLE A-5

Summary Statistics and Analytical Results for Aquatic Sediment - Allendale

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	APB-SD-4008-0000-01 7/9/2001	APB-SD-4009-0000-01 7/9/2001	APB-SD-4010-0000-01 7/10/2001
Semivolatile Organics (ug/Kg)										
1,1'-Biphenyl	3	3			40.26	85.03	63.37	40.26 J	64.82	85.03
2,4,5-Trichlorophenol	1	2	2300	2300	80	80	615.00	R	2300 U	80 J
2,4-Dinitrophenol	0	2	1700	2300			1000.00	R	2300 UJ	1700 UJ
2-Methylnaphthalene	3	3			66.88	136.08	108.47	66.88 J	122.44	136.08
2-Nitrophenol	0	2	320	450			192.50	R	450 U	320 U
4-Methylphenol	2	3	450	450	470	830	508.33	470 J	450 U	830
4-Nitrophenol	0	2	1700	2300			1000.00	R	2300 UJ	1700 UJ
Acenaphthene	3	3			113.84	287.52	221.57	113.84 J	287.52	263.36
Acenaphthylene	3	3			89.66	308.14	211.53	236.79 J	308.14	89.66
Anthracene	3	3			369.98	788.07	531.61	369.98 J	788.07	436.79
Benzaldehyde	3	3			40.89	349.35	194.92	349.35 J	194.53	40.89
Benzo(a)anthracene	3	3			1499.94	3828.86	2598.56	2466.87 J	3828.86	1499.94
Benzo(a)pyrene	3	3			1179.66	4315.76	2709.48	2633.03 J	4315.76	1179.66
Benzo(b)fluoranthene	3	3			1588.89	5099.55	3575.61	4038.38 J	5099.55	1588.89
Benzo(g,h,i)perylene	3	3			869.89	3509.6	2370.79	2732.88 J	3509.6	869.89
Benzo(k)fluoranthene	3	3			1456.18	4802.01	3296.51	3631.35 J	4802.01	1456.18
bis(2-Ethylhexyl)phthalate	3	3			900	6400	2833.33	900 J	1200	6400 J
Butylbenzylphthalate	3	3			87	270	165.67	270 J	140 J	87 J
Carbazole	3	3			110	1600	846.67	110 J	1600	830 J
Chrysene	3	3			2081.32	5707.1	3977.49	4144.06 J	5707.1	2081.32
Dibenzo(a,h)anthracene	3	3			196.26	819.43	548.04	628.43 J	819.43	196.26
Dibenzofuran	3	3			118.5	253.58	181.64	118.5 J	253.58	172.83
Di-n-Butylphthalate	1	2	450	450	120	120	172.50	R	450 U	120 J
Di-n-octylphthalate	1	2	450	450	160	160	192.50	R	450 UJ	160 J
Fluoranthene	3	3			5097.93	10343.86	7265.54	6354.84 J	10343.86	5097.93
Fluorene	3	3			214.94	435.14	338.61	214.94 J	435.14	365.76
Indeno(1,2,3-cd)pyrene	3	3			830.42	3775.81	2504.25	2906.51 J	3775.81	830.42
Naphthalene	3	3			98.97	181.26	129.51	98.97 J	181.26	108.3
Pentachlorophenol	0	2	1700	2300			1000.00	R	2300 UJ	1700 UJ
Phenanthrene	3	3			2429.87	5178.94	3640.25	2429.87 J	5178.94	3311.94
Phenol	0	2	320	450			192.50	R	450 U	320 U
Pyrene	3	3			3954.64	8433.49	5872.26	5228.66 J	8433.49	3954.64
Total PAH	3	3			23724.86	58255.36	40145.09	38455.05 J	58255.36	23724.86
Pesticides/PCBs (ug/Kg)										
4,4'-DDD	6	6			0.02	20.83	14.56	17.81 J	19.75 J	16.76 J
4,4'-DDE	6	6			2.62	19.04	12.54	19.04	14.77	16.04
4,4'-DDT	2	6	0.84	2.54	2.76	4.84	1.83	2.54 UJ	4.84 J	0.84 UJ
Aldrin	0	6	0.84	2.54			0.82	2.54 U	1.84 U	0.84 U
alpha-BHC	0	6	0.84	2.54			0.82	2.54 UJ	1.84 UJ	0.84 UJ

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Summary Statistics and Analytical Results for Aquatic Sediment - Allendale

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	APB-SD-4008-0000-01 7/9/2001	APB-SD-4009-0000-01 7/9/2001	APB-SD-4010-0000-01 7/10/2001
alpha-Chlordane	6	6			2.37	21.73	11.04	21.73	18.07	6.26
Aroclor, Total	6	6			273.86	3251.84	1333.18	809.66	1589.96	3251.84
Aroclor-1016	0	6	10.5	31.72			10.27	31.72 U	22.98 U	10.5 U
Aroclor-1221	0	6	10.5	31.72			10.27	31.72 U	22.98 U	10.5 U
Aroclor-1232	0	6	10.5	31.72			10.27	31.72 U	22.98 U	10.5 U
Aroclor-1242	0	6	10.5	31.72			10.27	31.72 U	22.98 U	10.5 U
Aroclor-1248	0	6	10.5	31.72			10.27	31.72 U	22.98 U	10.5 U
Aroclor-1254	6	6			172.09	3211.48	1234.34	653.23	1466.65	3211.48
Aroclor-1260	0	6	10.5	31.72			10.27	31.72 U	22.98 U	10.5 U
Aroclor-1268	6	6			40.36	156.42	98.84	156.42	123.3	40.36
beta-BHC	0	6	0.84	2.54			0.82	2.54 UJ	1.84 UJ	0.84 UJ
delta-BHC	0	6	0.84	2.54			0.82	2.54 UJ	1.84 UJ	0.84 UJ
Dieldrin	6	6			3.89	112.97	23.33	4.97 J	8.13 J	112.97 J
Endosulfan I	0	6	0.84	2.54			0.82	2.54 UJ	1.84 UJ	0.84 UJ
Endosulfan II	0	6	0.84	2.54			0.82	2.54 UJ	1.84 UJ	0.84 UJ
Endosulfan Sulfate	0	6	0.84	2.54			0.82	2.54 U	1.84 U	0.84 U
Endrin	0	6	0.84	2.54			0.82	2.54 UJ	1.84 UJ	0.84 UJ
Endrin Aldehyde	0	6	0.84	2.54			0.82	2.54 UJ	1.84 UJ	0.84 UJ
Endrin Ketone	1	6	0.84	2.54	1.29	1.29	0.93	2.54 UJ	1.84 UJ	0.84 UJ
gamma-BHC	2	6	1.59	2.54	0.3	1.29	0.91	2.54 UJ	1.84 UJ	0.3 J
gamma-Chlordane	3	6	0.84	2.54	3.24	7.44	2.96	2.54 U	1.84 U	0.84 U
Heptachlor	0	6	0.84	2.54			0.82	2.54 UJ	1.84 UJ	0.84 UJ
Heptachlor Epoxide	0	6	0.84	2.54			0.82	2.54 UJ	1.84 UJ	0.84 UJ
Methoxychlor	0	6	0.84	2.54			0.82	2.54 UJ	1.84 UJ	0.84 UJ
Technical Chlordane	6	6			281.4	751.05	484.05	751.05	671.59	406.48
Toxaphene	0	6	20.99	63.45			20.54	63.45 U	45.96 U	20.99 U
Inorganics (mg/Kg)										
Aluminum	6	6			5759	22168	13501	22168 J	16155 J	5759 J
Antimony	1	6	0.0566	0.315	0.522	0.522	0.183	0.196 U	0.315 U	0.0566 U
Arsenic	6	6			1.4	11.2	4.86	5.38 J	3.78 J	1.4 J
Barium	6	6			39.5	292	164	292 J	223 J	39.5 J
Beryllium	6	6			0.441	4.12	2.12	4.12	2.5	0.441
Cadmium	5	6	0.16	0.16	0.941	4.93	2.15	2.22 J	1.74 J	0.941
Chromium	6	6			121	186	162	186 J	166 J	150 J
Cobalt	6	6			2.69	16.5	9.32	16.5	10.1	2.69
Copper	6	6			11.6	171	77.8	69.7	43.5	11.6 J
Iron	6	6			10358	30051	18610	30051	21582	10358
Lead	6	6			191	396	263	396 J	258 J	191 J
Manganese	6	6			256	1266	683	936 J	728 J	256 J
Mercury	6	6			0.00988	1.08	0.617	0.673 J	0.632 J	0.924 J

Summary Statistics and Analytical Results for Aquatic Sediment - Allendale

Data Evaluation Report
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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	APB-SD-4008-0000-01 7/9/2001	APB-SD-4009-0000-01 7/9/2001	APB-SD-4010-0000-01 7/10/2001
Mercury (methyl)	6	6			0.000196	0.00285	0.00111	0.000926 J	0.00285 J	0.000196 J
Molybdenum	6	6			1.24	29.6	14.1	13.3	12.3	1.24 J
Nickel	6	6			0.883	94.6	33.3	94.6	31.8	5.41
Selenium	2	6	0.245	0.597	0.806	0.986	0.466	0.806 J	0.596 U	0.245 U
Silver	6	6			0.359	2.44	1.33	2.37	1.26	0.359 J
Thallium	6	6			0.168	0.541	0.361	0.541 J	0.377 J	0.168 J
Vanadium	6	6			17.4	56.4	38.9	56.4	45.9	17.4
Zinc	6	6			131	2088	755	1123 J	548 J	131 J
AVS/SEM (mg/Kg)										
Cadmium	5	6	0.16	0.16	0.52	4.93	2.08	2.22 J	1.74 J	0.52 J
Copper	6	6			2.16	112	56.0	69.7	43.5	11.6 J
Lead	6	6			3.52	681	320	331	258 J	95.7 J
Mercury	6	6			0.00353	0.0634	0.0193	0.0166 J	0.0112 J	0.0634 J
Nickel	6	6			0.883	94.6	35.9	94.6	31.8	1.68 J
Zinc	4	6	2.67	65.6	548	1624	749	924	548 J	65.6 U
Acid Volatile Sulfide	6	6			1.54	1435	385	116 J	325 J	55.7 J
AVS/SEM Ration (unitless)	6	6			0.845	4.62	2.11	0.845	3.11	1.28
Dioxins/Furans (ug/Kg)										
HCX	3	3			10.80543	135.6088	53.18556			
TCX	0	0								
2,3,7,8-TCDD	3	3			0.3279	3.19928	1.30286			
1,2,3,7,8-PeCDD	2	3	0.00093	0.00093	0.00166	0.00446	0.00220			
1,2,3,4,7,8-HxCDD	3	3			0.00167	0.00567	0.00432			
1,2,3,6,7,8-HxCDD	3	3			0.00597	0.02498	0.01509			
1,2,3,7,8,9-HxCDD	3	3			0.0054	0.02403	0.01753			
1,2,3,4,6,7,8-HpCDD	3	3			0.11089	0.58377	0.31360			
OCDD	3	3			0.70387	5.18587	2.36213			
2,3,7,8-TCDF	3	3			0.00712	0.01985	0.01306			
1,2,3,7,8-PeCDF	2	3	0.00099	0.00099	0.00234	0.00261	0.00182			
2,3,4,7,8-PeCDF	3	3			0.00248	0.00649	0.00429			
1,2,3,4,7,8-HxCDF	3	3			0.00575	0.01366	0.01048			
1,2,3,6,7,8-HxCDF	3	3			0.00514	0.0116	0.00912			
2,3,4,6,7,8-HxCDF	3	3			0.00351	0.00995	0.00675			
1,2,3,7,8,9-HxCDF	0	3	0.00029	0.00045			0.00020			
1,2,3,4,6,7,8-HpCDF	3	3			0.06782	0.19408	0.12659			
1,2,3,4,7,8,9-HpCDF	3	3			0.00276	0.00777	0.00516			
OCDF	3	3			0.07421	0.40583	0.21370			
Total TCDD	3	3			0.3279	3.19928	1.30286			
Total PeCDD	3	3			0.00669	0.01845	0.01131			
Total HxCDD	3	3			0.04375	0.1615	0.12209			

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Summary Statistics and Analytical Results for Aquatic Sediment - Allendale

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Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	APB-SD-4008-0000-01 7/9/2001	APB-SD-4009-0000-01 7/9/2001	APB-SD-4010-0000-01 7/10/2001
Total HpCDD	3	3			0.20089	1.64625	0.78268			
Total TCDF	3	3			0.01859	0.11104	0.06442			
Total PeCDF	3	3			0.09587	0.27032	0.17028			
Total HxCDF	3	3			0.0995	0.22962	0.17276			
Total HpCDF	3	3			0.12976	0.48152	0.28884			
Toxicity Equivalency (Dioxins, Furans, HCX)	3	3			0.337	3.25	1.33			
Grain Size (%)										
Percent Coarse Sand	6	6			0	7.31	3.63	0	0.86	6.32
Percent Fine Sand	6	6			3.38	43.21	26.0	3.38	26.44	43.21
Percent Gravel	6	6			0	6.88	2.35	0	0	0.84
Percent Medium Sand	6	6			0.48	44.36	17.7	0.48	3.43	44.36
Percent Clay	6	6			2	30	13.1	30	15	2
Percent Silt	6	6			3.26	66.14	37.3	66.14	54.27	3.26
Other (%)										
Total Organic Carbon	6	6			1.24	10.35	6.19	10.35	7.75	1.24
% Water	6	6			38	330	169	330	162	38
Solids, Percent	3	3			23.8	77	45.9	23.8	36.8	77
Percent_moisture	3	3			23	76.2	54.1	76.2	63.2	23

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* 106(12):775-792.

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Summary Statistics and Analytical Results for Aquatic Sediment - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	CMS-SD-4003-0000-01 7/12/2001	CMS-SD-4006-0000-01 7/12/2001	CMS-SD-4007-0000-01 7/12/2001
Semivolatile Organics (ug/Kg)			
1,1'-Biphenyl			
2,4,5-Trichlorophenol			
2,4-Dinitrophenol			
2-Methylnaphthalene			
2-Nitrophenol			
4-Methylphenol			
4-Nitrophenol			
Acenaphthene			
Acenaphthylene			
Anthracene			
Benzaldehyde			
Benzo(a)anthracene			
Benzo(a)pyrene			
Benzo(b)fluoranthene			
Benzo(g,h,i)perylene			
Benzo(k)fluoranthene			
bis(2-Ethylhexyl)phthalate			
Butylbenzylphthalate			
Carbazole			
Chrysene			
Dibenzo(a,h)anthracene			
Dibenzofuran			
Di-n-Butylphthalate			
Di-n-octylphthalate			
Fluoranthene			
Fluorene			
Indeno(1,2,3-cd)pyrene			
Naphthalene			
Pentachlorophenol			
Phenanthrene			
Phenol			
Pyrene			
Total PAH			
Pesticides/PCBs (ug/Kg)			
4,4'-DDD	12.19	0.02 J	20.83
4,4'-DDE	2.62	9.15	13.64
4,4'-DDT	2.76	1.76 U	1.59 U
Aldrin	1.29 U	1.76 U	1.59 U
alpha-BHC	1.29 U	1.76 U	1.59 U

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Summary Statistics and Analytical Results for Aquatic Sediment - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	CMS-SD-4003-0000-01 7/12/2001	CMS-SD-4006-0000-01 7/12/2001	CMS-SD-4007-0000-01 7/12/2001
alpha-Chlordane	5.67	12.11	2.37
Aroclor, Total	273.86	530.38	1543.38
Aroclor-1016	16.18 U	22.01 U	19.87 U
Aroclor-1221	16.18 U	22.01 U	19.87 U
Aroclor-1232	16.18 U	22.01 U	19.87 U
Aroclor-1242	16.18 U	22.01 U	19.87 U
Aroclor-1248	16.18 U	22.01 U	19.87 U
Aroclor-1254	172.09	436.66	1465.94
Aroclor-1260	16.18 U	22.01 U	19.87 U
Aroclor-1268	101.77	93.72	77.44
beta-BHC	1.29 U	1.76 U	1.59 U
delta-BHC	1.29 U	1.76 U	1.59 U
Dieldrin	5.46	4.53	3.89
Endosulfan I	1.29 U	1.76 U	1.59 U
Endosulfan II	1.29 U	1.76 U	1.59 U
Endosulfan Sulfate	1.29 U	1.76 U	1.59 U
Endrin	1.29 U	1.76 U	1.59 U
Endrin Aldehyde	1.29 UJ	1.76 UJ	1.59 UJ
Endrin Ketone	1.29	1.76 U	1.59 U
gamma-BHC	1.29	1.76 U	1.59 U
gamma-Chlordane	4.44	7.44	3.24
Heptachlor	1.29 UJ	1.76 UJ	1.59 UJ
Heptachlor Epoxide	1.29 UJ	1.76 UJ	1.59 UJ
Methoxychlor	1.29 UJ	1.76 UJ	1.59 UJ
Technical Chlordane	299.46	494.31	281.4
Toxaphene	32.37 U	44.03 U	39.73 U
Inorganics (mg/Kg)			
Aluminum	8367 J	11211 J	17343 J
Antimony	0.27 U	0.314 U	0.522 J
Arsenic	3.39 J	4.01 J	11.2 J
Barium	88.6 J	189 J	151 J
Beryllium	1.54	2.16	1.95
Cadmium	0.16 U	4.93 J	2.98 J
Chromium	179 J	121 J	167 J
Cobalt	6.74	11.1	8.8
Copper	59.2	112	171
Iron	10939	20567	18164
Lead	223 J	251 J	260 J
Manganese	369 J	1266 J	543 J
Mercury	0.383	0.00988 J	1.08

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Summary Statistics and Analytical Results for Aquatic Sediment - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	CMS-SD-4003-0000-01 7/12/2001	CMS-SD-4006-0000-01 7/12/2001	CMS-SD-4007-0000-01 7/12/2001
Mercury (methyl)	0.000701 J	0.000447 J	0.00155 J
Molybdenum	29.6	17.9	10.4
Nickel	0.883 J	42.9 J	24.4
Selenium	0.597 U	0.566 U	0.986 J
Silver	0.545	0.995	2.44
Thallium	0.248 J	0.356 J	0.478 J
Vanadium	35.6	36.9	41.2
Zinc	175 J	462 J	2088 J
AVS/SEM (mg/Kg)			
Cadmium	0.16 U	4.93 J	2.98 J
Copper	2.16 J	96.8 J	112 J
Lead	3.52 J	681 J	550 J
Mercury	0.00353 J	0.00988 J	0.0111 J
Nickel	0.883 J	42.9 J	43.4 J
Zinc	2.67 U	1363 J	1624 J
Acid Volatile Sulfide	1.54 J	375 J	1435 J
AVS/SEM Ration (unitless)	1.27	1.54	4.62
Dioxins/Furans (ug/Kg)			
HCX	13.14244 J	135.6088 J	10.80543 J
TCX	R	R	R
2,3,7,8-TCDD	0.3279	3.19928	0.38141
1,2,3,7,8-PeCDD	0.00093 U	0.00446 J	0.00166 J
1,2,3,4,7,8-HxCDD	0.00167 J	0.00567	0.00563
1,2,3,6,7,8-HxCDD	0.00597	0.02498	0.01431
1,2,3,7,8,9-HxCDD	0.0054	0.02315	0.02403
1,2,3,4,6,7,8-HpCDD	0.11089	0.58377	0.24614
OCDD	0.70387	5.18587	1.19664
2,3,7,8-TCDF	0.00712 $	0.01985 J$	0.0122 J$
1,2,3,7,8-PeCDF	0.00099 U	0.00234 J	0.00261 J
2,3,4,7,8-PeCDF	0.00248 J	0.00389 J	0.00649
1,2,3,4,7,8-HxCDF	0.00575	0.01203	0.01366
1,2,3,6,7,8-HxCDF	0.00514	0.01062	0.0116
2,3,4,6,7,8-HxCDF	0.00351 J	0.00678	0.00995
1,2,3,7,8,9-HxCDF	0.00029 UJ	0.00045 UJ	0.00043 UJ
1,2,3,4,6,7,8-HpCDF	0.06782	0.19408	0.11788
1,2,3,4,7,8,9-HpCDF	0.00276 J	0.00777	0.00495 J
OCDF	0.07421	0.40583	0.16106
Total TCDD	0.3279 J	3.19928 J	0.38141 J
Total PeCDD	0.00669 J	0.00879 J	0.01845 J
Total HxCDD	0.04375 J	0.16101 J	0.1615 J

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Summary Statistics and Analytical Results for Aquatic Sediment - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	CMS-SD-4003-0000-01 7/12/2001	CMS-SD-4006-0000-01 7/12/2001	CMS-SD-4007-0000-01 7/12/2001
Total HpCDD	0.20089 J	1.64625 J	0.50089 J
Total TCDF	0.01859 J	0.06362 J	0.11104 J
Total PeCDF	0.09587 J	0.14466 J	0.27032 J
Total HxCDF	0.0995 J	0.18917 J	0.22962 J
Total HpCDF	0.12976 J	0.48152 J	0.25524 J
Toxicity Equivalency (Dioxins, Furans, HCX)	0.337	3.25	0.402
Grain Size (%)			
Percent Coarse Sand	6.38	7.31	0.89
Percent Fine Sand	35.85 J	30.4 J	16.52 J
Percent Gravel	6.88	2.93	3.42
Percent Medium Sand	23.57	26.04	8.29
Percent Clay	6.35	9.25	16
Percent Silt	20.97	24.07	54.88
Other (%)			
Total Organic Carbon	5.51	5.34	6.94
% Water	145	162	178
Solids, Percent			
Percent_moisture			

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* **106**(12):775-792.

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Summary Statistics and Analytical Results for Aquatic Sediment - Lyman Mill

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	LPX-SD-071601-A 7/16/2001 DUPLICATE	LPX-SD-071601-A 7/16/2001 REPLICATE	LPX-SD-4001-0000-01 7/12/2001
Semivolatile Organics (ug/Kg)										
1,1'-Biphenyl	4	4			35.45	55.87	45.28		30.48	
2,4,5-Trichlorophenol	0	1	2600	2600			1300.00		2600 U	
2,4-Dinitrophenol	0	1	2600	2600			1300.00		2600 UJ	
2-Methylnaphthalene	4	4			65.58	98.48	82.34		94.53	
2-Nitrophenol	0	1	500	500			250.00		510 U	
4-Methylphenol	0	1	500	500			250.00		510 U	
4-Nitrophenol	0	1	2600	2600			1300.00		2600 U	
Acenaphthene	4	4			53.86	327.21	146.95		293.65	
Acenaphthylene	4	4			219.55	428.56	312.50		390.92	
Anthracene	4	4			226.96	1124.2	529.51		860.07	
Benzaldehyde	4	4			190.76	336.17	276.13		459.4	
Benzo(a)anthracene	4	4			997.49	5427.47	2556.78		5528.5	
Benzo(a)pyrene	4	4			1094	6177.11	3044.36		7040.3	
Benzo(b)fluoranthene	4	4			1781.65	7481.75	3854.61		8635.11	
Benzo(g,h,i)perylene	4	4			1457.38	4851.76	2710.01		5594.06	
Benzo(k)fluoranthene	4	4			1539.33	7302.25	3631.54		8122.28	
bis(2-Ethylhexyl)phthalate	3	3			2000	7900	5200.00		510 UJ	
Butylbenzylphthalate	3	3			260	1200	853.33		510 UJ	
Carbazole	3	3			110	660	373.33		510 UJ	
Chrysene	4	4			1481.44	8939.7	4156.42		9697.45	
Dibenzo(a,h)anthracene	4	4			362.99	1069.4	609.88		1237.92	
Dibenzofuran	4	4			75.63	273.01	142.51		274.32	
Di-n-Butylphthalate	2	2			130	290	210.00		510 UJ	
Di-n-octylphthalate	2	2			310	400	355.00		510 UJ	
Fluoranthene	4	4			3044.3	16763	7365.45		18646.58	
Fluorene	4	4			135.39	670.84	310.30		608.8	
Indeno(1,2,3-cd)pyrene	4	4			1544.29	5253.09	2853.56		6063.25	
Naphthalene	4	4			82.92	185.14	128.13		182.54	
Pentachlorophenol	0	1	2600	2600			1300.00		2600 U	
Phenanthrene	4	4			1232.51	8378.61	3338.54		8182.61	
Phenol	0	1	500	500			250.00		510 UJ	
Pyrene	4	4			2741.18	13143.06	6071.85		14005.85	
Total PAH	4	4			18180.04	87930.09	41890.51		95489.22	
Pesticides/PCBs (ug/Kg)										
4,4'-DDD	8	8			6.42	50.19	33.87		22.13	27.61 J
4,4'-DDE	8	8			4.96	42.93	27.15		24.54	20.84
4,4'-DDT	7	8	2.39	2.39	5.96	12.99	7.61		10.92	2.39 U
Aldrin	0	8	1.4	3.02			1.18		2.01 U	2.39 U

Summary Statistics and Analytical Results for Aquatic Sediment - Lyman Mill

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	LPX-SD-071601-A 7/16/2001 DUPLICATE	LPX-SD-071601-A 7/16/2001 REPLICATE	LPX-SD-4001-0000-01 7/12/2001
alpha-BHC	0	8	1.4	3.02			1.18		2.01 U	2.39 U
alpha-Chlordane	8	8			21.08	140.75	66.20		107.95	24.41
Aroclor, Total	8	8			162.42	2237	1012.08		311.41	1035.67
Aroclor-1016	0	8	17.48	37.73			14.77		25.08 U	29.86 U
Aroclor-1221	0	8	17.48	37.73			14.77		25.08 U	29.86 U
Aroclor-1232	0	8	17.48	37.73			14.77		25.08 U	29.86 U
Aroclor-1242	0	8	17.48	37.73			14.77		25.08 U	29.86 U
Aroclor-1248	0	8	17.48	37.73			14.77		25.08 U	29.86 U
Aroclor-1254	8	8			124.51	2047.82	883.34		276.82	873.88
Aroclor-1260	0	8	17.48	37.73			14.77		25.08 U	29.86 U
Aroclor-1268	8	8			36.99	313.79	128.74		34.59	161.79
beta-BHC	0	8	1.4	3.02			1.18		2.01 U	2.39 U
delta-BHC	0	8	1.4	3.02			1.18		2.01 U	2.39 U
Dieldrin	8	8			6.1	10.02	7.12		6.12	7.07
Endosulfan I	0	8	1.4	3.02			1.18		2.01 U	2.39 U
Endosulfan II	0	8	1.4	3.02			1.18		2.01 U	2.39 U
Endosulfan Sulfate	1	8	1.77	3.02	10.55	10.55	2.41		2.01 U	2.39 U
Endrin	0	8	1.4	3.02			1.18		2.01 U	2.39 UJ
Endrin Aldehyde	0	8	1.4	3.02			1.18		2.01 U	2.39 UJ
Endrin Ketone	0	8	1.4	3.02			1.18		2.01 U	2.39 UJ
gamma-BHC	0	8	1.4	3.02			1.18		2.01 U	2.39 U
gamma-Chlordane	3	8	1.4	2.69	51.56	69.88	24.01		2.01 U	2.39 U
Heptachlor	0	8	1.4	3.02			1.18		0.81 J	2.39 UJ
Heptachlor Epoxide	0	8	1.4	3.02			1.18		2.01 U	2.39 UJ
Methoxychlor	0	8	1.4	3.02			1.18		2.01 U	2.39 UJ
Technical Chlordane	8	8			701.21	2212.73	1251.38		1475.63	701.21
Toxaphene	0	8	34.96	75.46			29.54		50.17 U	59.73 U
Inorganics (mg/Kg)										
Aluminum	7	7			6949	27773	19145		16846 J	15413 J
Antimony	2	7	0.0818	0.334	0.0443	0.969	0.213		0.171 U	0.0443 J
Arsenic	6	7	2	2	2.62	13.2	5.38		3.75 J	2 U
Barium	7	7			86.3	380	229		191 J	240 J
Beryllium	7	7			0.793	4.36	2.73		1.5	2.81
Cadmium	7	7			0.415	4.65	2.36		1.23 J	0.415 J
Chromium	7	7			43.2	259	169		91.3 J	166 J
Cobalt	7	7			1.5	26.6	12.1		8.26	1.5
Copper	7	7			21.7	244	97.5		125	42.3 J
Iron	7	7			12266	41293	27566		27243	23108
Lead	7	7			39	613	351		294 J	39 J

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Summary Statistics and Analytical Results for Aquatic Sediment - Lyman Mill

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	LPX-SD-071601-A 7/16/2001 DUPLICATE	LPX-SD-071601-A 7/16/2001 REPLICATE	LPX-SD-4001-0000-01 7/12/2001
Manganese	7	7			276	1655	807		790 J	714 J
Mercury	7	7			0.00743	0.946	0.525		0.00624 J	0.611
Mercury (methyl)	7	7			0.000259	0.00959	0.00207		0.000573 J	0.00211 J
Molybdenum	7	7			1.6	13.4	6.45		3.94	1.6 J
Nickel	7	7			2.14	62.2	27.4		33.9	23.5 J
Selenium	4	7	0.456	0.543	0.773	1.57	0.691		0.533 U	0.773 J
Silver	7	7			0.364	4.31	2.25		0.81	1.84
Thallium	7	7			0.0543	0.883	0.479		0.434 J	0.0543 J
Vanadium	7	7			41.1	91.7	55.8		46.6	42.2
Zinc	7	7			172	1662	739		480 J	570 J
AVS/SEM (mg/Kg)										
Cadmium	6	7	0.16	0.16	0.0958	3.16	1.59		1.23 J	1.5 J
Copper	7	7			21.7	93.1	58.6		56.2 J	42.3 J
Lead	7	7			73.4	587	344		287 J	305 J
Mercury	7	7			0.00743	0.0265	0.0163		0.00624 J	0.0163 J
Nickel	7	7			2.14	62.2	25.5		16.5 J	23.5 J
Zinc	5	7	45.5	308	393	1287	565		398 J	515 J
Acid Volatile Sulfide	7	7			6.45	363	246		390 J	363 J
AVS/SEM Ration (unitless)	7	7			0.267	4.04	2.66		4.47	4.04
Dioxins/Furans (ug/Kg)										
HCX	4	4			3.74363	117.6491	53.56475		3.93906 J	71.04339 J
TCX	0	0							R	R
2,3,7,8-TCDD	4	4			0.21621	4.55677	1.89935		0.47854 J	4.55677
1,2,3,7,8-PeCDD	4	4			0.00203	0.01035	0.00570		0.01023	0.00644 J
1,2,3,4,7,8-HxCDD	4	4			0.003	0.01382	0.00768		0.02153	0.00791 J
1,2,3,6,7,8-HxCDD	4	4			0.00928	0.06823	0.03133		0.07461	0.02889
1,2,3,7,8,9-HxCDD	4	4			0.00831	0.05082	0.02600		0.05444	0.02682
1,2,3,4,6,7,8-HpCDD	4	4			0.19258	1.49333	0.68001		1.56727	0.62672
OCDD	4	4			1.3479	10.75211	4.76682		11.09228	4.28496
2,3,7,8-TCDF	4	4			0.0052	0.01791	0.01059		0.00537 J$	0.01791 $
1,2,3,7,8-PeCDF	4	4			0.00188	0.00416	0.00341		0.00475 J	0.0037 J
2,3,4,7,8-PeCDF	3	4	0.00491	0.00491	0.00285	0.00824	0.00471		0.00578 J	0.00824 J
1,2,3,4,7,8-HxCDF	4	4			0.00628	0.02085	0.01468		0.0222	0.02085 J
1,2,3,6,7,8-HxCDF	4	4			0.00469	0.01911	0.01287		0.02008	0.01811 J
2,3,4,6,7,8-HxCDF	4	4			0.00356	0.01372	0.00906		0.01462	0.01244 J
1,2,3,7,8,9-HxCDF	0	4	0.00017	0.00904			0.00173		0.00187 U	0.00904 UJ
1,2,3,4,6,7,8-HpCDF	4	4			0.07064	0.33384	0.18816		0.31337	0.22562
1,2,3,4,7,8,9-HpCDF	4	4			0.00335	0.01752	0.00948		0.01786	0.01054 J
OCDF	4	4			0.12958	0.89434	0.37801		0.56845	0.28536

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	LPX-SD-071601-A 7/16/2001 DUPLICATE	LPX-SD-071601-A 7/16/2001 REPLICATE	LPX-SD-4001-0000-01 7/12/2001
Total TCDD	4	4			0.21621	4.55677	1.89935		0.47854 J	4.55677 J
Total PeCDD	4	4			0.01073	0.02702	0.01722		0.03408 J	0.02702 J
Total HxCDD	4	4			0.06303	0.42384	0.20100		0.38085 J	0.1944 J
Total HpCDD	4	4			0.34517	3.34463	1.39104		3.56058 J	1.13466 J
Total TCDF	4	4			0.01049	0.13179	0.06805		0.02579 J	0.13179 J
Total PeCDF	4	4			0.05185	0.31268	0.17192		0.14274 J	0.31268 J
Total HxCDF	4	4			0.08644	0.33346	0.23206		0.33134 J	0.32985 J
Total HpCDF	4	4			0.15268	0.71131	0.39810		0.76654 J	0.47065 J
Toxicity Equivalency (Dioxins, Furans, HCX)	4	4			0.266	4.6	1.94		0.534	4.6
PCB Congeners (ug/Kg)										
2-Monochlorobiphenyl (1)	2	2			1.06537	1.06833	1.06685		0.10076	1.06537
4-Chlorobiphenyl (3)	2	2			2.09272	2.37114	2.23193		0.16239	2.37114
2,2'-Dichlorobiphenyl (4)	2	2			1.13731	2.13337	1.63534		0.26047	2.13337
2,3-Dichlorobiphenyl (5)	1	1			0.25153	0.25153	0.25153		0.0136 U	0.25153
2,3'-Dichlorobiphenyl (6)	2	2			0.23521	1.45726	0.84624		0.22932 J	0.23521 J
2,4-Dichlorobiphenyl (7)	2	2			0.2409	0.5708	0.40585		0.06841	0.5708
2,4'-Dichlorobiphenyl (8)	2	2			7.31168	11.11109	9.21139		0.88118	11.11109
2,5-Dichlorobiphenyl (9)	2	2			0.37249	0.72894	0.55072		0.07979	0.72894
2,6-Dichlorobiphenyl (10)	2	2			0.0765	0.12326	0.09988		0.01405	0.12326
3,4-Dichlorobiphenyl (12)	2	2			1.14512	2.2769	1.71101		0.20996 J	2.2769 J
2,2',3'-Trichlorobiphenyl (16)	2	2			2.70018	6.12532	4.41275		1.04901	6.12532
2,2',4-Trichlorobiphenyl (17)	2	2			2.65899	6.35755	4.50827		1.01837	6.35755
2,2',5-Trichlorobiphenyl (18)	2	2			2.59508	4.57294	3.58401		1.07074 J	4.57294 J
2,2',6-Trichlorobiphenyl (19)	2	2			0.57021	1.26862	0.91942		0.2226	1.26862
2,3,3'-Trichlorobiphenyl (20)	2	2			13.96424	37.9726	25.96842		8.16604 J	37.9726 J
2,3,4'-Trichlorobiphenyl (22)	2	2			4.40417	9.82637	7.11527		2.05018	9.82637
2,3,6-Trichlorobiphenyl (24)	2	2			1.70938	3.89796	2.80367		0.26122 J	3.89796 J
2,3',4-Trichlorobiphenyl (25)	2	2			0.67053	1.87208	1.27131		0.33958	1.87208
2,3',5-Trichlorobiphenyl (26)	2	2			1.27564	4.24112	2.75838		0.91374 J	4.24112 J
2,4',5-Trichlorobiphenyl (31)	2	2			6.85269	18.04423	12.44846		2.82084	18.04423
2,4',6-Trichlorobiphenyl (32)	2	2			1.81862	3.10083	2.45973		0.34309	3.10083
2,2',3,3'-Tetrachlorobiphenyl (40)	2	2			19.76139	20.13863	19.94901		2.46201 J	19.76139 J
2,2',3,4'-Tetrachlorobiphenyl (42)	2	2			5.24593	9.60462	7.42528		1.31298 J	9.60462 J
2,2',3,5-Tetrachlorobiphenyl (43)	2	2			0.84786	24.68115	12.76451		8.20968 J	0.84786 J
2,2',3,5'-Tetrachlorobiphenyl (44)	2	2			18.1128	33.91584	26.01432		4.9986 J	33.91584 J
2,2',3,6-Tetrachlorobiphenyl (45)	2	2			2.19706	4.44502	3.32104		0.80228 J	4.44502 J
2,2',3,6'-Tetrachlorobiphenyl (46)	2	2			1.07179	1.7393	1.40555		0.26854 J	1.7393 J
2,2',4,5-Tetrachlorobiphenyl (48)	2	2			1.97819	4.95509	3.46664		0.89118	4.95509
2,2',4,5'-Tetrachlorobiphenyl (49)	2	2			9.4198	20.13452	14.77716		2.68966 J	20.13452 J

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	LPX-SD-071601-A 7/16/2001 DUPLICATE	LPX-SD-071601-A 7/16/2001 REPLICATE	LPX-SD-4001-0000-01 7/12/2001
2,2',4,6-Tetrachlorobiphenyl (50)	2	2			2.87314	4.113	3.49307		0.63926 J	4.113 J
2,3,3',4'-Tetrachlorobiphenyl (56)	2	2			9.64962	12.99697	11.32330		1.42742 J	12.99697 J
2,3,3',6-Tetrachlorobiphenyl (59)	2	2			1.22451	2.63601	1.93026		0.41736 J	2.63601 J
2,3,4,4'-Tetrachlorobiphenyl (60)	2	2			0.41477	3.69713	2.05595		0.59225 J	3.69713 J
2,3,4,5-Tetrachlorobiphenyl (61)	2	2			27.0166	53.782	40.39930		9.6916 J	53.782 J
2,3,4',5-Tetrachlorobiphenyl (63)	2	2			0.28597	0.72976	0.50787		0.13595 U	0.72976
2,3,4',6-Tetrachlorobiphenyl (64)	2	2			6.86294	12.59884	9.73089		1.81861 J	12.59884 J
2,3',4,4'-Tetrachlorobiphenyl (66)	2	2			24.80943	37.84202	31.32573		4.24185 J	37.84202 J
3,3',4,4'-Tetrachlorobiphenyl (77)	2	2			1.96417	3.62277	2.79347		0.62836	3.62277
3,4,4',5-Tetrachlorobiphenyl (81)	0	1	0.16678	0.16678			0.08339		0.13595 U	0.16678 U
2,2',3,3',4-Pentachlorobiphenyl (82)	2	2			8.52737	13.63813	11.08275		1.46644 J	13.63813 J
2,2',3,3',5-Pentachlorobiphenyl (83)	2	2			17.5203	38.59824	28.05927		4.79736 J	38.59824 J
2,2',3,3',6-Pentachlorobiphenyl (84)	2	2			20.41631	25.48487	22.95059		2.38822 J	25.48487 J
2,2',3,4,4'-Pentachlorobiphenyl (85)	2	2			7.2477	12.87399	10.06085		1.32369 J	12.87399 J
2,2',3,4,5-Pentachlorobiphenyl (86)	2	2			40.31694	67.07964	53.69829		21.34236 J	67.07964 J
2,2',3,4,6-Pentachlorobiphenyl (88)	2	2			7.98848	11.01322	9.50085		1.07104 J	11.01322 J
2,2',3,4,6'-Pentachlorobiphenyl (89)	0	1	0.16678	0.16678			0.08339		0.03372 J	0.16678 U
2,2',3,4',5-Pentachlorobiphenyl (90)	2	2			39.0726	70.68006	54.87633		9.50112 J	70.68006 J
2,2',3,5,5'-Pentachlorobiphenyl (92)	2	2			7.86897	14.15006	11.00952		1.63366 J	14.15006 J
2,2',3,5,6-Pentachlorobiphenyl (93)	2	2			47.2996	65.5839	56.44175		6.7386 J	65.5839 J
2,3,3',4,4'-Pentachlorobiphenyl (105)	2	2			10.59317	21.78889	16.19103		3.55046	21.78889
2,3,3',4,5-Pentachlorobiphenyl (106)	2	2			3.34224	7.41975	5.38100		0.99488 J	7.41975 J
2,3,3',4',5'-Pentachlorobiphenyl (108)	2	2			1.29416	2.9163	2.10523		0.37684 J	2.9163 J
2,3,3',4',6-Pentachlorobiphenyl (110)	2	2			76.04744	111.89802	93.97273		13.58018 J	111.89802 J
2,3,4,4',5-Pentachlorobiphenyl (114)	1	1			1.13496	1.13496	1.13496		0.1884 J	1.13496 J
2,3',4,4',5-Pentachlorobiphenyl (118)	2	2			42.4831	89.28019	65.88165		11.25687	89.28019
3,3',4,4',5-Pentachlorobiphenyl (126)	1	2	0.33357	0.33357	0.57322	0.57322	0.37000		0.16164 J	0.33357 UJ
2,2',3,3',4,4'-Hexachlorobiphenyl (128)	2	2			10.38992	23.35914	16.87453		3.40244 J	23.35914 J
2,2',3,3',4,5-Hexachlorobiphenyl (129)	2	2			43.09732	108.33212	75.71472		18.34308 J	108.33212 J
2,2',3,3',4,5'-Hexachlorobiphenyl (130)	2	2			3.18616	8.76006	5.97311		1.45747	8.76006
2,2',3,3',4,6-Hexachlorobiphenyl (131)	2	2			0.67115	1.74449	1.20782		0.26456 J	1.74449 J
2,2',3,3',4,6'-Hexachlorobiphenyl (132)	1	2	0.16678	0.16678	23.57328	23.57328	11.82834		6.85091	0.16678 U
2,2',3,3',5,6-Hexachlorobiphenyl (134)	2	2			3.6215	7.75746	5.68948		1.04614 J	7.75746 J
2,2',3,3',5,6'-Hexachlorobiphenyl (135)	2	2			11.18301	28.20189	19.69245		4.57995 J	28.20189 J
2,2',3,3',6,6'-Hexachlorobiphenyl (136)	2	2			8.82295	16.38733	12.60514		2.16157 J	16.38733 J
2,2',3,4,4',5-Hexachlorobiphenyl (137)	2	2			4.897	13.71046	9.30373		2.17404 J	13.71046 J
2,2',3,4,5,5'-Hexachlorobiphenyl (141)	2	2			3.9651	13.18855	8.57683		2.65295	13.18855
2,2',3,4,5',6-Hexachlorobiphenyl (144)	0	1	0.16678	0.16678			0.08339		0.13595 U	0.16678 U
2,2',3,4',5,5'-Hexachlorobiphenyl (146)	2	2			1.76498	6.30846	4.03672		1.5541 J	6.30846 J

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	LPX-SD-071601-A 7/16/2001 DUPLICATE	LPX-SD-071601-A 7/16/2001 REPLICATE	LPX-SD-4001-0000-01 7/12/2001
2,2',3,4',5,6-Hexachlorobiphenyl (147)	2	2			29.26736	68.78748	49.02742		10.21958 J	68.78748 J
2,2',4,4',5,5'-Hexachlorobiphenyl (153)	2	2			10.74772	41.47824	26.11298		10.11832 J	41.47824 J
2,3,3',4,4',5-Hexachlorobiphenyl (156)	2	2			4.04212	9.77314	6.90763		1.51344 J	9.77314 J
2,3,3',4,4',6-Hexachlorobiphenyl (158)	1	2	0.06671	0.06671	3.06042	3.06042	1.54689		1.68821	0.06671 U
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	2	2			1.73831	3.69398	2.71615		0.53531 J	3.69398 J
3,3',4,4',5,5'-Hexachlorobiphenyl (169)	0	1	0.16678	0.16678			0.08339		0.13595 U	0.16678 U
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	2	2			10.83667	16.2631	13.54989		2.47576 J	16.2631 J
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)	2	2			3.28862	5.12588	4.20725		0.77126 J	5.12588 J
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)	2	2			0.81303	1.27293	1.04298		0.33666	1.27293
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)	2	2			14.48902	16.21344	15.35123		1.16831 J	16.21344 J
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)	1	1			0.40333	0.40333	0.40333		0.07899 J	0.40333
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)	2	2			1.285	1.9511	1.61805		0.31478 J	1.9511 J
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)	2	2			5.35696	7.45056	6.40376		1.32089 J	7.45056 J
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)	2	2			1.11983	2.16001	1.63992		0.46712 J	2.16001 J
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)	2	2			6.71476	13.52562	10.12019		3.74606 J	13.52562 J
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)	0	1	0.33357	0.33357			0.16679		0.2719 U	0.33357 U
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)	2	2			2.20026	4.82792	3.51409		1.01778	4.82792
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)	0	1	0.33357	0.33357			0.16679		0.0041 J	0.33357 U
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)	2	2			0.36471	0.81125	0.58798		0.2719 U	0.81125
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	2	2			4.83656	8.82739	6.83198		2.43478 J	8.82739 J
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	2	2			0.19956	0.41201	0.30579		0.08653 J	0.41201
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)	2	2			1.21934	2.28907	1.75421		0.43213 J	2.28907 J
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	2	2			0.16583	0.37073	0.26828		0.07078 J	0.37073
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	2	2			1.96878	3.77296	2.87087		1.08709 J	3.77296 J
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	2	2			1.27861	1.58619	1.43240		0.38199 J	1.58619 J
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)	2	2			1.68103	2.88612	2.28358		0.63264 J	2.88612 J
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)	2	2			0.06091	0.06432	0.06262		0.01712 J	0.06432 J
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)	2	2			7.4225	15.07826	11.25038		2.63228 J	15.07826 J
2,2',3,3',4,5,5',6'-Octachlorobiphenyl (199)	2	2			0.44989	1.07047	0.76018		0.1814 J	1.07047
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)	2	2			0.58151	0.72161	0.65156		0.20741 J	0.58151 J
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)	2	2			1.92861	4.95609	3.44235		1.02053	4.95609
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	2	2			0.10597	0.22051	0.16324		0.04942 J	0.22051 J
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	2	2			10.15311	22.96942	16.56127		3.14133	22.96942
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	2	2			0.60563	1.70065	1.15314		0.47757 J	1.70065
Decachlorobiphenyl (209)	2	2			11.8549	28.4986	20.17675		3.15737 J	28.4986 J
PCB Congeners, Total	2	2			812.94943	1415.88185	1114.41564		236.49017 J	1415.88185 J
Toxicity Equivalency (PCB)	2	2			0.017	0.0649	0.0410		0.0186	0.017
Grain Size (%)										
Percent Coarse Sand	9	9			0	1.78	0.2	0	0	0.02

Table A-6
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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	LPX-SD-071601-A 7/16/2001 DUPLICATE	LPX-SD-071601-A 7/16/2001 REPLICATE	LPX-SD-4001-0000-01 7/12/2001
Percent Fine Sand	9	9			0.16	45.41	11.3	4.32	5.59 J	6.71 J
Percent Gravel	9	9			0	1.65	0.183	0	0	0
Percent Medium Sand	9	9			0	16.31	3.04	0.65	0.71	2.17
Percent Clay	9	9			5.5	31.35	19.6	6.5	8.65 J	10
Percent Silt	9	9			29.35	81.09	65.7	88.53	85.05	81.09
Other (%)										
Total Organic Carbon	9	9			7.85	16.96	10.4	8.49	8.93	10.03
% Water	7	7			128	635	344		79	292
Solids, Percent	3	3			14.3	32.8	22.0		32.3	
Percent_moisture	3	3			67.2	85.7	78.0		67.7	

NOTES:
SQL - Sample Quantitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* **106**(12):775-792.

Table A-6
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PARAMETER	LPX-SD-4002-0000-01 7/12/2001	LPX-SD-4004-0000-01 7/12/2001 DUPLICATE	LPX-SD-4004-0000-01 7/12/2001	LPX-SD-4011-0000-01 7/10/2001 DUPLICATE	LPX-SD-4011-0000-01 7/10/2001	LPX-SD-4012-0000-01 7/10/2001	LPX-SD-4013-0000-01 7/10/2001 DUPLICATE	LPX-SD-4013-0000-01 7/10/2001
Semivolatile Organics (ug/Kg)								
1,1'-Biphenyl				46.19	55.87 J	35.45		43.59 J
2,4,5-Trichlorophenol					R	R		2600 U
2,4-Dinitrophenol					R	R		2600 UJ
2-Methylnaphthalene				75.19	90.09 J	98.48		65.58 J
2-Nitrophenol					R	R		500 U
4-Methylphenol					R	R		500 U
4-Nitrophenol					R	R		2600 UJ
Acenaphthene				92.11	114.63 J	327.21		53.86 J
Acenaphthylene				266.1	335.8 J	428.56		219.55 J
Anthracene				348.93	417.95 J	1124.2		226.96 J
Benzaldehyde				298.39	336.17 J	279.21		190.76 J
Benzo(a)anthracene				1690.92 D	2111.23 J	5427.47		997.49 J
Benzo(a)pyrene				2249.5 D	2656.83 J	6177.11		1094 J
Benzo(b)fluoranthene				2838.64 D	3316.38 J	7481.75		1781.65 J
Benzo(g,h,i)perylene				2131.29 D	2399.6 J	4851.76		1457.38 J
Benzo(k)fluoranthene				2489 D	3195.57 J	7302.25		1539.33 J
bis(2-Ethylhexyl)phthalate					2000 J	7900 J		5700 J
Butylbenzylphthalate					260 J	1200 J		1100 J
Carbazole					110 J	660 J		350 J
Chrysene				2759.37 D	3445.17 J	8939.7		1481.44 J
Dibenzo(a,h)anthracene				484.94 D	522.2 J	1069.4		362.99 J
Dibenzofuran				99.08	122.33 J	273.01		75.63 J
Di-n-Butylphthalate					R	290 J		130 J
Di-n-octylphthalate					R	400 J		310 J
Fluoranthene				4234.69 D	5419.8 J	16763		3044.3 J
Fluorene				192.42	242.55 J	670.84		135.39 J
Indeno(1,2,3-cd)pyrene				2186.89 D	2429.98 J	5253.09		1544.29 J
Naphthalene				112.31	132.16 J	185.14		82.92 J
Pentachlorophenol					R	R		2600 U
Phenanthrene				1611.47	2131.56 J	8378.61		1232.51 J
Phenol					R	R		500 U
Pyrene				3700.41 D	4702.76 J	13143.06		2741.18 J
Total PAH				27609.45	33842.47 J	87930.09		18180.04 J
Pesticides/PCBs (ug/Kg)								
4,4'-DDD	35.02 J		48.76	32.74 J	35.89 J	34.32 J		50.19 J
4,4'-DDE	17.71		28.49	38.42 J	42.93	27.14		36.72
4,4'-DDT	12.99		8.03	6.51 J	9.08 J	7.64 J		5.96 J
Aldrin	1.77 U		2.69 U	2.85 UJ	2.89 U	1.89 U		3.02 U

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alpha-BHC	1.77 UJ		2.69 UJ	2.85 UJ	2.89 UJ	1.89 UJ		3.02 UJ
alpha-Chlordane	114.24		140.75	41.6 J	42.81	112.65		32.06 J
Aroclor, Total	162.42 J		359.4	2237	2212.05	296.78		1601.4
Aroclor-1016	22.17 UJ		33.65 UJ	35.68 UJ	36.1 UJ	23.66 UJ		37.73 UJ
Aroclor-1221	22.17 UJ		33.65 UJ	35.68 UJ	36.1 UJ	23.66 UJ		37.73 UJ
Aroclor-1232	22.17 UJ		33.65 UJ	35.68 UJ	36.1 UJ	23.66 UJ		37.73 UJ
Aroclor-1242	22.17 UJ		33.65 UJ	35.68 UJ	36.1 UJ	23.66 UJ		37.73 UJ
Aroclor-1248	22.17 UJ		33.65 UJ	35.68 UJ	36.1 UJ	23.66 UJ		37.73 UJ
Aroclor-1254	124.51		312.31	2047.82	2022.77	242.9		1287.61
Aroclor-1260	22.17 UJ		33.65 UJ	35.68 UJ	36.1 UJ	23.66 UJ		37.73 UJ
Aroclor-1268	37.91		47.09	189.19	189.28	53.89		313.79 J
beta-BHC	1.77 UJ		2.69 UJ	2.85 UJ	2.89 UJ	1.89 UJ		3.02 UJ
delta-BHC	1.77 UJ		2.69 UJ	2.85 UJ	2.89 UJ	1.89 UJ		3.02 UJ
Dieldrin	6.18		7.87	6.67 J	6.79 J	6.1 J		6.26 J
Endosulfan I	1.77 UJ		2.69 UJ	2.85 UJ	2.89 UJ	1.89 UJ		3.02 UJ
Endosulfan II	1.77 UJ		2.69 UJ	2.85 UJ	2.89 UJ	1.89 UJ		3.02 UJ
Endosulfan Sulfate	1.77 UJ		2.69 UJ	2.85 UJ	2.89 UJ	1.89 UJ		3.02 UJ
Endrin	1.77 UJ		2.69 UJ	2.85 UJ	2.89 UJ	1.89 UJ		3.02 UJ
Endrin Aldehyde	1.77 UJ		2.69 UJ	2.85 UJ	2.89 UJ	1.89 UJ		3.02 UJ
Endrin Ketone	1.77 UJ		2.69 UJ	2.85 UJ	2.89 UJ	1.89 UJ		3.02 UJ
gamma-BHC	1.77 UJ		2.69 UJ	2.85 UJ	2.89 UJ	1.89 UJ		3.02 UJ
gamma-Chlordane	1.77 UJ		2.69 UJ	65.53 J	69.88	1.89 UJ		51.56 J
Heptachlor	1.77 UJ		2.69 UJ	2.85 UJ	2.89 UJ	1.89 UJ		3.02 UJ
Heptachlor Epoxide	1.77 UJ		2.69 UJ	2.85 UJ	2.89 UJ	1.89 UJ		3.02 UJ
Methoxychlor	1.77 UJ		2.69 UJ	2.85 UJ	2.89 UJ	1.89 UJ		3.02 UJ
Technical Chlordane	1617.73		2212.73	955.33 J	1029.15	1781.67		865.08
Toxaphene	44.35 UJ		67.29 UJ	71.35 UJ	72.19 UJ	47.32 UJ		75.46 UJ
Inorganics (mg/Kg)								
Aluminum	14793 J		24263 J		27773 J	25502 J		19322 J
Antimony	0.2 UJ		0.334 UJ		0.135 UJ	0.969 J		0.0818 UJ
Arsenic	3.59 J		6.93 J		6.13 J	13.2 J		4.2
Barium	170 J		380 J		373 J	162 J		191 J
Beryllium	1.25		4.31		4.13	4.36		1.47
Cadmium	2.3		3.15 J		4.65	3.16 J		1.95 J
Chromium	95.5 J		214 J		259 J	257 J		151 J
Cobalt	7.71		17.7		17.2	26.6		9.46
Copper	47.5 J		93.1 J		244	178		55.6 J
Iron	24489		32713		31842	41293		27252
Lead	260 J		500 J		613 J	567 J		382 J

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Manganese	633 J		1655 J		1321 J	276 J		648 J
Mercury	0.00743 J		0.946		0.804 J	0.739 J		0.286 J
Mercury (methyl)	0.00114 J		0.000387 J		0.000259 J	0.000579 J		0.000454 J
Molybdenum	2.51		13.4		10.9	8.47		2.83
Nickel	28.2		42.4 J		62.2 J	14.9 J		18.2 J
Selenium	0.543 U		0.934 J		0.815 J	1.57 J		0.491 U
Silver	1.06		2.94		4.31	4.15		1.06
Thallium	0.405 J		0.679 J		0.712 J	0.883 J		0.448 J
Vanadium	41.1		60.1		62	91.7		51
Zinc	449 J		923 J		917 J	1662 J		482 J
AVS/SEM (mg/Kg)								
Cadmium	0.0958 J		3.15 J		1.19 J	3.16 J		1.95 J
Copper	47.5 J		93.1 J		91.7 J	58.5 J		55.6 J
Lead	229 J		394 J		587 J	492 J		328 J
Mercury	0.00743 J		0.0184 J		0.0265 J	0.0205 J		0.00995 J
Nickel	15.5 J		42.4 J		62.2 J	14.9 J		18.2 J
Zinc	308 U		794 J		786 J	1287 J		393 J
Acid Volatile Sulfide	276 J		305 J		328 J	118 J		326 J
AVS/SEM Ration (unitless)	3.59		3.64		2.77	1.21		3.07
Dioxins/Furans (ug/Kg)								
HCX	3.74363 J		117.6491 J					
TCX	R		R					
2,3,7,8-TCDD	0.21621 J		2.07267 J					
1,2,3,7,8-PeCDD	0.01035		0.00397 J					
1,2,3,4,7,8-HxCDD	0.01382		0.00599 J					
1,2,3,6,7,8-HxCDD	0.06823		0.01893 J					
1,2,3,7,8,9-HxCDD	0.05082		0.01805 J					
1,2,3,4,6,7,8-HpCDD	1.49333		0.4074 J					
OCDD	10.75211 J		2.68229 J					
2,3,7,8-TCDF	0.00626 JS		0.01298 J					
1,2,3,7,8-PeCDF	0.00416 J		0.00389 J					
2,3,4,7,8-PeCDF	0.00491 U		0.00531 J					
1,2,3,4,7,8-HxCDF	0.01953		0.01206 J					
1,2,3,6,7,8-HxCDF	0.01911		0.00958 J					
2,3,4,6,7,8-HxCDF	0.01372		0.00653 J					
1,2,3,7,8,9-HxCDF	0.00423 U		0.00042 UJ					
1,2,3,4,6,7,8-HpCDF	0.33384		0.12252 J					
1,2,3,4,7,8,9-HpCDF	0.01752 J		0.00649 J					
OCDF	0.89434 J		0.20275 J					

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Total TCDD	0.21621 J		2.07267 J					
Total PeCDD	0.01239 J		0.01874 J					
Total HxCDD	0.42384 J		0.12271 J					
Total HpCDD	3.34463 J		0.73969 J					
Total TCDF	0.01049 J		0.09569 J					
Total PeCDF	0.14477 J		0.17836 J					
Total HxCDF	0.33346 J		0.17847 J					
Total HpCDF	0.71131 J		0.25775 J					
Toxicity Equivalency (Dioxins, Furans, HCX)	0.266		2.12					
PCB Congeners (ug/Kg)								
2-Monochlorobiphenyl (1)			1.06833 J					
4-Chlorobiphenyl (3)			2.09272 J					
2,2'-Dichlorobiphenyl (4)			1.13731 J					
2,3-Dichlorobiphenyl (5)			R					
2,3'-Dichlorobiphenyl (6)			1.45726 J					
2,4-Dichlorobiphenyl (7)			0.2409 J					
2,4'-Dichlorobiphenyl (8)			7.31168 J					
2,5-Dichlorobiphenyl (9)			0.37249 J					
2,6-Dichlorobiphenyl (10)			0.0765 J					
3,4-Dichlorobiphenyl (12)			1.14512 J					
2,2',3'-Trichlorobiphenyl (16)			2.70018 J					
2,2',4-Trichlorobiphenyl (17)			2.65899 J					
2,2',5-Trichlorobiphenyl (18)			2.59508 J					
2,2',6-Trichlorobiphenyl (19)			0.57021 J					
2,3,3'-Trichlorobiphenyl (20)			13.96424 J					
2,3,4'-Trichlorobiphenyl (22)			4.40417 J					
2,3,6-Trichlorobiphenyl (24)			1.70938 J					
2,3',4-Trichlorobiphenyl (25)			0.67053 J					
2,3',5-Trichlorobiphenyl (26)			1.27564 J					
2,4',5-Trichlorobiphenyl (31)			6.85269 J					
2,4',6-Trichlorobiphenyl (32)			1.81862 J					
2,2',3,3'-Tetrachlorobiphenyl (40)			20.13663 J					
2,2',3,4'-Tetrachlorobiphenyl (42)			5.24593 J					
2,2',3,5-Tetrachlorobiphenyl (43)			24.68115 J					
2,2',3,5'-Tetrachlorobiphenyl (44)			18.1128 J					
2,2',3,6-Tetrachlorobiphenyl (45)			2.19706 J					
2,2',3,6'-Tetrachlorobiphenyl (46)			1.07179 J					
2,2',4,5-Tetrachlorobiphenyl (48)			1.97819 J					
2,2',4,5'-Tetrachlorobiphenyl (49)			9.4198 J					

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2,2',4,6-Tetrachlorobiphenyl (50)			2.87314 J					
2,3,3',4'-Tetrachlorobiphenyl (56)			9.64962 J					
2,3,3',6-Tetrachlorobiphenyl (59)			1.22451 J					
2,3,4,4'-Tetrachlorobiphenyl (60)			0.41477 J					
2,3,4,5-Tetrachlorobiphenyl (61)			27.0166 J					
2,3,4',5-Tetrachlorobiphenyl (63)			0.28597 J					
2,3,4',6-Tetrachlorobiphenyl (64)			6.86294 J					
2,3',4,4'-Tetrachlorobiphenyl (66)			24.80943 J					
3,3',4,4'-Tetrachlorobiphenyl (77)			1.96417 J					
3,4,4',5-Tetrachlorobiphenyl (81)			R					
2,2',3,3',4-Pentachlorobiphenyl (82)			8.52737 J					
2,2',3,3',5-Pentachlorobiphenyl (83)			17.5203 J					
2,2',3,3',6-Pentachlorobiphenyl (84)			20.41631 J					
2,2',3,4,4'-Pentachlorobiphenyl (85)			7.2477 J					
2,2',3,4,5-Pentachlorobiphenyl (86)			40.31694 J					
2,2',3,4,6-Pentachlorobiphenyl (88)			7.98848 J					
2,2',3,4,6'-Pentachlorobiphenyl (89)			R					
2,2',3,4',5-Pentachlorobiphenyl (90)			39.0726 J					
2,2',3,5,5'-Pentachlorobiphenyl (92)			7.86897 J					
2,2',3,5,6-Pentachlorobiphenyl (93)			47.2996 J					
2,3,3',4,4'-Pentachlorobiphenyl (105)			10.59317 J					
2,3,3',4,5-Pentachlorobiphenyl (106)			3.34224 J					
2,3,3',4',5'-Pentachlorobiphenyl (108)			1.29416 J					
2,3,3',4',6-Pentachlorobiphenyl (110)			76.04744 J					
2,3,4,4',5-Pentachlorobiphenyl (114)			R					
2,3',4,4',5-Pentachlorobiphenyl (118)			42.4831 J					
3,3',4,4',5-Pentachlorobiphenyl (126)			0.57322 J					
2,2',3,3',4,4'-Hexachlorobiphenyl (128)			10.38992 J					
2,2',3,3',4,5-Hexachlorobiphenyl (129)			43.09732 J					
2,2',3,3',4,5'-Hexachlorobiphenyl (130)			3.18616 J					
2,2',3,3',4,6-Hexachlorobiphenyl (131)			0.67115 J					
2,2',3,3',4,6'-Hexachlorobiphenyl (132)			23.57328 J					
2,2',3,3',5,6-Hexachlorobiphenyl (134)			3.6215 J					
2,2',3,3',5,6'-Hexachlorobiphenyl (135)			11.18301 J					
2,2',3,3',6,6'-Hexachlorobiphenyl (136)			8.82295 J					
2,2',3,4,4',5-Hexachlorobiphenyl (137)			4.897 J					
2,2',3,4,5,5'-Hexachlorobiphenyl (141)			3.9651 J					
2,2',3,4,5',6-Hexachlorobiphenyl (144)			R					
2,2',3,4',5,5'-Hexachlorobiphenyl (146)			1.76498 J					

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2,2',3,4',5,6-Hexachlorobiphenyl (147)			29.26736 J					
2,2',4,4',5,5'-Hexachlorobiphenyl (153)			10.74772 J					
2,3,3',4,4',5-Hexachlorobiphenyl (156)			4.04212 J					
2,3,3',4,4',6-Hexachlorobiphenyl (158)			3.06042 J					
2,3',4,4',5,5'-Hexachlorobiphenyl (167)			1.73831 J					
3,3',4,4',5,5'-Hexachlorobiphenyl (169)			R					
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)			10.83667 J					
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)			3.28862 J					
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)			0.81303 J					
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)			14.48902 J					
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)			R					
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)			1.285 J					
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)			5.35696 J					
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)			1.11983 J					
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)			6.71476 J					
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)			R					
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)			2.20026 J					
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)			R					
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)			0.36471 J					
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)			4.83656 J					
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)			0.19956 J					
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)			1.21934 J					
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)			0.16583 J					
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)			1.96878 J					
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)			1.27861 J					
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)			1.68103 J					
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)			0.06091 J					
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)			7.4225 J					
2,2',3,3',4,5,5',6'-Octachlorobiphenyl (199)			0.44989 J					
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)			0.72161 J					
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)			1.92861 J					
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)			0.10597 J					
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl			10.15311 J					
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl			0.60563 J					
Decachlorobiphenyl (209)			11.8549 J					
PCB Congeners, Total			812.94943 J					
Toxicity Equivalency (PCB)			0.0649					
Grain Size (%)								
Percent Coarse Sand	0	0	0		0	0	0	0

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Percent Fine Sand	18.62 J	0.21	0.16 J		0.65	0.83	15.17	13.95
Percent Gravel	0	0	0		0	0	0	0
Percent Medium Sand	5.26	0.05	0.03		0	0.25	1.58	1.7
Percent Clay	12.5	25	30.5		30	31.35	16.5	15
Percent Silt	63.62	74.73	69.31		69.35	67.57	66.75	69.35
Other (%)								
Total Organic Carbon	9.5	11.36	11.38		10.1	16.96	7.85	8
% Water	251		503		405	635		192
Solids, Percent					18.8	14.3		32.8
Percent_moisture					81.2	85.7		67.2

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* **106**(12):775-792.

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Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	LPX-SD-4013-DUP 7/10/2001 DUPLICATE	WRL-SD-071201-A 7/12/2001 REPLICATE	WRL-SD-4005-0000-01 7/12/2001
Semivolatile Organics (ug/Kg)			
1,1'-Biphenyl			
2,4,5-Trichlorophenol	2500 U		
2,4-Dinitrophenol	R		
2-Methylnaphthalene			
2-Nitrophenol	480 U		
4-Methylphenol	480 U		
4-Nitrophenol	2500 UJ		
Acenaphthene			
Acenaphthylene			
Anthracene			
Benzaldehyde			
Benzo(a)anthracene			
Benzo(a)pyrene			
Benzo(b)fluoranthene			
Benzo(g,h,i)perylene			
Benzo(k)fluoranthene			
bis(2-Ethylhexyl)phthalate	3800 J		
Butylbenzylphthalate	650 J		
Carbazole	220 J		
Chrysene			
Dibenzo(a,h)anthracene			
Dibenzofuran			
Di-n-Butylphthalate	99 J		
Di-n-octylphthalate	160 J		
Fluoranthene			
Fluorene			
Indeno(1,2,3-cd)pyrene			
Naphthalene			
Pentachlorophenol	2500 UJ		
Phenanthrene			
Phenol	480 U		
Pyrene			
Total PAH			
Pesticides/PCBs (ug/Kg)			
4,4'-DDD			6.42
4,4'-DDE			4.96
4,4'-DDT			9.51
Aldrin			1.4 U

Table A-6
Summary Statistics and Analytical Results for Aquatic Sediment - Lyman Mill

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PARAMETER	LPX-SD-4013-DUP 7/10/2001 DUPLICATE	WRL-SD-071201-A 7/12/2001 REPLICATE	WRL-SD-4005-0000-01 7/12/2001
alpha-BHC			1.4 U
alpha-Chlordane			21.08
Aroclor, Total			191.9
Aroclor-1016			17.48 U
Aroclor-1221			17.48 U
Aroclor-1232			17.48 U
Aroclor-1242			17.48 U
Aroclor-1248			17.48 U
Aroclor-1254			154.9
Aroclor-1260			17.48 U
Aroclor-1268			36.99
beta-BHC			1.4 U
delta-BHC			1.4 U
Dieldrin			10.02
Endosulfan I			1.4 U
Endosulfan II			1.4 U
Endosulfan Sulfate			10.55
Endrin			1.4 U
Endrin Aldehyde			1.4 UJ
Endrin Ketone			1.4 U
gamma-BHC			1.4 U
gamma-Chlordane			1.4 U
Heptachlor			1.4 UJ
Heptachlor Epoxide			1.4 UJ
Methoxychlor			1.4 UJ
Technical Chlordane			848.11
Toxaphene			34.96 U
Inorganics (mg/Kg)			
Aluminum		8335 J	6949 J
Antimony		0.206 U	0.199 U
Arsenic		3.23 J	2.62 J
Barium		92.9 J	86.3 J
Beryllium		0.989	0.793
Cadmium		0.16 U	0.894
Chromium		51.5 J	43.2 J
Cobalt		4.81	4.21
Copper		28.2 J	21.7 J
Iron		14046	12266
Lead		120 J	96.1 J

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PARAMETER	LPX-SD-4013-DUP 7/10/2001 DUPLICATE	WRL-SD-071201-A 7/12/2001 REPLICATE	WRL-SD-4005-0000-01 7/12/2001
Manganese		393 J	403 J
Mercury		0.353	0.279
Mercury (methyl)			0.00959 J
Molybdenum		7.43	5.44
Nickel		17.7	2.14 J
Selenium		0.555 U	0.456 U
Silver		0.602	0.364
Thallium		0.217 J	0.174 J
Vanadium		53.1	42.8
Zinc		204 J	172 J
AVS/SEM (mg/Kg)			
Cadmium		0.16 U	0.16 U
Copper		28.2 J	21.7 J
Lead		90.4 J	73.4 J
Mercury		0.00927 J	0.0153 J
Nickel		2.41 J	2.14 J
Zinc		60.4 U	45.5 U
Acid Volatile Sulfide		6.54 J	6.45 J
AVS/SEM Ration (unitless)		0.211	0.267
Dioxins/Furans (ug/Kg)			
HCX			21.82287 J
TCX			R
2,3,7,8-TCDD			0.75175
1,2,3,7,8-PeCDD			0.00203 J
1,2,3,4,7,8-HxCDD			0.003 J
1,2,3,6,7,8-HxCDD			0.00928
1,2,3,7,8,9-HxCDD			0.00831
1,2,3,4,6,7,8-HpCDD			0.19258
OCDD			1.3479
2,3,7,8-TCDF			0.0052 $
1,2,3,7,8-PeCDF			0.00188 J
2,3,4,7,8-PeCDF			0.00285 J
1,2,3,4,7,8-HxCDF			0.00628
1,2,3,6,7,8-HxCDF			0.00469 J
2,3,4,6,7,8-HxCDF			0.00356 J
1,2,3,7,8,9-HxCDF			0.00017 U
1,2,3,4,6,7,8-HpCDF			0.07064
1,2,3,4,7,8,9-HpCDF			0.00335 J
OCDF			0.12958

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PARAMETER	LPX-SD-4013-DUP 7/10/2001 DUPLICATE	WRL-SD-071201A 7/12/2001 REPLICATE	WRL-SD-4005-0000-01 7/12/2001
Total TCDD			0.75175 J
Total PeCDD			0.01073 J
Total HxCDD			0.06303 J
Total HpCDD			0.34517 J
Total TCDF			0.03422 J
Total PeCDF			0.05185 J
Total HxCDF			0.08644 J
Total HpCDF			0.15268 J
Toxicity Equivalency (Dioxins, Furans, HCX)			0.767
PCB Congeners (ug/Kg)			
2-Monochlorobiphenyl (1)			
4-Chlorobiphenyl (3)			
2,2'-Dichlorobiphenyl (4)			
2,3-Dichlorobiphenyl (5)			
2,3'-Dichlorobiphenyl (6)			
2,4-Dichlorobiphenyl (7)			
2,4'-Dichlorobiphenyl (8)			
2,5-Dichlorobiphenyl (9)			
2,6-Dichlorobiphenyl (10)			
3,4-Dichlorobiphenyl (12)			
2,2',3'-Trichlorobiphenyl (16)			
2,2',4-Trichlorobiphenyl (17)			
2,2',5-Trichlorobiphenyl (18)			
2,2',6-Trichlorobiphenyl (19)			
2,3,3'-Trichlorobiphenyl (20)			
2,3,4'-Trichlorobiphenyl (22)			
2,3,6-Trichlorobiphenyl (24)			
2,3',4-Trichlorobiphenyl (25)			
2,3',5-Trichlorobiphenyl (26)			
2,4',5-Trichlorobiphenyl (31)			
2,4',6-Trichlorobiphenyl (32)			
2,2',3,3'-Tetrachlorobiphenyl (40)			
2,2',3,4'-Tetrachlorobiphenyl (42)			
2,2',3,5-Tetrachlorobiphenyl (43)			
2,2',3,5'-Tetrachlorobiphenyl (44)			
2,2',3,6-Tetrachlorobiphenyl (45)			
2,2',3,6'-Tetrachlorobiphenyl (46)			
2,2',4,5-Tetrachlorobiphenyl (48)			
2,2',4,5'-Tetrachlorobiphenyl (49)			

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PARAMETER	LPX-SD-4013-DUP 7/10/2001 DUPLICATE	WRL-SD-071201-A 7/12/2001 REPLICATE	WRL-SD-4005-0000-01 7/12/2001
2,2',4,6-Tetrachlorobiphenyl (50)			
2,3,3',4'-Tetrachlorobiphenyl (56)			
2,3,3',6-Tetrachlorobiphenyl (59)			
2,3,4,4'-Tetrachlorobiphenyl (60)			
2,3,4,5-Tetrachlorobiphenyl (61)			
2,3,4',5-Tetrachlorobiphenyl (63)			
2,3,4',6-Tetrachlorobiphenyl (64)			
2,3',4,4'-Tetrachlorobiphenyl (66)			
3,3',4,4'-Tetrachlorobiphenyl (77)			
3,4,4',5-Tetrachlorobiphenyl (81)			
2,2',3,3',4-Pentachlorobiphenyl (82)			
2,2',3,3',5-Pentachlorobiphenyl (83)			
2,2',3,3',6-Pentachlorobiphenyl (84)			
2,2',3,4,4'-Pentachlorobiphenyl (85)			
2,2',3,4,5-Pentachlorobiphenyl (86)			
2,2',3,4,6-Pentachlorobiphenyl (88)			
2,2',3,4,6'-Pentachlorobiphenyl (89)			
2,2',3,4',5-Pentachlorobiphenyl (90)			
2,2',3,5,5'-Pentachlorobiphenyl (92)			
2,2',3,5,6-Pentachlorobiphenyl (93)			
2,3,3',4,4'-Pentachlorobiphenyl (105)			
2,3,3',4,5-Pentachlorobiphenyl (106)			
2,3,3',4',5'-Pentachlorobiphenyl (108)			
2,3,3',4',6-Pentachlorobiphenyl (110)			
2,3,4,4',5-Pentachlorobiphenyl (114)			
2,3',4,4',5-Pentachlorobiphenyl (118)			
3,3',4,4',5-Pentachlorobiphenyl (126)			
2,2',3,3',4,4'-Hexachlorobiphenyl (128)			
2,2',3,3',4,5-Hexachlorobiphenyl (129)			
2,2',3,3',4,5'-Hexachlorobiphenyl (130)			
2,2',3,3',4,6-Hexachlorobiphenyl (131)			
2,2',3,3',4,6'-Hexachlorobiphenyl (132)			
2,2',3,3',5,6-Hexachlorobiphenyl (134)			
2,2',3,3',5,6'-Hexachlorobiphenyl (135)			
2,2',3,3',6,6'-Hexachlorobiphenyl (136)			
2,2',3,4,4',5-Hexachlorobiphenyl (137)			
2,2',3,4,5,5'-Hexachlorobiphenyl (141)			
2,2',3,4,5',6-Hexachlorobiphenyl (144)			
2,2',3,4',5,5'-Hexachlorobiphenyl (146)			

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PARAMETER	LPX-SD-4013-DUP 7/10/2001 DUPLICATE	WRL-SD-071201A 7/12/2001 REPLICATE	WRL-SD-4005-0000-01 7/12/2001
2,2',3,4',5,6-Hexachlorobiphenyl (147)			
2,2',4,4',5,5'-Hexachlorobiphenyl (153)			
2,3,3',4,4',5-Hexachlorobiphenyl (156)			
2,3,3',4,4',6-Hexachlorobiphenyl (158)			
2,3',4,4',5,5'-Hexachlorobiphenyl (167)			
3,3',4,4',5,5'-Hexachlorobiphenyl (169)			
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)			
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)			
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)			
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)			
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)			
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)			
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)			
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)			
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)			
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)			
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)			
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)			
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)			
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)			
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)			
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)			
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)			
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)			
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)			
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)			
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)			
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)			
2,2',3,3',4,5,5',6'-Octachlorobiphenyl (199)			
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)			
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)			
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)			
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl			
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl			
Decachlorobiphenyl (209)			
PCB Congeners, Total			
Toxicity Equivalency (PCB)			
Grain Size (%)			
Percent Coarse Sand			1.78

Table A-6

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PARAMETER	LPX-SD-4013-DUP 7/10/2001 DUPLICATE	WRL-SD-071201-A 7/12/2001 REPLICATE	WRL-SD-4005-0000-01 7/12/2001
Percent Fine Sand			45.41 J
Percent Gravel			1.65
Percent Medium Sand			16.31
Percent Clay			5.5 J
Percent Silt			29.35
Other (%)			
Total Organic Carbon			8.31
% Water			128
Solids, Percent	34.5		
Percent moisture	65.5		

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* 106(12):775-792.

Table A-7
Summary Statistics and Analytical Results for Aquatic Sediment - Assapumpset Pond

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	RAB-SD-5004-0000-01 7/12/2001	RAB-SD-5008-0000-01 7/9/2001
Semivolatile Organics (ug/Kg)									
1,1'-Biphenyl	1	1			6.44	6.44	6.44		6.44 J
2,4,5-Trichlorophenol	0	0							R
2,4-Dinitrophenol	0	0							R
2-Methylnaphthalene	1	1			18.55	18.55	18.55		18.55
2-Nitrophenol	0	0							R
4-Methylphenol	0	0							R
4-Nitrophenol	0	0							R
Acenaphthene	1	1			34.11	34.11	34.11		34.11 J
Acenaphthylene	1	1			58.9	58.9	58.90		58.9
Anthracene	1	1			147.54	147.54	147.54		147.54
Benzaldehyde	1	1			278.56	278.56	278.56		278.56
Benzo(a)anthracene	1	1			693.32	693.32	693.32		693.32
Benzo(a)pyrene	1	1			796.85	796.85	796.85		796.85
Benzo(b)fluoranthene	1	1			822.04	822.04	822.04		822.04
Benzo(g,h,i)perylene	1	1			594.68	594.68	594.68		594.68
Benzo(k)fluoranthene	1	1			804.33	804.33	804.33		804.33
bis(2-Ethylhexyl)phthalate	1	1			650	650	650.00		650 J
Butylbenzylphthalate	0	0							R
Carbazole	0	0							R
Chrysene	1	1			981.97	981.97	981.97		981.97
Dibenzo(a,h)anthracene	1	1			178.98	178.98	178.98		178.98
Dibenzofuran	1	1			35.86	35.86	35.86		35.86
Di-n-Butylphthalate	0	0							R
Di-n-octylphthalate	0	0							R
Fluoranthene	1	1			1583.72	1583.72	1583.72		1583.72
Fluorene	1	1			80.68	80.68	80.68		80.68
Indeno(1,2,3-cd)pyrene	1	1			649.22	649.22	649.22		649.22
Naphthalene	1	1			19.05	19.05	19.05		19.05
Pentachlorophenol	0	0							R
Phenanthrene	1	1			794.74	794.74	794.74		794.74
Phenol	0	0							R
Pyrene	1	1			1329.73	1329.73	1329.73		1329.73
Total PAH	1	1			9630.72	9630.72	9630.72		9630.72
Pesticides/PCBs (ug/Kg)									
4,4'-DDD	2	2			2.08	3.17	2.63	2.08	3.17 J
4,4'-DDE	2	2			3.96	5.47	4.72	3.96	5.47 J
4,4'-DDT	1	2	1.81	1.81	7.7	7.7	4.30	1.81 U	7.7 J
Aldrin	0	2	1.62	1.81			0.86	1.81 U	1.62 UJ
alpha-BHC	0	2	1.62	1.81			0.86	1.81 U	1.62 UJ

Table A-7
Summary Statistics and Analytical Results for Aquatic Sediment - Assapumpset Pond

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	RAB-SD-5004-0000-01 7/12/2001	RAB-SD-5008-0000-01 7/9/2001
alpha-Chlordane	2	2			1.07	1.33	1.20	1.07 J	1.33 J
Aroclor, Total	2	2			29.65	99.22	64.44	29.65 J	99.22 J
Aroclor-1016	0	2	20.24	22.67			10.73	22.67 U	20.24 U
Aroclor-1221	0	2	20.24	22.67			10.73	22.67 U	20.24 U
Aroclor-1232	0	2	20.24	22.67			10.73	22.67 U	20.24 U
Aroclor-1242	0	2	20.24	22.67			10.73	22.67 U	20.24 U
Aroclor-1248	0	2	20.24	22.67			10.73	22.67 U	20.24 U
Aroclor-1254	2	2			25.1	57.55	41.33	25.1	57.55
Aroclor-1260	0	2	20.24	22.67			10.73	22.67 U	20.24 U
Aroclor-1268	2	2			4.55	41.66	23.11	4.55 J	41.66
beta-BHC	0	2	1.62	1.81			0.86	1.81 U	1.62 UJ
delta-BHC	0	2	1.62	1.81			0.86	1.81 U	1.62 UJ
Dieldrin	2	2			0.62	1.91	1.27	0.62 J	1.91 J
Endosulfan I	0	2	1.62	1.81			0.86	1.81 U	1.62 UJ
Endosulfan II	0	2	1.62	1.81			0.86	1.81 U	1.62 UJ
Endosulfan Sulfate	0	2	1.62	1.81			0.86	1.81 U	1.62 UJ
Endrin	0	2	1.62	1.81			0.86	1.81 U	1.62 UJ
Endrin Aldehyde	0	2	1.62	1.81			0.86	1.81 UJ	1.62 UJ
Endrin Ketone	0	2	1.62	1.81			0.86	1.81 U	1.62 UJ
gamma-BHC	0	2	1.62	1.81			0.86	1.81 U	1.62 UJ
gamma-Chlordane	1	2	1.62	1.62	0.65	0.65	0.73	0.65 J	1.62 UJ
Heptachlor	0	2	1.62	1.81			0.86	1.81 UJ	1.62 UJ
Heptachlor Epoxide	0	2	1.62	1.81			0.86	1.81 UJ	1.62 UJ
Methoxychlor	0	2	1.62	1.81			0.86	1.81 UJ	1.62 UJ
Technical Chlordane	2	2			63.85	152.53	108.19	63.85 J	152.53 J
Toxaphene	0	2	40.48	45.33			21.45	45.33 U	40.48 U
Inorganics (mg/Kg)									
Aluminum	2	2			13961	21774	17868	13961 J	21774 J
Antimony	0	2	0.0103	0.031			0.0103	0.031 U	0.0103 U
Arsenic	2	2			4.55	5.21	4.88	4.55 J	5.21 J
Barium	2	2			139	204	172	139 J	204 J
Beryllium	2	2			2.12	2.66	2.39	2.12	2.66
Cadmium	2	2			0.692	0.858	0.775	0.692 J	0.858
Chromium	2	2			13.8	17.5	15.7	13.8 J	17.5 J
Cobalt	2	2			8.41	10.1	9.26	8.41	10.1
Copper	2	2			9.78	18.3	14.0	18.3 J	9.78
Iron	2	2			17910	23357	20634	17910	23357
Lead	2	2			49.6	88.6	69.1	49.6 J	88.6 J
Manganese	2	2			830	908	869	908 J	830 J
Mercury	2	2			0.113	0.114	0.114	0.114	0.113 J

Table A-7

Summary Statistics and Analytical Results for Aquatic Sediment - Assapumpset Pond

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	RAB-SD-5004-0000-01 7/12/2001	RAB-SD-5008-0000-01 7/9/2001
Mercury (methyl)	2	2			0.000258	0.000863	0.0005605	0.000863 J	0.000258 J
Molybdenum	2	2			1.56	1.59	1.58	1.56 J	1.59 J
Nickel	2	2			19.7	20	19.9	20 J	19.7
Selenium	0	2	0.494	0.582			0.269	0.494 U	0.582 U
Silver	1	2	0.237	0.237	0.302	0.302	0.210	0.237 U	0.302 J
Thallium	2	2			0.285	0.354	0.320	0.285 J	0.354 J
Vanadium	2	2			23.6	32	27.8	23.6	32
Zinc	2	2			150	227	189	150 J	227 J
AVS/SEM (mg/Kg)									
Cadmium	2	2			0.0539	1.35	0.702	1.35 J	0.0539 J
Copper	2	2			9.78	18.3	14.0	18.3 J	9.78
Lead	2	2			77.9	88.6	83.3	77.9 J	88.6 J
Mercury	2	2			0.00377	0.01	0.00689	0.01 J	0.00377 J
Nickel	2	2			19.7	20	19.9	20 J	19.7
Zinc	0	2	165	231			99.0	231 U	165 U
Acid Volatile Sulfide	2	2			148	235	192	148 J	235 J
AVS/SEM Ration (unitless)	2	2			6.75	7.8	7.28	6.75	7.8
Dioxins/Furans (ug/Kg)									
HCX	1	1			0.01722	0.01722	0.01722	0.01722 J	
TCX	0	0						R	
2,3,7,8-TCDD	0	1	0.00104	0.00104			0.00052	0.00104 U	
1,2,3,7,8-PeCDD	0	1	0.00025	0.00025			0.00013	0.00025 U	
1,2,3,4,7,8-HxCDD	0	1	0.0009	0.0009			0.00045	0.0009 U	
1,2,3,6,7,8-HxCDD	0	1	0.00207	0.00207			0.00104	0.00207 U	
1,2,3,7,8,9-HxCDD	0	1	0.00323	0.00323			0.00162	0.00323 U	
1,2,3,4,6,7,8-HpCDD	0	1	0.04464	0.04464			0.02232	0.04464 U	
OCDD	0	1	0.23718	0.23718			0.11859	0.23718 U	
2,3,7,8-TCDF	0	1	0.00249	0.00249			0.00125	0.00249 U	
1,2,3,7,8-PeCDF	0	1	0.00023	0.00023			0.00012	0.00023 U	
2,3,4,7,8-PeCDF	0	1	0.001	0.001			0.00050	0.001 U	
1,2,3,4,7,8-HxCDF	0	1	0.00236	0.00236			0.00118	0.00236 U	
1,2,3,6,7,8-HxCDF	0	1	0.0009	0.0009			0.00045	0.0009 U	
2,3,4,6,7,8-HxCDF	0	1	0.00114	0.00114			0.00057	0.00114 U	
1,2,3,7,8,9-HxCDF	0	1	0.00065	0.00065			0.00033	0.00065 UJ	
1,2,3,4,6,7,8-HpCDF	1	1			0.00802	0.00802	0.00802	0.00802	
1,2,3,4,7,8,9-HpCDF	0	1	0.00049	0.00049			0.00025	0.00049 U	
OCDF	1	1			0.01069	0.01069	0.01069	0.01069	
Total TCDD	0	1	0.00129	0.00129			0.00065	0.00129 UJ	
Total PeCDD	1	1			0.00243	0.00243	0.00243	0.00243 J	
Total HxCDD	0	1	0.02416	0.02416			0.01208	0.02416 UJ	

Table A-7

Summary Statistics and Analytical Results for Aquatic Sediment - Assapumpset Pond

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	*RAB-SD-5004-0000-01 7/12/2001*	*RAB-SD-5008-0000-01 7/9/2001*
Total HpCDD	0	1	0.08316	0.08316			0.04158	0.08316 UJ	
Total TCDF	1	1			0.01426	0.01426	0.01426	0.01426 J	
Total PeCDF	0	1	0.01492	0.01492			0.00746	0.01492 UJ	
Total HxCDF	0	1	0.01368	0.01368			0.00684	0.01368 UJ	
Total HpCDF	0	1	0.01582	0.01582			0.00791	0.01582 UJ	
Toxicity Equivalency (Dioxins, Furans, HCX)	1	1			0.0000847	0.0000847	0.0000847	0.0000847	
Grain Size (%)									
Percent Coarse Sand	2	2			3.02	9.3	6.16	3.02	9.3
Percent Fine Sand	2	2			18.29	34.86	26.6	34.86 J	18.29
Percent Gravel	2	2			2.82	5.67	4.25	5.67	2.82
Percent Medium Sand	2	2			15.42	25.58	20.5	15.42	25.58
Percent Clay	2	2			17	20.5	18.8	20.5	17
Percent Silt	2	2			20.52	27.02	23.8	20.52	27.02
Other (%)									
Total Organic Carbon	2	2			4.3	4.45	4.38	4.45	4.3
% Water	2	2			253	260	257	260	253
Solids, Percent	1	1			28.8	28.8	28.8		28.8
Percent_moisture	1	1			71.2	71.2	71.2		71.2

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* 106(12):775-792.

Table A-8
Summary Statistics and Analytical Results for Surface Water - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	RWR-SW-5001-01 7/17/2001	RWR-SW-5002-01 7/17/2001
Volatile Organics (ug/L)									
1,1,1,2-Tetrachloroethane	0	2	1	1			0.50	1 UJ	1 UJ
1,1,1-Trichloroethane	0	2	1	1			0.50	1 U	1 U
1,1,2,2-Tetrachloroethane	0	2	1	1			0.50	1 UJ	1 UJ
1,1,2-Trichloroethane	0	2	1	1			0.50	1 U	1 U
1,1-Dichloroethane	0	2	1	1			0.50	1 U	1 U
1,1-Dichloroethene	0	2	1	1			0.50	1 U	1 U
1,1-Dichloropropene	0	2	1	1			0.50	1 U	1 U
1,2,3-Trichlorobenzene	0	2	1	1			0.50	1 UJ	1 UJ
1,2,3-Trichloropropane	0	2	1	1			0.50	1 UJ	1 UJ
1,2,4-Trichlorobenzene	0	2	1	1			0.50	1 UJ	1 UJ
1,2,4-Trimethylbenzene	0	2	1	1			0.50	1 UJ	1 UJ
1,2-Dibromo-3-chloropropane	0	2	1	1			0.50	1 UJ	1 UJ
1,2-Dibromoethane	0	2	1	1			0.50	1 U	1 U
1,2-Dichlorobenzene	0	2	1	1			0.50	1 UJ	1 UJ
1,2-Dichloroethane	0	2	1	1			0.50	1 UJ	1 UJ
1,2-Dichloropropane	0	2	1	1			0.50	1 U	1 U
1,3,5-Trimethylbenzene	0	2	1	1			0.50	1 U	1 U
1,3-Dichlorobenzene	0	2	1	1			0.50	1 UJ	1 UJ
1,3-Dichloropropane	0	2	1	1			0.50	1 UJ	1 UJ
1,4-Dichlorobenzene	0	2	1	1			0.50	1 UJ	1 UJ
2,2-Dichloropropane	0	2	1	1			0.50	1 U	1 U
2-Chlorotoluene	0	2	1	1			0.50	1 U	1 U
4-Chlorotoluene	0	2	1	1			0.50	1 U	1 U
Benzene	0	2	1	1			0.50	1 U	1 U
Bromobenzene	0	2	1	1			0.50	1 UJ	1 UJ
Bromochloromethane	0	2	1	1			0.50	1 U	1 U
Bromodichloromethane	0	2	1	1			0.50	1 UJ	1 UJ
Bromoform	0	2	1	1			0.50	1 UJ	1 UJ
Bromomethane	0	2	1	1			0.50	1 UJ	1 UJ
Carbon Tetrachloride	0	2	1	1			0.50	1 U	1 U
Chlorobenzene	0	2	1	1			0.50	1 U	1 U
Chloroethane	0	2	1	1			0.50	1 UJ	1 UJ
Chloroform	0	2	1	1			0.50	1 U	1 U
Chloromethane	0	2	1	1			0.50	1 U	1 U
cis-1,2-Dichloroethene	0	2	1	1			0.50	1 U	1 U
cis-1,3-Dichloropropene	0	2	1	1			0.50	1 U	1 U
Dibromochloromethane	0	2	1	1			0.50	1 UJ	1 UJ
Dibromomethane	0	2	1	1			0.50	1 U	1 U
Dichlorodifluoromethane	0	2	1	1			0.50	1 U	1 U
Ethylbenzene	0	2	1	1			0.50	1 U	1 U
Hexachlorobutadiene	0	2	1	1			0.50	1 UJ	1 UJ

Table A-8
Summary Statistics and Analytical Results for Surface Water - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	RWR-SW-5001-01 7/17/2001	RWR-SW-5002-01 7/17/2001
Isopropylbenzene	0	2	1	1			0.50	1 U	1 U
m&p-Xylene	0	2	1	1			0.50	1 UJ	1 UJ
Methylene Chloride	0	2	1	1			0.50	1 UJ	1 UJ
Naphthalene	0	2	1	1			0.50	1 UJ	1 UJ
n-Butylbenzene	0	2	1	1			0.50	1 U	1 U
n-Propylbenzene	0	2	1	1			0.50	1 U	1 U
o-Xylene	0	2	1	1			0.50	1 U	1 U
p-Isopropyltoluene	0	2	1	1			0.50	1 U	1 U
sec-Butylbenzene	0	2	1	1			0.50	1 UJ	1 UJ
Styrene	0	2	1	1			0.50	1 UJ	1 UJ
tert-Butylbenzene	0	2	1	1			0.50	1 U	1 U
Tetrachloroethene	0	2	1	1			0.50	1 UJ	1 UJ
Toluene	0	2	1	1			0.50	1 U	1 U
Total Volatile Organics	0	2	1	1			0.50	1 U	1 U
Total Xylenes	0	2	1	1			0.50	1 U	1 U
trans-1,2-Dichloroethene	0	2	1	1			0.50	1 U	1 U
trans-1,3-Dichloropropene	0	2	1	1			0.50	1 U	1 U
Trichloroethene	0	2	1	1			0.50	1 U	1 U
Trichlorofluoromethane	0	2	1	1			0.50	1 U	1 U
Vinyl Chloride	0	2	1	1			0.50	1 U	1 U
Semivolatile Organics (ug/L)									
1,1'-Biphenyl	0	2	0.00231	0.00238			0.00117	0.00231 U	0.00238 U
2,4,5-Trichlorophenol	0	2	50	50			25.00000	50 U	50 U
2,4-Dinitrophenol	0	0						R	R
2-Methylnaphthalene	0	2	0.00231	0.00238			0.00117	0.00231 U	0.00238 U
2-Nitrophenol	0	2	10	10			5.00000	10 UJ	10 UJ
4-Methylphenol	0	2	10	10			5.00000	10 U	10 U
4-Nitrophenol	0	2	50	50			25.00000	50 UJ	50 UJ
Acenaphthene	0	2	0.00231	0.00238			0.00117	0.00231 U	0.00238 U
Acenaphthylene	0	2	0.00231	0.00238			0.00117	0.00231 U	0.00238 U
Anthracene	0	2	0.00231	0.00238			0.00117	0.00231 U	0.00238 U
Benzaldehyde	0	2	0.00911	0.00957			0.00467	0.00911 U	0.00957 U
Benzo(a)anthracene	0	2	0.00231	0.00238			0.00117	0.00231 U	0.00238 U
Benzo(a)pyrene	0	2	0.00231	0.00238			0.00117	0.00231 U	0.00238 U
Benzo(b)fluoranthene	0	2	0.00325	0.00347			0.00168	0.00347 U	0.00325 U
Benzo(g,h,i)perylene	0	2	0.00238	0.00241			0.00120	0.00241 U	0.00238 U
Benzo(k)fluoranthene	0	2	0.00301	0.00303			0.00151	0.00301 U	0.00303 U
bis(2-Ethylhexyl)phthalate	0	2	10	10			5.00000	10 U	10 U
Butylbenzylphthalate	0	2	10	10			5.00000	10 U	10 U
Carbazole	0	2	10	10			5.00000	10 U	10 U
Chrysene	0	2	0.00523	0.00541			0.00266	0.00523 U	0.00541 U
Dibenzo(a,h)anthracene	0	2	0.00231	0.00238			0.00117	0.00231 U	0.00238 U

Table A-8
Summary Statistics and Analytical Results for Surface Water - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	RWR-SW-5001-01 7/17/2001	RWR-SW-5002-01 7/17/2001
Dibenzofuran	0	2	0.00231	0.00238			0.00117	0.00231 U	0.00238 U
Di-n-Butylphthalate	0	2	10	10			5.00000	10 U	10 U
Di-n-octylphthalate	0	2	10	10			5.00000	10 U	10 U
Fluoranthene	0	2	0.01496	0.01538			0.00759	0.01496 U	0.01538 U
Fluorene	0	2	0.00231	0.00238			0.00117	0.00231 U	0.00238 U
Indeno(1,2,3-cd)pyrene	0	2	0.00231	0.00238			0.00117	0.00231 U	0.00238 U
Naphthalene	0	2	0.00274	0.00287			0.00140	0.00274 U	0.00287 U
Pentachlorophenol	0	2	50	50			25.00000	50 UJ	50 UJ
Phenanthrene	0	2	0.00466	0.00537			0.00251	0.00466 U	0.00537 U
Phenol	0	2	10	10			5.00000	10 U	10 U
Pyrene	0	2	0.01067	0.01094			0.00540	0.01094 U	0.01067 U
Total PAH	0	2	0.06047	0.06242			0.03072	0.06047 U	0.06242 U
Pesticides/PCBs (ug/L)									
alpha-BHC	0	2	0.00185	0.0019			0.00094	0.00185 U	0.0019 U
Technical Chlordane	0	2	0.23077	0.2381			0.11722	0.23077 U	0.2381 U
beta-BHC	1	2	0.00185	0.00185	0.00105	0.00105	0.00099	0.00185 U	0.00105 J
delta-BHC	0	2	0.00185	0.0019			0.00094	0.00185 U	0.0019 U
gamma-BHC	1	2	0.00185	0.00185	0.00075	0.00075	0.00084	0.00185 U	0.00075 J
Heptachlor	0	2	0.00185	0.0019			0.00094	0.00185 U	0.0019 U
Aldrin	0	2	0.00185	0.0019			0.00094	0.00185 U	0.0019 U
Heptachlor Epoxide	0	2	0.00185	0.0019			0.00094	0.00185 U	0.0019 U
Endosulfan I	0	2	0.00185	0.0019			0.00094	0.00185 UJ	0.0019 UJ
Dieldrin	0	2	0.00185	0.0019			0.00094	0.00185 U	0.0019 U
4,4'-DDE	0	2	0.00185	0.0019			0.00094	0.00185 U	0.0019 U
Endrin	0	2	0.00185	0.0019			0.00094	0.00185 U	0.0019 U
Endosulfan II	0	2	0.00185	0.0019			0.00094	0.00185 U	0.0019 U
4,4'-DDD	0	2	0.00185	0.0019			0.00094	0.00185 U	0.0019 U
Endosulfan Sulfate	0	2	0.00185	0.0019			0.00094	0.00185 U	0.0019 U
4,4'-DDT	0	2	0.00185	0.0019			0.00094	0.00185 U	0.0019 U
Methoxychlor	0	2	0.00185	0.0019			0.00094	0.00185 U	0.0019 U
Endrin Ketone	0	2	0.00185	0.0019			0.00094	0.00185 U	0.0019 U
Endrin Aldehyde	0	2	0.00185	0.0019			0.00094	0.00185 UJ	0.0019 UJ
alpha-Chlordane	0	2	0.00185	0.0019			0.00094	0.00185 U	0.0019 U
gamma-Chlordane	0	2	0.00185	0.0019			0.00094	0.00185 U	0.0019 U
Toxaphene	0	2	0.04615	0.04762			0.02344	0.04615 U	0.04762 U
Aroclor-1016	0	2	0.02308	0.02381			0.01172	0.02308 U	0.02381 U
Aroclor-1221	0	2	0.02308	0.02381			0.01172	0.02308 U	0.02381 U
Aroclor-1232	0	2	0.02308	0.02381			0.01172	0.02308 U	0.02381 U
Aroclor-1242	0	2	0.02308	0.02381			0.01172	0.02308 U	0.02381 U
Aroclor-1248	0	2	0.02308	0.02381			0.01172	0.02308 U	0.02381 U
Aroclor-1254	0	2	0.02308	0.02381			0.01172	0.02308 U	0.02381 U
Aroclor-1260	0	2	0.02308	0.02381			0.01172	0.02308 U	0.02381 U

Table A-8

Summary Statistics and Analytical Results for Surface Water - Upstream

Data Evaluation Report

Centredale Manor Restoration Project Superfund Site

North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	RWR-SW-5001-01 7/17/2001	RWR-SW-5002-01 7/17/2001
Aroclor-1268	0	2	0.02308	0.02381			0.01172	0.02308 U	0.02381 U
Aroclor, Total	0	2	0.18462	0.19048			0.09378	0.18462 U	0.19048 U
Inorganics (ug/L)									
Aluminum	2	2			43.4	58	50.7	58	43.4
Antimony	2	2			0.168	0.173	0.171	0.168	0.173
Arsenic	2	2			0.539	0.55	0.545	0.539	0.55
Barium	2	2			19.5	20.4	20.0	20.4	19.5
Beryllium	2	2			0.0532	0.0551	0.0542	0.0532 J	0.0551 J
Cadmium	2	2			0.0184	0.022	0.0202	0.0184 J	0.022 J
Chromium	0	2	12	12			6.00	12 U	12 U
Cobalt	2	2			0.115	0.12	0.118	0.12	0.115
Copper	2	2			1.71	1.78	1.75	1.71 J	1.78 J
Iron	2	2			681	716	699	716	681
Lead	2	2			0.878	0.924	0.901	0.878	0.924
Manganese	2	2			122	144	133	144	122
Mercury	2	2			0.00188	0.00193	0.001905	0.00193	0.00188
Molybdenum	2	2			0.668	0.832	0.750	0.668 J	0.832 J
Nickel	2	2			1.15	1.17	1.16	1.15 J	1.17 J
Selenium	1	2	0.4	0.4	0.0868	0.0868	0.143	0.4 U	0.0868 J
Silver	0	2	2.68	2.68			1.34	2.68 U	2.68 U
Thallium	2	2			0.0064	0.00741	0.006905	0.00741 J	0.0064 J
Vanadium	0	2	8	8			4.00	8 UJ	8 UJ
Zinc	2	2			6.22	6.47	6.35	6.47	6.22
Metals Dissolved (ug/L)									
Aluminum	2	2			20.5	25.1	22.8	20.5 J	25.1 J
Antimony	1	2	0.149	0.149	0.164	0.164	0.119	0.149 U	0.164
Arsenic	2	2			0.414	0.444	0.429	0.414	0.444
Barium	2	2			15.3	17.9	16.6	15.3	17.9
Beryllium	2	2			0.032	0.0366	0.0343	0.032 J	0.0366 J
Cadmium	2	2			0.0114	0.0134	0.0124	0.0114 J	0.0134 J
Chromium	0	2	12	12			6.00	12 U	12 U
Cobalt	2	2			0.0894	0.099	0.0942	0.0894	0.099
Copper	2	2			1.19	1.44	1.32	1.19 J	1.44 J
Iron	2	2			496	510	503	510	496
Lead	2	2			0.433	0.542	0.488	0.433	0.542
Manganese	2	2			87.8	107	97.4	107	87.8
Mercury	2	2			0.00121	0.00128	0.001245	0.00128	0.00121
Molybdenum	2	2			0.565	0.786	0.676	0.565 J	0.786 J
Nickel	2	2			0.916	1.16	1.04	0.916 J	1.16 J
Selenium	0	2	0.4	0.4			0.200	0.4 U	0.4 U
Silver	0	2	2.68	2.68			1.34	2.68 U	2.68 U
Thallium	2	2			0.0067	0.00908	0.00789	0.0067 J	0.00908 J

Table A-8
Summary Statistics and Analytical Results for Surface Water - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	RWR-SW-5001-01 7/17/2001	RWR-SW-5002-01 7/17/2001
Vanadium	2	2			0.127	0.324	0.226	0.127 J	0.324 J
Zinc	2	2			5.28	5.61	5.45	5.28	5.61
Other (ug/L)									
Total Organic Carbon	2	2			5360	5520	5440	5520	5360
Dissolved Organic Carbon	2	2			5530	5640	5585	5640	5530
Nitrogen, Dissolved	2	2			1290	1300	1295	1290	1300
Nitrogen, Total	2	2			1300	1380	1340	1380	1300
Biochemical Oxygen Demand	2	2			2400	2800	2600	2800	2400
Phosphate	2	2			53.8	62.3	58.1	53.8	62.3
Nitrite-N	2	2			125	130	128	130	125
Nitrogen, Ammonia	2	2			340	447	394	447 J	340 J
Phosphorus, Dissolved	2	2			75.3	76.4	75.9	75.3 J	76.4 J
Phosphorus, Total	2	2			75.3	92.6	84.0	75.3 J	92.6
Nitrate	2	2			602	680	641	602	680
Total Suspended Solids	2	2			2400	2400	2400	2400	2400
Hardness	2	2			27900	28300	28100	27900	28300

NOTES:
SQL - Sample Quanitation Limit

Table A-9
Summary Statistics and Analytical Results for Surface Water - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	WRC-SW-4001-01 7/16/2001 DUPLICATE1	WRC-SW-4001-01 7/16/2001 DUPLICATE2	WRC-SW-4001-01 7/16/2001
Volatile Organics (ug/L)										
1,1,1,2-Tetrachloroethane	0	4	1	1			0.50			1 U
1,1,1-Trichloroethane	0	4	1	1			0.50			1 U
1,1,2,2-Tetrachloroethane	0	4	1	1			0.50			1 UJ
1,1,2-Trichloroethane	0	4	1	1			0.50			1 U
1,1-Dichloroethane	0	4	1	1			0.50			1 U
1,1-Dichloroethene	0	4	1	1			0.50			1 U
1,1-Dichloropropene	0	4	1	1			0.50			1 U
1,2,3-Trichlorobenzene	0	4	1	1			0.50			1 UJ
1,2,3-Trichloropropane	0	4	1	1			0.50			1 UJ
1,2,4-Trichlorobenzene	0	4	1	1			0.50			1 UJ
1,2,4-Trimethylbenzene	0	4	1	1			0.50			1 U
1,2-Dibromo-3-chloropropane	0	4	1	1			0.50			1 UJ
1,2-Dibromoethane	0	4	1	1			0.50			1 U
1,2-Dichlorobenzene	0	4	1	1			0.50			1 UJ
1,2-Dichloroethane	0	4	1	1			0.50			1 U
1,2-Dichloropropane	0	4	1	1			0.50			1 U
1,3,5-Trimethylbenzene	0	4	1	1			0.50			1 U
1,3-Dichlorobenzene	0	4	1	1			0.50			1 UJ
1,3-Dichloropropane	0	4	1	1			0.50			1 U
1,4-Dichlorobenzene	0	4	1	1			0.50			1 UJ
2,2-Dichloropropane	0	4	1	1			0.50			1 U
2-Chlorotoluene	0	4	1	1			0.50			1 U
4-Chlorotoluene	0	4	1	1			0.50			1 U
Benzene	0	4	1	1			0.50			1 U
Bromobenzene	0	4	1	1			0.50			1 U
Bromochloromethane	0	4	1	1			0.50			1 U
Bromodichloromethane	0	4	1	1			0.50			1 UJ
Bromoform	0	4	1	1			0.50			1 UJ
Bromomethane	0	4	1	1			0.50			1 UJ
Carbon Tetrachloride	0	4	1	1			0.50			1 U
Chlorobenzene	0	4	1	1			0.50			1 U
Chloroethane	0	4	1	1			0.50			1 UJ
Chloroform	0	4	1	1			0.50			1 U
Chloromethane	0	4	1	1			0.50			1 U
cis-1,2-Dichloroethene	0	4	1	1			0.50			1 U
cis-1,3-Dichloropropene	0	4	1	1			0.50			1 U
Dibromochloromethane	0	4	1	1			0.50			1 U
Dibromomethane	0	4	1	1			0.50			1 U

Table A-9
Summary Statistics and Analytical Results for Surface Water - Allendale

Data Evaluation Report
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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	WRC-SW-4001-01 7/16/2001 DUPLICATE1	WRC-SW-4001-01 7/16/2001 DUPLICATE2	WRC-SW-4001-01 7/16/2001
Dichlorodifluoromethane	0	4	1	1			0.50			1 U
Ethylbenzene	0	4	1	1			0.50			1 U
Hexachlorobutadiene	0	4	1	1			0.50			1 UJ
Isopropylbenzene	0	4	1	1			0.50			1 U
m&p-Xylene	0	4	1	1			0.50			1 U
Methylene Chloride	1	4	1	1	0.3	0.3	0.45			1 U
Naphthalene	0	4	1	1			0.50			1 UJ
n-Butylbenzene	0	4	1	1			0.50			1 U
n-Propylbenzene	0	4	1	1			0.50			1 U
o-Xylene	0	4	1	1			0.50			1 U
p-Isopropyltoluene	0	4	1	1			0.50			1 U
sec-Butylbenzene	0	4	1	1			0.50			1 U
Styrene	0	4	1	1			0.50			1 U
tert-Butylbenzene	0	4	1	1			0.50			1 U
Tetrachloroethene	2	4	1	1	0.5	0.7	0.55			1 UJ
Toluene	0	4	1	1			0.50			1 U
Total Volatile Organics	2	4	1	1	0.7	0.8	0.63			1 U
Total Xylenes	0	4	1	1			0.50			1 U
trans-1,2-Dichloroethene	0	4	1	1			0.50			1 U
trans-1,3-Dichloropropene	0	4	1	1			0.50			1 U
Trichloroethene	0	4	1	1			0.50			1 U
Trichlorofluoromethane	0	4	1	1			0.50			1 U
Vinyl Chloride	0	4	1	1			0.50			1 U
Semivolatile Organics (ug/L)										
1,1'-Biphenyl	1	5	0.00231	0.00462	0.00087	0.00087	0.00135			0.00242 U
2,4,5-Trichlorophenol	0	4	48	50			24.75000			50 U
2,4-Dinitrophenol	0	4	48	50			24.75000			50 UJ
2-Methylnaphthalene	1	5	0.00231	0.00462	0.00153	0.00153	0.00148			0.00242 U
2-Nitrophenol	0	4	10	10			5.00000			10 U
4-Methylphenol	0	4	10	10			5.00000			10 U
4-Nitrophenol	0	4	48	50			24.75000			50 U
Acenaphthene	1	5	0.00231	0.00462	0.00145	0.00145	0.00147			0.00242 U
Acenaphthylene	1	5	0.00231	0.00462	0.00058	0.00058	0.00129			0.00242 U
Anthracene	1	5	0.00231	0.00462	0.00097	0.00097	0.00137			0.00242 U
Benzaldehyde	1	5	0.01048	0.01326	0.01446	0.01446	0.00745			0.01112 U
Benzo(a)anthracene	1	5	0.00231	0.00462	0.00252	0.00252	0.00210			0.00453 U
Benzo(a)pyrene	1	5	0.00231	0.00567	0.00248	0.00248	0.00229			0.00567 U
Benzo(b)fluoranthene	1	5	0.00368	0.008	0.00349	0.00349	0.00312			0.00785 U
Benzo(g,h,i)perylene	1	5	0.0024	0.00513	0.00333	0.00333	0.00238			0.00513 U

Table A-9
Summary Statistics and Analytical Results for Surface Water - Allendale

Data Evaluation Report
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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	WRC-SW-4001-01 7/16/2001 DUPLICATE1	WRC-SW-4001-01 7/16/2001 DUPLICATE2	WRC-SW-4001-01 7/16/2001
Benzo(k)fluoranthene	1	5	0.00355	0.00732	0.00362	0.00362	0.00299			0.0072 U
bis(2-Ethylhexyl)phthalate	1	4	10	10	1	1	4.00000			1 J
Butylbenzylphthalate	0	4	10	10			5.00000			10 U
Carbazole	0	4	10	10			5.00000			10 U
Chrysene	1	5	0.00575	0.01064	0.00514	0.00514	0.00431			0.01017 U
Dibenzo(a,h)anthracene	1	5	0.00231	0.00462	0.00046	0.00046	0.00127			0.00242 U
Dibenzofuran	1	5	0.00231	0.00462	0.001	0.001	0.00138			0.00242 U
Di-n-Butylphthalate	0	4	10	10			5.00000			10 U
Di-n-octylphthalate	0	4	10	10			5.00000			10 U
Fluoranthene	1	5	0.0158	0.02389	0.01358	0.01358	0.01086			0.02389 U
Fluorene	0	5	0.00207	0.00462			0.00138			0.00242 U
Indeno(1,2,3-cd)pyrene	1	5	0.00231	0.00479	0.00225	0.00225	0.00188			0.00451 U
Naphthalene	1	5	0.00348	0.00491	0.00766	0.00766	0.00316			0.00358 U
Pentachlorophenol	0	4	48	50			24.75000			50 U
Phenanthrene	1	5	0.00672	0.0094	0.00561	0.00561	0.00455			0.00874 U
Phenol	0	4	10	10			5.00000			10 U
Pyrene	1	5	0.01077	0.01714	0.00961	0.00961	0.00767			0.01691 U
Total PAH	1	5	0.06744	0.10839	0.06613	0.06613	0.04961			0.10797 U
Pesticides/PCBs (ug/L)										
4,4'-DDD	0	5	0.00185	0.00369			0.00131			0.00194 U
4,4'-DDE	0	5	0.00185	0.00369			0.00131			0.00194 U
4,4'-DDT	0	5	0.00185	0.00369			0.00131			0.00194 U
Aldrin	0	5	0.00185	0.00369			0.00131			0.00194 U
alpha-BHC	0	5	0.00185	0.00369			0.00131			0.00194 U
alpha-Chlordane	3	5	0.00369	0.00369	0.00056	0.00069	0.00111			0.00069 J
Aroclor, Total	0	5	0.18462	0.36923			0.13086			0.19355 U
Aroclor-1016	0	5	0.02308	0.04615			0.01636			0.02419 U
Aroclor-1221	0	5	0.02308	0.04615			0.01636			0.02419 U
Aroclor-1232	0	5	0.02308	0.04615			0.01636			0.02419 U
Aroclor-1242	0	5	0.02308	0.04615			0.01636			0.02419 U
Aroclor-1248	0	5	0.02308	0.04615			0.01636			0.02419 U
Aroclor-1254	0	5	0.02308	0.04615			0.01636			0.02419 U
Aroclor-1260	0	5	0.02308	0.04615			0.01636			0.02419 U
Aroclor-1268	0	5	0.02308	0.04615			0.01636			0.02419 U
beta-BHC	0	5	0.00185	0.00369			0.00131			0.00194 U
delta-BHC	0	5	0.00185	0.00369			0.00131			0.00194 U
Dieldrin	0	5	0.00185	0.00369			0.00131			0.00194 U
Endosulfan I	0	5	0.00185	0.00369			0.00131			0.00194 U
Endosulfan II	0	5	0.00185	0.00369			0.00131			0.00194 U

Table A-9
Summary Statistics and Analytical Results for Surface Water - Allendale

Data Evaluation Report
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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	WRC-SW-4001-01 7/16/2001 DUPLICATE1	WRC-SW-4001-01 7/16/2001 DUPLICATE2	WRC-SW-4001-01 7/16/2001
Endosulfan Sulfate	1	5	0.00185	0.00369	0.00121	0.00121	0.00136			0.00194 U
Endrin	0	5	0.00185	0.00369			0.00131			0.00194 U
Endrin Aldehyde	0	5	0.00185	0.00369			0.00131			0.00194 U
Endrin Ketone	0	5	0.00185	0.00369			0.00131			0.00194 U
gamma-BHC	0	5	0.00185	0.00369			0.00131			0.00194 U
gamma-Chlordane	3	5	0.00369	0.00369	0.00055	0.00075	0.00111			0.00055 J
Heptachlor	0	5	0.00185	0.00369			0.00131			0.00194 U
Heptachlor Epoxide	0	5	0.00185	0.00369			0.00131			0.00194 U
Methoxychlor	0	5	0.00185	0.00369			0.00131			0.00194 U
Technical Chlordane	0	5	0.23077	0.46154			0.16358			0.24194 U
Toxaphene	0	5	0.04615	0.09231			0.03272			0.04839 U
Inorganics (ug/L)										
Aluminum	4	4			52.3	69.2	58.5			55.3
Antimony	4	4			0.183	0.186	0.185			0.184
Arsenic	4	4			0.558	0.598	0.577			0.58
Barium	4	4			16.6	17.6	16.9			16.6
Beryllium	4	4			0.0467	0.05	0.0484			0.05 J
Cadmium	4	4			0.0196	0.0253	0.0226			0.0223 J
Chromium	0	4	12	12			6.00			12 U
Cobalt	4	4			0.126	0.177	0.143			0.135
Copper	4	4			1.88	2.11	1.97			2.01 J
Iron	4	4			697	764	731			761
Lead	4	4			1.04	1.44	1.19			1.19
Manganese	4	4			110	169	127			110
Mercury	4	4			0.00211	0.00319	0.00255			0.00224
Molybdenum	4	4			0.961	1.1	1.04			1.1 J
Nickel	4	4			1.24	1.37	1.29			1.24 J
Selenium	0	4	0.4	0.4			0.200			0.4 U
Silver	0	4	2.68	2.68			1.34			2.68 U
Thallium	4	4			0.00607	0.00725	0.00670			0.00607 J
Vanadium	3	4	8	8	0.0352	0.108	1.06			0.0352 J
Zinc	4	4			5.92	6.8	6.36			6.3
Metals Dissolved (ug/L)										
Aluminum	4	4			20	95.8	39.3			20 J
Antimony	3	4	0.161	0.161	0.178	0.191	0.159			0.161 U
Arsenic	4	4			0.424	0.461	0.445			0.451
Barium	4	4			13.6	14.6	14.2			13.6
Beryllium	4	4			0.0331	0.0435	0.0382			0.0331 J
Cadmium	4	4			0.0129	0.0175	0.0158			0.0172 J

Table A-9
Summary Statistics and Analytical Results for Surface Water - Allendale

Data Evaluation Report
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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	WRC-SW-4001-01 7/16/2001 DUPLICATE1	WRC-SW-4001-01 7/16/2001 DUPLICATE2	WRC-SW-4001-01 7/16/2001
Chromium	0	4	12	12			6.00			12 U
Cobalt	4	4			0.0669	0.0849	0.0735			0.0748
Copper	4	4			1.31	1.46	1.39			1.31 J
Iron	4	4			496	512	503			512
Lead	4	4			0.475	0.501	0.488			0.501
Manganese	4	4			56.4	68	62.3			68
Mercury	4	4			0.00138	0.00173	0.00152			0.00138
Molybdenum	4	4			0.859	0.878	0.871			0.872 J
Nickel	4	4			0.989	1.14	1.08			0.989 J
Selenium	0	4	0.4	0.4			0.200			0.4 U
Silver	0	4	2.68	2.68			1.34			2.68 U
Thallium	4	4			0.00513	0.00604	0.00563			0.00513 J
Vanadium	0	4	8	8			4.00			8 UJ
Zinc	4	4			4.44	4.74	4.60			4.44 J
Other (ug/L)										
Total Organic Carbon	6	6			5150	5330	5232	5230	5250	5240
Dissolved Organic Carbon	4	4			4780	5230	5053			4780
Nitrogen, Dissolved	4	4			1260	1390	1315			1390
Nitrogen, Total	6	6			1300	1440	1373	1440	1440	1390
Biochemical Oxygen Demand	4	4			2000	18600	6450			2800
Phosphate	6	6			43.8	61.7	51.3			49.3
Nitrite-N	4	4			106	139	119			139
Nitrogen, Ammonia	4	4			194	306	242			306 J
Phosphorus, Dissolved	4	4			61.7	63.1	62.5			61.7 J
Phosphorus, Total	6	6			61.7	86.1	72.9	86.1	84.7	61.7 J
Nitrate	6	6			733	773	759			761
Total Suspended Solids	4	4			2400	14400	5400			2400
Hardness	4	4			28500	28800	28600			28500

NOTES:
SQL - Sample Quanitation Limit

Table A-9
Summary Statistics and Analytical Results for Surface Water - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
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PARAMETER	WRC-SW-4002-01 7/16/2001 DUPLICATE1	WRC-SW-4002-01 7/16/2001 DUPLICATE2	WRC-SW-4002-01 7/16/2001	WRC-SW-4003-01 7/16/2001 DUPLICATE	WRC-SW-4003-01 7/16/2001	WRC-SW-4004-01 7/16/2001 DUPLICATE1	WRC-SW-4004-01 7/16/2001 DUPLICATE2	WRC-SW-4004-01 7/16/2001
Volatile Organics (ug/L)								
1,1,1,2-Tetrachloroethane			1 U		1 U			1 U
1,1,1-Trichloroethane			1 U		1 U			1 U
1,1,2,2-Tetrachloroethane			1 UJ		1 UJ			1 UJ
1,1,2-Trichloroethane			1 U		1 U			1 U
1,1-Dichloroethane			1 U		1 U			1 U
1,1-Dichloroethene			1 U		1 U			1 U
1,1-Dichloropropene			1 U		1 U			1 U
1,2,3-Trichlorobenzene			1 UJ		1 UJ			1 UJ
1,2,3-Trichloropropane			1 UJ		1 UJ			1 UJ
1,2,4-Trichlorobenzene			1 UJ		1 UJ			1 UJ
1,2,4-Trimethylbenzene			1 U		1 U			1 U
1,2-Dibromo-3-chloropropane			1 UJ		1 UJ			1 UJ
1,2-Dibromoethane			1 U		1 U			1 U
1,2-Dichlorobenzene			1 UJ		1 UJ			1 UJ
1,2-Dichloroethane			1 U		1 U			1 U
1,2-Dichloropropane			1 U		1 U			1 U
1,3,5-Trimethylbenzene			1 U		1 U			1 U
1,3-Dichlorobenzene			1 UJ		1 UJ			1 UJ
1,3-Dichloropropane			1 U		1 U			1 U
1,4-Dichlorobenzene			1 UJ		1 UJ			1 UJ
2,2-Dichloropropane			1 U		1 U			1 U
2-Chlorotoluene			1 U		1 U			1 U
4-Chlorotoluene			1 U		1 U			1 U
Benzene			1 U		1 U			1 U
Bromobenzene			1 U		1 U			1 U
Bromochloromethane			1 U		1 U			1 U
Bromodichloromethane			1 U		1 UJ			1 UJ
Bromoform			1 UJ		1 UJ			1 UJ
Bromomethane			1 UJ		1 UJ			1 UJ
Carbon Tetrachloride			1 U		1 U			1 U
Chlorobenzene			1 U		1 U			1 U
Chloroethane			1 UJ		1 UJ			1 UJ
Chloroform			1 U		1 U			1 U
Chloromethane			1 U		1 U			1 U
cis-1,2-Dichloroethene			1 U		1 U			1 U
cis-1,3-Dichloropropene			1 U		1 U			1 U
Dibromochloromethane			1 U		1 U			1 U
Dibromomethane			1 U		1 U			1 U

Table A-9
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PARAMETER	WRC-SW-4002-01 7/16/2001 DUPLICATE1	WRC-SW-4002-01 7/16/2001 DUPLICATE2	WRC-SW-4002-01 7/16/2001	WRC-SW-4003-01 7/16/2001 DUPLICATE	WRC-SW-4003-01 7/16/2001	WRC-SW-4004-01 7/16/2001 DUPLICATE1	WRC-SW-4004-01 7/16/2001 DUPLICATE2	WRC-SW-4004-01 7/16/2001
Dichlorodifluoromethane			1 U		1 U			1 U
Ethylbenzene			1 U		1 U			1 U
Hexachlorobutadiene			1 UJ		1 UJ			1 UJ
Isopropylbenzene			1 U		1 U			1 U
m&p-Xylene			1 U		1 U			1 U
Methylene Chloride			1 U		1 U			0.3 J
Naphthalene			1 UJ		1 UJ			1 UJ
n-Butylbenzene			1 U		1 U			1 U
n-Propylbenzene			1 U		1 U			1 U
o-Xylene			1 U		1 U			1 U
p-Isopropyltoluene			1 U		1 U			1 U
sec-Butylbenzene			1 U		1 U			1 U
Styrene			1 U		1 U			1 U
tert-Butylbenzene			1 U		1 U			1 U
Tetrachloroethene			1 UJ		0.7 J			0.5 J
Toluene			1 U		1 U			1 U
Total Volatile Organics			1 U		0.7 J			0.8 J
Total Xylenes			1 U		1 U			1 U
trans-1,2-Dichloroethene			1 U		1 U			1 U
trans-1,3-Dichloropropene			1 U		1 U			1 U
Trichloroethene			1 U		1 U			1 U
Trichlorofluoromethane			1 U		1 U			1 U
Vinyl Chloride			1 U		1 U			1 U
Semivolatile Organics (ug/L)								
1,1'-Biphenyl			0.0024 U	0.00087 J	0.00462 U			0.00231 U
2,4,5-Trichlorophenol			50 U		48 U			50 U
2,4-Dinitrophenol			50 UJ		48 UJ			50 UJ
2-Methylnaphthalene			0.0024 U	0.00153 J	0.00462 U			0.00231 U
2-Nitrophenol			10 U		10 U			10 U
4-Methylphenol			10 U		10 U			10 U
4-Nitrophenol			50 U		48 U			50 U
Acenaphthene			0.0024 U	0.00145 J	0.00462 U			0.00231 U
Acenaphthylene			0.0024 U	0.00058 J	0.00462 U			0.00231 U
Anthracene			0.0024 U	0.00097 J	0.00462 U			0.00231 U
Benzaldehyde			0.01074 U	0.01446	0.01326 U			0.01048 U
Benzo(a)anthracene			0.00451 U	0.00252 J	0.00462 U			0.00231 U
Benzo(a)pyrene			0.00538 U	0.00248 J	0.00462 U			0.00231 U
Benzo(b)fluoranthene			0.008 U	0.00349 J	0.00466 U			0.00368 U
Benzo(g,h,i)perylene			0.00494 U	0.00333 J	0.00462 U			0.0024 U

Table A-9
Summary Statistics and Analytical Results for Surface Water - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	WRC-SW-4002-01 7/16/2001 DUPLICATE1	WRC-SW-4002-01 7/16/2001 DUPLICATE2	WRC-SW-4002-01 7/16/2001	WRC-SW-4003-01 7/16/2001 DUPLICATE	WRC-SW-4003-01 7/16/2001	WRC-SW-4004-01 7/16/2001 DUPLICATE1	WRC-SW-4004-01 7/16/2001 DUPLICATE2	WRC-SW-4004-01 7/16/2001
Benzo(k)fluoranthene			0.00732 U	0.00362 J	0.00462 U			0.00355 U
bis(2-Ethylhexyl)phthalate			10 U		10 U			10 U
Butylbenzylphthalate			10 U		10 U			10 U
Carbazole			10 U		10 U			10 U
Chrysene			0.01064 U	0.00514	0.00626 U			0.00575 U
Dibenzo(a,h)anthracene			0.0024 U	0.00046 J	0.00462 U			0.00231 U
Dibenzofuran			0.0024 U	0.001 J	0.00462 U			0.00231 U
Di-n-Butylphthalate			10 U		10 U			10 U
Di-n-octylphthalate			10 U		10 U			10 U
Fluoranthene			0.02379 U	0.01358	0.01798 U			0.0158 U
Fluorene			0.0024 U	0.00462 U	0.00207 U			0.00231 U
Indeno(1,2,3-cd)pyrene			0.00479 U	0.00225 J	0.00268 U			0.00231 U
Naphthalene			0.00348 U	0.00766 B	0.00491 U			0.00429 U
Pentachlorophenol			50 U		48 U			50 U
Phenanthrene			0.00937 U	0.00561	0.0094 U			0.00672 U
Phenol			10 U		10 U			10 U
Pyrene			0.01714 U	0.00961	0.01262 U			0.01077 U
Total PAH			0.10839 U	0.06613 J	0.08008 U			0.06744 U
Pesticides/PCBs (ug/L)								
4,4'-DDD			0.00192 U	0.00369 U	0.00369 U			0.00185 U
4,4'-DDE			0.00192 U	0.00369 U	0.00369 U			0.00185 U
4,4'-DDT			0.00192 U	0.00369 U	0.00369 U			0.00185 U
Aldrin			0.00192 U	0.00369 U	0.00369 U			0.00185 U
alpha-BHC			0.00192 U	0.00369 U	0.00369 U			0.00185 U
alpha-Chlordane			0.00063 J	0.00369 U	0.00369 U			0.00056 J
Aroclor, Total			0.192 U	0.36923 U	0.36923 U			0.18462 U
Aroclor-1016			0.024 U	0.04615 U	0.04615 U			0.02308 U
Aroclor-1221			0.024 U	0.04615 U	0.04615 U			0.02308 U
Aroclor-1232			0.024 U	0.04615 U	0.04615 U			0.02308 U
Aroclor-1242			0.024 U	0.04615 U	0.04615 U			0.02308 U
Aroclor-1248			0.024 U	0.04615 U	0.04615 U			0.02308 U
Aroclor-1254			0.024 U	0.04615 U	0.04615 U			0.02308 U
Aroclor-1260			0.024 U	0.04615 U	0.04615 U			0.02308 U
Aroclor-1268			0.024 U	0.04615 U	0.04615 U			0.02308 U
beta-BHC			0.00192 U	0.00369 U	0.00369 U			0.00185 U
delta-BHC			0.00192 U	0.00369 U	0.00369 U			0.00185 U
Dieldrin			0.00192 U	0.00369 U	0.00369 U			0.00185 U
Endosulfan I			0.00192 U	0.00369 U	0.00369 U			0.00185 U
Endosulfan II			0.00192 U	0.00369 U	0.00369 U			0.00185 U

Table A-9
Summary Statistics and Analytical Results for Surface Water - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	WRC-SW-4002-01 7/16/2001 DUPLICATE1	WRC-SW-4002-01 7/16/2001 DUPLICATE2	WRC-SW-4002-01 7/16/2001	WRC-SW-4003-01 7/16/2001 DUPLICATE	WRC-SW-4003-01 7/16/2001	WRC-SW-4004-01 7/16/2001 DUPLICATE1	WRC-SW-4004-01 7/16/2001 DUPLICATE2	WRC-SW-4004-01 7/16/2001
Endosulfan Sulfate			0.00121 J	0.00369 U	0.00369 U			0.00185 U
Endrin			0.00192 U	0.00369 U	0.00369 U			0.00185 U
Endrin Aldehyde			0.00192 U	0.00369 U	0.00369 U			0.00185 U
Endrin Ketone			0.00192 U	0.00369 U	0.00369 U			0.00185 U
gamma-BHC			0.00192 U	0.00369 U	0.00369 U			0.00185 U
gamma-Chlordane			0.00075 J	0.00369 U	0.00369 U			0.00056 J
Heptachlor			0.00192 U	0.00369 U	0.00369 U			0.00185 U
Heptachlor Epoxide			0.00192 U	0.00369 U	0.00369 U			0.00185 U
Methoxychlor			0.00192 U	0.00369 U	0.00369 U			0.00185 U
Technical Chlordane			0.24 U	0.46154 U	0.46154 U			0.23077 U
Toxaphene			0.048 U	0.09231 U	0.09231 U			0.04615 U
Inorganics (ug/L)								
Aluminum			69.2 J		52.3			57.3
Antimony			0.185		0.183			0.186
Arsenic			0.598		0.57			0.558
Barium			17.6		16.7			16.8
Beryllium			0.049 J		0.0478 J			0.0467 J
Cadmium			0.0253 J		0.0196 J			0.023 J
Chromium			12 U		12 U			12 U
Cobalt			0.177		0.126			0.134
Copper			2.11 J		1.88 J			1.88 J
Iron			764		697			701
Lead			1.44		1.04			1.1
Manganese			169		117			111
Mercury			0.00319		0.00211			0.00265
Molybdenum			1.1 J		0.961 J			1.01 J
Nickel			1.31 J		1.25 J			1.37 J
Selenium			0.4 U		0.4 U			0.4 U
Silver			2.68 U		2.68 U			2.68 U
Thallium			0.00725 J		0.00673 J			0.00674 J
Vanadium			8 UJ		0.094 J			0.108 J
Zinc			6.8		5.92			6.43
Metals Dissolved (ug/L)								
Aluminum			95.8 J		20.9 J			20.3 J
Antimony			0.185		0.191			0.178
Arsenic			0.442		0.461			0.424
Barium			14.6		14.1			14.3
Beryllium			0.0435 J		0.0402 J			0.0359 J
Cadmium			0.0129 J		0.0175 J			0.0156 J

Table A-9
Summary Statistics and Analytical Results for Surface Water - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	WRC-SW-4002-01 7/16/2001 DUPLICATE1	WRC-SW-4002-01 7/16/2001 DUPLICATE2	WRC-SW-4002-01 7/16/2001	WRC-SW-4003-01 7/16/2001 DUPLICATE	WRC-SW-4003-01 7/16/2001	WRC-SW-4004-01 7/16/2001 DUPLICATE1	WRC-SW-4004-01 7/16/2001 DUPLICATE2	WRC-SW-4004-01 7/16/2001
Chromium			12 U		12 U			12 U
Cobalt			0.0849		0.0672			0.0669
Copper			1.46 J		1.34 J			1.43 J
Iron			504		501			496
Lead			0.492		0.475			0.485
Manganese			63.9		61			56.4
Mercury			0.00146		0.00173			0.00149
Molybdenum			0.876 J		0.859 J			0.878 J
Nickel			1.11 J		1.08 J			1.14 J
Selenium			0.4 U		0.4 U			0.4 U
Silver			2.68 U		2.68 U			2.68 U
Thallium			0.00578 J		0.00604 J			0.00555 J
Vanadium			8 UJ		8 UJ			8 UJ
Zinc			4.62 J		4.6 J			4.74 J
Other (ug/L)								
Total Organic Carbon			5330		5150			5190
Dissolved Organic Carbon			5040		5230			5160
Nitrogen, Dissolved			1340		1260			1270
Nitrogen, Total			1340		1300			1330
Biochemical Oxygen Demand			18600		2000			2400
Phosphate			43.8		47.9	61.7	55.7	49.2
Nitrite-N			116		115			106
Nitrogen, Ammonia			261 J		194 J			206 J
Phosphorus, Dissolved			63.1 J		63.1 J			62.2 J
Phosphorus, Total			63.1 J		79.7			62.2 J
Nitrate	765	773	769		733			754
Total Suspended Solids			14400		2400			2400
Hardness			28800		28600			28500

NOTES:
SQL - Sample Quanitation Limit

Table A-10
Summary Statistics and Analytical Results for Surface Water - Lyman Mill

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	WRL-DU-071701-A 7/17/2001	WRL-DU-071701-A 7/17/2001 REPLICATE	WRL-SW-400401 7/17/2001	WRL-SW-400501 7/17/2001
Volatile Organics (ug/L)											
cis-1,2-Dichloroethene	0	2	1	1			0.50	1 U		1 U	1 U
trans-1,2-Dichloroethene	0	2	1	1			0.50	1 U		1 U	1 U
Chloromethane	0	2	1	1			0.50	1 U		1 U	1 U
Dichlorodifluoromethane	0	2	1	1			0.50	1 U		1 U	1 U
Bromomethane	0	2	1	1			0.50	1 UJ		1 UJ	1 UJ
Vinyl Chloride	0	2	1	1			0.50	1 U		1 U	1 U
1,3-Dichlorobenzene	0	2	1	1			0.50	1 UJ		1 UJ	1 UJ
Chloroethane	0	2	1	1			0.50	1 UJ		1 UJ	1 UJ
1,4-Dichlorobenzene	0	2	1	1			0.50	1 UJ		1 UJ	1 UJ
Methylene Chloride	0	2	1	1			0.50	1 UJ		1 UJ	1 UJ
1,2-Dichlorobenzene	0	2	1	1			0.50	1 UJ		1 UJ	1 UJ
Trichlorofluoromethane	0	2	1	1			0.50	1 U		1 U	1 U
1,1-Dichloroethene	0	2	1	1			0.50	1 U		1 U	1 U
1,1-Dichloroethane	0	2	1	1			0.50	1 U		1 U	1 U
Chloroform	0	2	1	1			0.50	1 U		1 U	1 U
1,2-Dichloroethane	0	2	1	1			0.50	1 UJ		1 UJ	1 UJ
1,1,1-Trichloroethane	0	2	1	1			0.50	1 U		1 U	1 U
Carbon Tetrachloride	0	2	1	1			0.50	1 U		1 U	1 U
Bromodichloromethane	0	2	1	1			0.50	1 UJ		1 UJ	1 UJ
1,2,4-Trichlorobenzene	0	2	1	1			0.50	1 UJ		1 UJ	1 UJ
1,2-Dichloropropane	0	2	1	1			0.50	1 U		1 U	1 U
2,2-Dichloropropane	0	2	1	1			0.50	1 U		1 U	1 U
Bromochloromethane	0	2	1	1			0.50	1 U		1 U	1 U
cis-1,3-Dichloropropene	0	2	1	1			0.50	1 U		1 U	1 U
Naphthalene	0	2	1	1			0.50	1 UJ		1 UJ	1 UJ
Trichloroethene	0	2	1	1			0.50	1 U		1 U	1 U
Dibromochloromethane	0	2	1	1			0.50	1 UJ		1 UJ	1 UJ
Hexachlorobutadiene	0	2	1	1			0.50	1 UJ		1 UJ	1 UJ
1,1,2-Trichloroethane	0	2	1	1			0.50	1 U		1 U	1 U
1,1-Dichloropropene	0	2	1	1			0.50	1 U		1 U	1 U
Benzene	0	2	1	1			0.50	1 U		1 U	1 U
trans-1,3-Dichloropropene	0	2	1	1			0.50	1 U		1 U	1 U
Bromoform	0	2	1	1			0.50	1 UJ		1 UJ	1 UJ
Dibromomethane	0	2	1	1			0.50	1 U		1 U	1 U
Tetrachloroethene	0	2	1	1			0.50	1 UJ		1 UJ	1 UJ
1,1,2,2-Tetrachloroethane	0	2	1	1			0.50	1 UJ		1 UJ	1 UJ
Toluene	0	2	1	1			0.50	1 U		1 U	1 U
Chlorobenzene	0	2	1	1			0.50	1 U		1 U	1 U

Table A-10
Summary Statistics and Analytical Results for Surface Water - Lyman Mill

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	WRL-DU-071701-A 7/17/2001	WRL-DU-071701-A 7/17/2001 REPLICATE	WRL-SW-400401 7/17/2001	WRL-SW-400501 7/17/2001
Ethylbenzene	0	2	1	1			0.50	1 U		1 U	1 U
Styrene	0	2	1	1			0.50	1 UJ		1 UJ	1 UJ
Total Xylenes	0	2	1	1			0.50	1 U		1 U	1 U
1,3-Dichloropropane	0	2	1	1			0.50	1 UJ		1 UJ	1 UJ
1,2-Dibromoethane	0	2	1	1			0.50	1 U		1 U	1 U
m&p-Xylene	0	2	1	1			0.50	1 UJ		1 UJ	1 UJ
1,1,1,2-Tetrachloroethane	0	2	1	1			0.50	1 UJ		1 UJ	1 UJ
o-Xylene	0	2	1	1			0.50	1 U		1 U	1 U
Isopropylbenzene	0	2	1	1			0.50	1 U		1 U	1 U
1,2,3-Trichloropropane	0	2	1	1			0.50	1 UJ		1 UJ	1 UJ
Bromobenzene	0	2	1	1			0.50	1 UJ		1 UJ	1 UJ
n-Propylbenzene	0	2	1	1			0.50	1 U		1 U	1 U
2-Chlorotoluene	0	2	1	1			0.50	1 U		1 U	1 U
1,3,5-Trimethylbenzene	0	2	1	1			0.50	1 U		1 U	1 U
4-Chlorotoluene	0	2	1	1			0.50	1 U		1 U	1 U
tert-Butylbenzene	0	2	1	1			0.50	1 U		1 U	1 U
1,2,4-Trimethylbenzene	0	2	1	1			0.50	1 UJ		1 UJ	1 UJ
sec-Butylbenzene	0	2	1	1			0.50	1 UJ		1 UJ	1 UJ
p-Isopropyltoluene	0	2	1	1			0.50	1 U		1 U	1 U
n-Butylbenzene	0	2	1	1			0.50	1 U		1 U	1 U
1,2-Dibromo-3-chloropropane	0	2	1	1			0.50	1 UJ		1 UJ	1 UJ
1,2,3-Trichlorobenzene	0	2	1	1			0.50	1 UJ		1 UJ	1 UJ
Total Volatile Organics	0	2	1	1			0.50	1 U		1 U	1 U
Semivolatile Organics (ug/L)											
Phenol	0	2	10	11			5.25000	11 U		11 U	10 U
4-Methylphenol	0	2	10	11			5.25000	11 U		11 U	10 U
2-Nitrophenol	0	2	10	11			5.25000	11 UJ		11 UJ	10 UJ
Naphthalene	0	2	0.00323	0.0037			0.00173	0.00237 U		0.0037 U	0.00323 U
2-Methylnaphthalene	0	2	0.00244	0.00254			0.00125	0.00236 U		0.00244 U	0.00254 U
2,4,5-Trichlorophenol	0	2	50	53			25.75000	53 U		53 U	50 U
Acenaphthylene	2	2			0.00132	0.00132	0.00132	0.00156 J		0.00132 J	0.00132 J
Acenaphthene	0	2	0.00244	0.00254			0.00125	0.00236 U		0.00244 U	0.00254 U
2,4-Dinitrophenol	0	0						R		R	R
4-Nitrophenol	0	2	50	53			25.75000	53 UJ		53 UJ	50 UJ
Dibenzofuran	0	2	0.00244	0.00254			0.00125	0.00236 U		0.00244 U	0.00254 U
Fluorene	0	2	0.0027	0.00283			0.00138	0.00233 U		0.0027 U	0.00283 U
Pentachlorophenol	0	2	50	53			25.75000	53 UJ		53 UJ	50 UJ
Phenanthrene	0	2	0.01384	0.01386			0.00693	0.01385 U		0.01384 U	0.01386 U
Anthracene	0	2	0.00275	0.00286			0.00140	0.00256 U		0.00286 U	0.00275 U

Table A-10
Summary Statistics and Analytical Results for Surface Water - Lyman Mill

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	WRL-DU-071701-A 7/17/2001	WRL-DU-071701-A 7/17/2001 REPLICATE	WRL-SW-400401 7/17/2001	WRL-SW-400501 7/17/2001
Carbazole	0	2	10	11			5.25000	11 U		11 U	10 U
Di-n-Butylphthalate	0	2	10	11			5.25000	11 U		11 U	10 U
Fluoranthene	0	2	0.03652	0.0395			0.01901	0.03801 U		0.03652 U	0.0395 U
Pyrene	0	2	0.02755	0.03043			0.01450	0.02871 U		0.02755 U	0.03043 U
Butylbenzylphthalate	0	2	10	11			5.25000	11 U		11 U	10 U
Benzo(a)anthracene	0	2	0.00906	0.0106			0.00492	0.00918 U		0.00906 U	0.0106 U
Chrysene	0	2	0.01786	0.02003			0.00947	0.01894 U		0.01786 U	0.02003 U
bis(2-Ethylhexyl)phthalate	0	2	10	11			5.25000	11 U		11 U	10 U
Di-n-octylphthalate	0	2	10	11			5.25000	11 U		11 U	10 U
Benzo(b)fluoranthene	0	2	0.01289	0.01535			0.00706	0.01515 U		0.01289 U	0.01535 U
Benzo(k)fluoranthene	0	2	0.01299	0.01413			0.00678	0.01411 U		0.01299 U	0.01413 U
Benzo(a)pyrene	0	2	0.0096	0.01118			0.00520	0.01084 U		0.0096 U	0.01118 U
Indeno(1,2,3-cd)pyrene	0	2	0.00819	0.0106			0.00470	0.01046 U		0.00819 U	0.0106 U
Dibenzo(a,h)anthracene	0	2	0.00244	0.00254			0.00125	0.00236 U		0.00244 U	0.00254 U
Benzo(g,h,i)perylene	0	2	0.00825	0.00899			0.00431	0.00899 U		0.00825 U	0.00899 U
Total PAH	0	2	0.17474	0.19233			0.09177	0.18413 U		0.17474 U	0.19233 U
1,1'-Biphenyl	0	2	0.00244	0.00254			0.00125	0.00236 U		0.00244 U	0.00254 U
Benzaldehyde	0	2	0.00892	0.0115			0.00511	0.01003 U		0.00892 U	0.0115 U
Pesticides/PCBs (ug/L)											
alpha-BHC	0	2	0.00195	0.00203			0.00100	0.00189 U		0.00195 U	0.00203 U
Technical Chlordane	0	2	0.2439	0.25424			0.12454	0.23622 U		0.2439 U	0.25424 U
beta-BHC	2	2			0.00097	0.00149	0.00123	0.00137 J		0.00097 J	0.00149 J
delta-BHC	0	2	0.00195	0.00203			0.00100	0.00189 U		0.00195 U	0.00203 U
gamma-BHC	2	2			0.00062	0.00083	0.00073	0.00072 J		0.00062 J	0.00083 J
Heptachlor	0	2	0.00195	0.00203			0.00100	0.00189 U		0.00195 U	0.00203 U
Aldrin	0	2	0.00195	0.00203			0.00100	0.00189 U		0.00195 U	0.00203 U
Heptachlor Epoxide	0	2	0.00195	0.00203			0.00100	0.00189 U		0.00195 U	0.00203 U
Endosulfan I	0	2	0.00195	0.00203			0.00100	0.00189 UJ		0.00195 UJ	0.00203 UJ
Dieldrin	0	2	0.00195	0.00203			0.00100	0.00189 U		0.00195 U	0.00203 U
4,4'-DDE	0	2	0.00195	0.00203			0.00100	0.00189 U		0.00195 U	0.00203 U
Endrin	0	2	0.00195	0.00203			0.00100	0.00189 U		0.00195 U	0.00203 U
Endosulfan II	0	2	0.00195	0.00203			0.00100	0.00189 U		0.00195 U	0.00203 U
4,4'-DDD	0	2	0.00195	0.00203			0.00100	0.00189 U		0.00195 U	0.00203 U
Endosulfan Sulfate	0	2	0.00195	0.00203			0.00100	0.00189 U		0.00195 U	0.00203 U
4,4'-DDT	0	2	0.00195	0.00203			0.00100	0.00189 U		0.00195 U	0.00203 U
Methoxychlor	0	2	0.00195	0.00203			0.00100	0.00189 U		0.00195 U	0.00203 U
Endrin Ketone	0	2	0.00195	0.00203			0.00100	0.00189 U		0.00195 U	0.00203 U
Endrin Aldehyde	0	2	0.00195	0.00203			0.00100	0.00189 UJ		0.00195 UJ	0.00203 UJ
alpha-Chlordane	0	2	0.00195	0.00203			0.00100	0.00189 U		0.00195 U	0.00203 U

Table A-10
Summary Statistics and Analytical Results for Surface Water - Lyman Mill

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	WRL-DU-071701-A 7/17/2001	WRL-DU-071701-A 7/17/2001 REPLICATE	WRL-SW-400401 7/17/2001	WRL-SW-400501 7/17/2001
gamma-Chlordane	0	2	0.00195	0.00203			0.00100	0.00189 U		0.00195 U	0.00203 U
Toxaphene	0	2	0.04878	0.05085			0.02491	0.04724 U		0.04878 U	0.05085 U
Aroclor-1016	0	2	0.02439	0.02542			0.01245	0.02362 U		0.02439 U	0.02542 U
Aroclor-1221	0	2	0.02439	0.02542			0.01245	0.02362 U		0.02439 U	0.02542 U
Aroclor-1232	0	2	0.02439	0.02542			0.01245	0.02362 U		0.02439 U	0.02542 U
Aroclor-1242	0	2	0.02439	0.02542			0.01245	0.02362 U		0.02439 U	0.02542 U
Aroclor-1248	0	2	0.02439	0.02542			0.01245	0.02362 U		0.02439 U	0.02542 U
Aroclor-1254	0	2	0.02439	0.02542			0.01245	0.02362 U		0.02439 U	0.02542 U
Aroclor-1260	0	2	0.02439	0.02542			0.01245	0.02362 U		0.02439 U	0.02542 U
Aroclor-1268	0	2	0.02439	0.02542			0.01245	0.02362 U		0.02439 U	0.02542 U
Aroclor, Total	0	2	0.19512	0.20339			0.09963	0.18898 U		0.19512 U	0.20339 U
Inorganics (mg/L)											
Aluminum	2	2			75.6	81.5	78.6		98	81.5	75.6
Antimony	2	2			0.203	0.22	0.212		0.176 J	0.22 J	0.203
Arsenic	2	2			0.533	0.549	0.541		0.497	0.533	0.549
Barium	2	2			18.4	19.4	18.9		17.2	18.4	19.4
Beryllium	2	2			0.0481	0.0527	0.0504		0.0542 J	0.0481 J	0.0527 J
Cadmium	2	2			0.0288	0.0289	0.0289		0.0293 J	0.0288 J	0.0289 J
Chromium	0	2	12	12			6.00		12 U	12 U	12 U
Cobalt	2	2			0.152	0.16	0.156		0.145	0.16	0.152
Copper	2	2			2.33	2.49	2.41		2.27 J	2.33 J	2.49 J
Iron	2	2			737	767	752		795	767	737
Lead	2	2			1.99	2.02	2.01		1.94	2.02	1.99
Manganese	2	2			117	130	124		129	130	117
Mercury	2	2			0.00294	0.00394	0.00344		0.00437	0.00394	0.00294
Molybdenum	2	2			0.929	0.942	0.936		0.829 J	0.929 J	0.942 J
Nickel	2	2			1.54	1.58	1.56		1.41 J	1.54 J	1.58 J
Selenium	0	2	0.4	0.4			0.200		0.4 U	0.4 U	0.4 U
Silver	0	2	2.68	2.68			1.34		2.68 U	2.68 U	2.68 U
Thallium	2	2			0.00678	0.00722	0.00700		0.00601 J	0.00722 J	0.00678 J
Vanadium	1	2	8	8	0.00506	0.00506	2.00		8 UJ	0.00506 J	8 UJ
Zinc	2	2			9.83	9.87	9.85		13.1	9.83	9.87
Metals Dissolved (ug/L)											
Aluminum	2	2			20.5	21	20.8		22.9 J	20.5 J	21 J
Antimony	2	2			0.18	0.22	0.200		0.189	0.22	0.18
Arsenic	2	2			0.416	0.446	0.431		0.444	0.446	0.416
Barium	2	2			16.6	17.2	16.9		16.2	17.2	16.6
Beryllium	2	2			0.0286	0.0367	0.0327		0.0325 J	0.0286 J	0.0367 J
Cadmium	2	2			0.0147	0.0148	0.0148		0.0143 J	0.0147 J	0.0148 J

Table A-10
Summary Statistics and Analytical Results for Surface Water - Lyman Mill

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	WRL-DU-071701-A 7/17/2001	WRL-DU-071701-A 7/17/2001 REPLICATE	WRL-SW-400401 7/17/2001	WRL-SW-400501 7/17/2001
Chromium	0	2	12	12			6.00		12 U	12 U	12 U
Cobalt	2	2			0.097	0.0976	0.0973		0.0944	0.097	0.0976
Copper	2	2			1.55	1.63	1.59		1.5 J	1.63 J	1.55 J
Iron	2	2			472	474	473		474	472	474
Lead	2	2			0.658	0.662	0.660		0.641	0.658	0.662
Manganese	2	2			67.2	68.5	67.9		67.9	67.2	68.5
Mercury	2	2			0.00127	0.00144	0.00136		0.0013	0.00127	0.00144
Molybdenum	2	2			0.861	0.897	0.879		0.856 J	0.897 J	0.861 J
Nickel	2	2			1.38	1.4	1.39		1.31 J	1.4 J	1.38 J
Selenium	0	2	0.4	0.4			0.200		0.4 U	0.4 U	0.4 U
Silver	0	2	2.68	2.68			1.34		2.68 U	2.68 U	2.68 U
Thallium	2	2			0.0228	0.0229	0.0229		0.02 J	0.0229 J	0.0228 J
Vanadium	0	2	8	8			4.00		8 UJ	8 UJ	8 UJ
Zinc	2	2			6.65	7.08	6.87		6.61	7.08	6.65
Other (ug/L)											
Total Organic Carbon	2	2			5410	5460	5435	5370		5460	5410
Dissolved Organic Carbon	2	2			5120	5500	5310	5390		5500	5120
Nitrogen, Dissolved	2	2			1220	1220	1220	1220		1220	1220
Nitrogen, Total	2	2			1270	1290	1280	1300		1290	1270
Biochemical Oxygen Demand	1	1			2100	2100	2100	2000			2100
Phosphate	2	2			58.7	59.8	59.25	52.9		58.7	59.8
Nitrite-N	2	2			82	86.5	84.25	86		86.5	82
Nitrogen, Ammonia	2	2			138	142	140	140 J		142 J	138 J
Phosphorus, Dissolved	2	2			72.1	73.1	72.6	72.4 J		72.1 J	73.1 J
Phosphorus, Total	2	2			72.1	73.1	72.6	100		72.1 J	73.1 J
Nitrate	2	2			757	765	761	776		765	757
Total Suspended Solids	2	2			3200	4000	3600	4800		4000	3200
Hardness	2	2			29200	29200	29200		29200	29200	29200

NOTES:
SQL - Sample Quanitation Limit

Table A-11
Summary Statistics and Analytical Results for Surface Water - Assapumpset Pond

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	RAB-SW-5004-01 7/17/2001 DUPLICATE	RAB-SW-5004-01 7/17/2001
Volatile Organics (ug/L)									
cis-1,2-Dichloroethene	0	1	1	1			0.50		1 U
trans-1,2-Dichloroethene	0	1	1	1			0.50		1 U
Chloromethane	0	1	1	1			0.50		1 U
Dichlorodifluoromethane	0	1	1	1			0.50		1 U
Bromomethane	0	1	1	1			0.50		1 UJ
Vinyl Chloride	0	1	1	1			0.50		1 U
1,3-Dichlorobenzene	0	1	1	1			0.50		1 UJ
Chloroethane	0	1	1	1			0.50		1 UJ
1,4-Dichlorobenzene	0	1	1	1			0.50		1 UJ
Methylene Chloride	0	1	1	1			0.50		1 UJ
1,2-Dichlorobenzene	0	1	1	1			0.50		1 UJ
Trichlorofluoromethane	0	1	1	1			0.50		1 U
1,1-Dichloroethene	0	1	1	1			0.50		1 U
1,1-Dichloroethane	0	1	1	1			0.50		1 U
Chloroform	0	1	1	1			0.50		1 U
1,2-Dichloroethane	0	1	1	1			0.50		1 UJ
1,1,1-Trichloroethane	0	1	1	1			0.50		1 U
Carbon Tetrachloride	0	1	1	1			0.50		1 U
Bromodichloromethane	0	1	1	1			0.50		1 UJ
1,2,4-Trichlorobenzene	0	1	1	1			0.50		1 UJ
1,2-Dichloropropane	0	1	1	1			0.50		1 UJ
2,2-Dichloropropane	0	1	1	1			0.50		1 U
Bromochloromethane	0	1	1	1			0.50		1 U
cis-1,3-Dichloropropene	0	1	1	1			0.50		1 UJ
Naphthalene	0	1	1	1			0.50		1 UJ
Trichloroethene	0	1	1	1			0.50		1 U
Dibromochloromethane	0	1	1	1			0.50		1 UJ
Hexachlorobutadiene	0	1	1	1			0.50		1 UJ
1,1,2-Trichloroethane	0	1	1	1			0.50		1 UJ
1,1-Dichloropropene	0	1	1	1			0.50		1 U
Benzene	0	1	1	1			0.50		1 UJ
trans-1,3-Dichloropropene	0	1	1	1			0.50		1 UJ
Bromoform	0	1	1	1			0.50		1 UJ
Dibromomethane	0	1	1	1			0.50		1 UJ
Tetrachloroethene	0	1	1	1			0.50		1 UJ
1,1,2,2-Tetrachloroethane	0	1	1	1			0.50		1 UJ
Toluene	0	1	1	1			0.50		1 UJ
Chlorobenzene	0	1	1	1			0.50		1 UJ
Ethylbenzene	0	1	1	1			0.50		1 U

Table A-11
Summary Statistics and Analytical Results for Surface Water - Assapumpset Pond

Data Evaluation Report
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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	RAB-SW-5004-01 7/17/2001 DUPLICATE	RAB-SW-5004-01 7/17/2001
Styrene	0	1	1	1			0.50		1 UJ
Total Xylenes	0	1	1	1			0.50		1 U
1,3-Dichloropropane	0	1	1	1			0.50		1 UJ
1,2-Dibromoethane	0	1	1	1			0.50		1 UJ
m&p-Xylene	0	1	1	1			0.50		1 UJ
1,1,1,2-Tetrachloroethane	0	1	1	1			0.50		1 UJ
o-Xylene	0	1	1	1			0.50		1 UJ
Isopropylbenzene	0	1	1	1			0.50		1 U
1,2,3-Trichloropropane	0	1	1	1			0.50		1 UJ
Bromobenzene	0	1	1	1			0.50		1 UJ
n-Propylbenzene	0	1	1	1			0.50		1 U
2-Chlorotoluene	0	1	1	1			0.50		1 U
1,3,5-Trimethylbenzene	0	1	1	1			0.50		1 UJ
4-Chlorotoluene	0	1	1	1			0.50		1 U
tert-Butylbenzene	0	1	1	1			0.50		1 U
1,2,4-Trimethylbenzene	0	1	1	1			0.50		1 UJ
sec-Butylbenzene	0	1	1	1			0.50		1 UJ
p-Isopropyltoluene	0	1	1	1			0.50		1 UJ
n-Butylbenzene	0	1	1	1			0.50		1 UJ
1,2-Dibromo-3-chloropropane	0	1	1	1			0.50		1 UJ
1,2,3-Trichlorobenzene	0	1	1	1			0.50		1 UJ
Total Volatile Organics	0	1	1	1			0.50		1 U
Semivolatile Organics (ug/L)									
Phenol	0	1	11	11			5.50000		11 U
4-Methylphenol	0	1	11	11			5.50000		11 U
2-Nitrophenol	0	1	11	11			5.50000		11 UJ
Naphthalene	0	1	0.00863	0.00863			0.00432		0.00863 U
2-Methylnaphthalene	0	1	0.00238	0.00238			0.00119		0.00238 U
2,4,5-Trichlorophenol	0	1	53	53			26.50000		53 U
Acenaphthylene	0	1	0.00238	0.00238			0.00119		0.00238 U
Acenaphthene	0	1	0.00238	0.00238			0.00119		0.00238 U
2,4-Dinitrophenol	0	0							R
4-Nitrophenol	0	1	53	53			26.50000		53 UJ
Dibenzofuran	0	1	0.00238	0.00238			0.00119		0.00238 U
Fluorene	0	1	0.00238	0.00238			0.00119		0.00238 U
Pentachlorophenol	0	1	53	53			26.50000		53 UJ
Phenanthrene	0	1	0.00697	0.00697			0.00349		0.00697 U
Anthracene	0	1	0.00238	0.00238			0.00119		0.00238 U
Carbazole	0	1	11	11			5.50000		11 U
Di-n-Butylphthalate	0	1	11	11			5.50000		11 U

Table A-11
Summary Statistics and Analytical Results for Surface Water - Assapumpset Pond

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	RAB-SW-5004-01 7/17/2001 DUPLICATE	RAB-SW-5004-01 7/17/2001
Fluoranthene	0	1	0.0048	0.0048			0.00240		0.0048 U
Pyrene	0	1	0.00261	0.00261			0.00131		0.00261 U
Butylbenzylphthalate	0	1	11	11			5.50000		11 U
Benzo(a)anthracene	0	1	0.00238	0.00238			0.00119		0.00238 U
Chrysene	0	1	0.00238	0.00238			0.00119		0.00238 U
bis(2-Ethylhexyl)phthalate	0	1	11	11			5.50000		11 U
Di-n-octylphthalate	0	1	11	11			5.50000		11 U
Benzo(b)fluoranthene	0	1	0.00238	0.00238			0.00119		0.00238 U
Benzo(k)fluoranthene	0	1	0.00238	0.00238			0.00119		0.00238 U
Benzo(a)pyrene	0	1	0.00238	0.00238			0.00119		0.00238 U
Indeno(1,2,3-cd)pyrene	0	1	0.00238	0.00238			0.00119		0.00238 U
Dibenzo(a,h)anthracene	0	1	0.00238	0.00238			0.00119		0.00238 U
Benzo(g,h,i)perylene	0	1	0.00238	0.00238			0.00119		0.00238 U
Total PAH	0	1	0.03447	0.03447			0.01724		0.03447 U
1,1'-Biphenyl	0	1	0.00238	0.00238			0.00119		0.00238 U
Benzaldehyde	0	1	0.01641	0.01641			0.00821		0.01641 U
Pesticides/PCBs (ug/L)									
alpha-BHC	0	1	0.0019	0.0019			0.00095		0.0019 U
Technical Chlordane	0	1	0.2381	0.2381			0.11905		0.2381 U
beta-BHC	1	1			0.00098	0.00098	0.00098		0.00098 J
delta-BHC	0	1	0.0019	0.0019			0.00095		0.0019 U
gamma-BHC	1	1			0.0006	0.0006	0.00060		0.0006 J
Heptachlor	0	1	0.0019	0.0019			0.00095		0.0019 U
Aldrin	0	1	0.0019	0.0019			0.00095		0.0019 U
Heptachlor Epoxide	0	1	0.0019	0.0019			0.00095		0.0019 U
Endosulfan I	0	1	0.0019	0.0019			0.00095		0.0019 UJ
Dieldrin	0	1	0.0019	0.0019			0.00095		0.0019 U
4,4'-DDE	0	1	0.0019	0.0019			0.00095		0.0019 U
Endrin	0	1	0.0019	0.0019			0.00095		0.0019 U
Endosulfan II	0	1	0.0019	0.0019			0.00095		0.0019 U
4,4'-DDD	0	1	0.0019	0.0019			0.00095		0.0019 U
Endosulfan Sulfate	0	1	0.0019	0.0019			0.00095		0.0019 U
4,4'-DDT	0	1	0.0019	0.0019			0.00095		0.0019 U
Methoxychlor	0	1	0.0019	0.0019			0.00095		0.0019 U
Endrin Ketone	0	1	0.0019	0.0019			0.00095		0.0019 U
Endrin Aldehyde	0	1	0.0019	0.0019			0.00095		0.0019 UJ
alpha-Chlordane	0	1	0.0019	0.0019			0.00095		0.0019 U
gamma-Chlordane	0	1	0.0019	0.0019			0.00095		0.0019 U
Toxaphene	0	1	0.04762	0.04762			0.02381		0.04762 U
Aroclor-1016	0	1	0.02381	0.02381			0.01191		0.02381 U

Table A-11
Summary Statistics and Analytical Results for Surface Water - Assapumpset Pond

Data Evaluation Report
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North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	RAB-SW-5004-01 7/17/2001 DUPLICATE	RAB-SW-5004-01 7/17/2001
Aroclor-1221	0	1	0.02381	0.02381			0.01191		0.02381 U
Aroclor-1232	0	1	0.02381	0.02381			0.01191		0.02381 U
Aroclor-1242	0	1	0.02381	0.02381			0.01191		0.02381 U
Aroclor-1248	0	1	0.02381	0.02381			0.01191		0.02381 U
Aroclor-1254	0	1	0.02381	0.02381			0.01191		0.02381 U
Aroclor-1260	0	1	0.02381	0.02381			0.01191		0.02381 U
Aroclor-1268	0	1	0.02381	0.02381			0.01191		0.02381 U
Aroclor, Total	0	1	0.19048	0.19048			0.09524		0.19048 U
Inorganics (ug/L)									
Aluminum	1	1			48.4	48.4	48.4	47.3	48.4
Antimony	0	1	0.0652	0.0652			0.0326	0.118	0.0652 U
Arsenic	1	1			0.491	0.491	0.491	0.45	0.491
Barium	1	1			21.3	21.3	21.3	21.1	21.3
Beryllium	1	1			0.0487	0.0487	0.0487	0.0467 J	0.0487 J
Cadmium	1	1			0.00794	0.00794	0.00794	0.00964 J	0.00794 J
Chromium	0	1	12	12			6.00	2.3 J	12 U
Cobalt	1	1			0.114	0.114	0.114	0.117	0.114
Copper	1	1			0.666	0.666	0.666	0.658 J	0.666 J
Iron	1	1			832	832	832	834	832
Lead	1	1			0.366	0.366	0.366	0.357	0.366
Manganese	1	1			104	104	104	105	104
Mercury	1	1			0.00215	0.00215	0.00215	0.00223	0.00215
Molybdenum	1	1			0.368	0.368	0.368	0.375 J	0.368 J
Nickel	1	1			1.29	1.29	1.29	1.26 J	1.29 J
Selenium	1	1			0.0815	0.0815	0.0815	0.0597 J	0.0815 J
Silver	0	1	2.68	2.68			1.34	0.00671 J	2.68 U
Thallium	1	1			0.00511	0.00511	0.00511	0.00594 J	0.00511 J
Vanadium	1	1			0.0358	0.0358	0.0358	8 U	0.0358 J
Zinc	1	1			1.6	1.6	1.60	1.52 J	1.6 J
Metals Dissolved (ug/L)									
Aluminum	1	1			19	19	19.0	19.1 J	19 J
Antimony	0	1	0.0603	0.0603			0.0302	0.0585	0.0603 U
Arsenic	1	1			0.407	0.407	0.407	0.385	0.407
Barium	1	1			18.5	18.5	18.5	18.1	18.5
Beryllium	1	1			0.0324	0.0324	0.0324	0.0307 J	0.0324 J
Cadmium	1	1			0.00641	0.00641	0.00641	0.00345 J	0.00641 J
Chromium	0	1	12	12			6.00	1.29 J	12 U
Cobalt	1	1			0.0962	0.0962	0.0962	0.098	0.0962
Copper	0	1	3.24	3.24			1.62	0.557 J	3.24 U
Iron	1	1			551	551	551	552	551

Table A-11
Summary Statistics and Analytical Results for Surface Water - Assapumpset Pond

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	RAB-SW-5004-01 7/17/2001 DUPLICATE	RAB-SW-5004-01 7/17/2001
Lead	1	1			0.232	0.232	0.232	0.206	0.232
Manganese	1	1			23.2	23.2	23.2	23.4	23.2
Mercury	1	1			0.00162	0.00162	0.00162	0.00151	0.00162
Molybdenum	1	1			0.333	0.333	0.333	0.317 J	0.333 J
Nickel	1	1			1.13	1.13	1.13	1.11 J	1.13 J
Selenium	0	1	0.4	0.4			0.200	0.0339 J	0.4 U
Silver	0	1	2.68	2.68			1.34	0.00334 J	2.68 U
Thallium	1	1			0.00806	0.00806	0.00806	0.00954 J	0.00806 J
Vanadium	0	1	8	8			4.00	8 U	8 UJ
Zinc	0	1	4.8	4.8			2.40	1.14 J	4.8 U
Other (ug/L)									
Total Organic Carbon	1	1			6180	6180	6180		6180
Dissolved Organic Carbon	1	1			6060	6060	6060		6060
Nitrogen, Dissolved	1	1			490	490	490		490
Nitrogen, Total	1	1			540	540	540		540
Biochemical Oxygen Demand	1	1			2400	2400	2400		2400
Phosphate	1	1			2.3	2.3	2.30		2.3
Nitrite-N	1	1			5.1	5.1	5.10		5.1
Nitrogen, Ammonia	1	1			11	11	11.0		11 J
Phosphorus, Dissolved	1	1			13	13	13.0		13 J
Phosphorus, Total	1	1			13	13	13.0		13 J
Nitrate	1	1			149	149	149		149
Total Suspended Solids	1	1			3600	3600	3600		3600
Hardness	2	2			39100	39200	39150	39100	39200

NOTES:
SQL - Sample Quanitation Limit

Table A-12
Summary Statistics and Analytical Results for American Eel - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	GMP-AE-5001-0000-01-W 6/22/2001 DUPLICATE	GMP-AE-5001-0000-01-W 6/22/2001	GMP-AE-5002-0000-01-W 6/22/2001
Semivolatile Organics (ug/Kg)										
1,1'-Biphenyl	0	10	1.24	1.78			0.65		1.26 U	1.25 U
2-Methylnaphthalene	10	10			0.96	5.51	3.46		0.96 J	4.91
Acenaphthene	10	10			0.45	4.03	2.31		0.45 J	2.71
Acenaphthylene	7	10	1.24	1.26	1.07	1.55	1.04		1.26 U	1.12 J
Anthracene	7	10	1.24	1.26	0.82	1.28	0.94		1.26 U	1.1 J
Benzo(a)anthracene	0	10	1.24	3.22			0.88		1.26 U	1.25 U
Benzo(a)pyrene	1	10	1.24	3.87	4.57	4.57	1.32		1.26 U	1.52 U
Benzo(b)fluoranthene	1	10	1.24	3.99	5.33	5.33	1.49		1.26 U	1.77 U
Benzo(g,h,i)perylene	0	10	1.26	4.85			1.25		1.26 U	1.87 U
Benzo(k)fluoranthene	1	10	1.24	3.82	4.52	4.52	1.36		1.26 U	1.5 U
Chrysene	1	10	1.26	4.56	5.58	5.58	1.65		1.26 U	1.86 U
Dibenzo(a,h)anthracene	2	10	1.24	1.26	1.42	1.56	0.80		1.26 U	1.25 U
Dibenzofuran	0	10	1.24	1.26			0.63		1.26 U	1.25 U
Fluoranthene	5	10	1.26	5.37	6.45	9.06	5.00		1.26 U	4.32 U
Fluorene	10	10			0.5	1.48	1.03		0.5 J	1.05 J
Indeno(1,2,3-cd)pyrene	1	10	1.26	3.35	4.32	4.32	1.32		1.26 U	1.56 U
Naphthalene	3	10	1.84	5.62	6.03	6.89	3.43		1.84 U	6.03
Phenanthrene	2	10	2.22	5.06	6.23	6.89	2.86		2.22 U	4.13 U
Pyrene	0	10	1.26	6.68			1.83		1.26 U	2.69 U
Total PAH	10	10			1.91	58.2	18.40		1.91 J	16.93 J
Pesticides/PCBs (ug/Kg)										
4,4'-DDD	10	10			7.98	16.3	12.84		7.98 J	11.5 J
4,4'-DDE	10	10			20.61	43.9	31.61		33.72 J	36.57 J
4,4'-DDT	10	10			0.54	4.2	2.01		2.28 J	0.54 J
Aldrin	0	10	1.66	1.69			0.84		1.68 UJ	1.67 UJ
alpha-BHC	0	10	1.66	1.69			0.84		1.68 UJ	1.67 UJ
alpha-Chlordane	10	10			4.02	22.2	13.98		4.02 J	14.43 J
Aroclor, Total	10	10			180.36	438.7	309.99		277.82 J	391.56 J
Aroclor-1016	0	10	20.72	21.05			10.43		20.98 UJ	20.82 UJ
Aroclor-1221	0	10	20.72	21.05			10.43		20.98 UJ	20.82 UJ
Aroclor-1232	0	10	20.72	21.05			10.43		20.98 UJ	20.82 UJ
Aroclor-1242	0	10	20.72	21.05			10.43		20.98 UJ	20.82 UJ
Aroclor-1248	0	10	20.72	21.05			10.43		20.98 UJ	20.82 UJ
Aroclor-1254	10	10			116.33	292.8	207.81		184.02 J	276.82 J
Aroclor-1260	0	10	20.72	21.05			10.43		20.98 UJ	20.82 UJ
Aroclor-1268	10	10			58.66	145.91	102.19		93.6 J	114.75 J
beta-BHC	0	10	1.66	1.69			0.84		1.68 UJ	1.67 UJ
delta-BHC	0	10	1.66	1.69			0.84		1.68 UJ	1.67 UJ
Dieldrin	10	10			1.24	8.85	3.53		1.24 J	2.43 J
Endosulfan I	0	10	1.66	1.69			0.84		1.68 UJ	1.67 UJ
Endosulfan II	0	10	1.66	1.69			0.84		1.68 UJ	1.67 UJ

Table A-12
Summary Statistics and Analytical Results for American Eel - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	GMP-AE-5001-0000-01-W 6/22/2001 DUPLICATE	GMP-AE-5001-0000-01-W 6/22/2001	GMP-AE-5002-0000-01-W 6/22/2001
Endosulfan Sulfate	0	10	1.66	1.69			0.84		1.68 UJ	1.67 UJ
Endrin	0	10	1.66	1.69			0.84		1.68 UJ	1.67 UJ
Endrin Aldehyde	0	10	1.66	1.69			0.84		1.68 UJ	1.67 UJ
Endrin Ketone	0	10	1.66	1.69			0.84		1.68 UJ	1.67 UJ
gamma-BHC	1	10	1.66	1.69	1.25	1.25	0.88		1.68 UJ	1.67 UJ
gamma-Chlordane	10	10			0.72	9.02	5.51		0.72 J	6.33 J
Heptachlor	0	10	1.66	1.69			0.84		1.68 UJ	1.67 UJ
Heptachlor Epoxide	9	10	1.68	1.68	0.64	2.6	1.16		1.68 UJ	0.79 J
Methoxychlor	0	10	1.66	1.69			0.84		1.68 UJ	1.67 UJ
Technical Chlordane	9	10	209.82	209.82	179.03	410.89	265.41		209.82 UJ	262.77 J
Toxaphene	0	10	41.44	42.1			20.86		41.96 UJ	41.63 UJ
Inorganics (mg/Kg)										
Aluminum	10	10			1.44	41.4	19.3		1.65	26.6
Antimony	2	10	0.034	0.034	0.000672	0.00265	0.0139		0.034 U	0.034 U
Arsenic	0	10	0.034	0.111			0.0347		0.034 U	0.0413 U
Barium	10	10			0.136	0.853	0.548		0.211	0.517
Beryllium	9	10	0.004	0.004	0.00279	0.00828	0.00473		0.0035 J	0.00543
Cadmium	10	10			0.0113	0.0581	0.0330		0.0449 J	0.0187 J
Chromium	3	10	0.269	0.269	0.0412	0.187	0.131		0.269 U	0.269 U
Cobalt	10	10			0.0203	0.0433	0.0332		0.0433 J	0.0297 J
Copper	10	10			0.559	1.16	0.804		0.964 J	0.559 J
Iron	10	10			12	55.5	35.7		12	39.7
Lead	4	10	0.022	0.022	0.102	1.47	0.214		0.022 U	0.022 U
Manganese	10	10			1.5	5.61	3.23		5.61 J	1.93 J
Mercury	6	10	0.031	0.0453	0.0216	0.227	0.0706		0.227	0.031 U
Mercury (methyl)	10	10			0.0253	0.234	0.0825		0.234	0.0365
Molybdenum	0	10	0.32	0.32			0.160		0.32 U	0.32 U
Nickel	7	10	0.32	0.32	0.0256	0.098	0.0903		0.0554 J	0.0698 J
Selenium	6	10	0.448	0.448	0.333	0.436	0.317		0.448 U	0.448 U
Silver	0	10	0.06	0.06			0.0300		0.06 U	0.06 U
Thallium	9	10	0.022	0.022	0.00108	0.00351	0.00313		0.00171 J	0.00108 J
Vanadium	3	10	0.179	0.179	0.00951	0.15	0.0821		0.179 U	0.0346 J
Zinc	10	10			21.6	53.3	33.4		30	21.6
Dioxins/Furans (ug/Kg)										
HCX	0	10	0.01985	0.03963			0.01094		0.03963 UJ	0.01993 UJ
TCX	0	0							R	R
2,3,7,8-TCDD	1	10	0.00014	0.00035	0.00045	0.00045	0.00015		0.00031 UJ	0.00045 J
1,2,3,7,8-PeCDD	0	10	0.00021	0.00053			0.00016		0.00028 UJ	0.00031 UJ
1,2,3,4,7,8-HxCDD	6	10	0.00008	0.00027	0.00013	0.00023	0.00014		0.00027 UJ	0.00012 UJ
1,2,3,6,7,8-HxCDD	9	10	0.00028	0.00028	0.00041	0.001	0.00068		0.00028 UJ	0.00061 J
1,2,3,7,8,9-HxCDD	9	10	0.00026	0.00026	0.00009	0.00022	0.00014		0.00026 UJ	0.0001 J
1,2,3,4,6,7,8-HpCDD	9	10	0.0011	0.0011	0.0005	0.00143	0.00098		0.0011 UJ	0.00076 J

Table A-12
Summary Statistics and Analytical Results for American Eel - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	GMP-AE-5001-0000-01-W 6/22/2001 DUPLICATE	GMP-AE-5001-0000-01-W 6/22/2001	GMP-AE-5002-0000-01-W 6/22/2001
OCDD	0	10	0.00063	0.00442			0.00107		0.00063 UJ	0.00228 UJ
2,3,7,8-TCDF	1	10	0.00004	0.00026	0.0003	0.0003	0.00010		0.00026 UJ	0.00012 UJ
1,2,3,7,8-PeCDF	1	10	0.0001	0.0004	0.00026	0.00026	0.00011		0.0004 UJ	0.00017 UJ
2,3,4,7,8-PeCDF	7	10	0.00038	0.00112	0.00016	0.00028	0.00025		0.00038 UJ	0.00018 J
1,2,3,4,7,8-HxCDF	1	10	0.00013	0.0003	0.00046	0.00046	0.00014		0.0003 UJ	0.00014 UJ
1,2,3,6,7,8-HxCDF	6	10	0.00011	0.0003	0.00021	0.0004	0.00019		0.0003 UJ	0.0004 J
2,3,4,6,7,8-HxCDF	0	10	0.00006	0.00032			0.00007		0.00032 UJ	0.0001 UJ
1,2,3,7,8,9-HxCDF	0	10	0.00005	0.00033			0.00007		0.00033 UJ	0.00005 UJ
1,2,3,4,6,7,8-HpCDF	7	10	0.0002	0.00048	0.00032	0.00064	0.00038		0.00048 UJ	0.00032 J
1,2,3,4,7,8,9-HpCDF	1	10	0.00013	0.00042	0.00017	0.00017	0.00011		0.00042 UJ	0.00017 UJ
OCDF	0	10	0.0001	0.00068			0.00014		0.00023 UJ	0.00024 UJ
Total TCDD	0	10	0.00014	0.00045			0.00013		0.00031 UJ	0.00045 UJ
Total PeCDD	0	10	0.00004	0.00053			0.00015		0.00004 UJ	0.00031 UJ
Total HxCDD	10	10			0.00006	0.00147	0.00095		0.00006 J	0.00083 J
Total HpCDD	5	10	0.0005	0.0011	0.00126	0.00203	0.00109		0.0011 UJ	0.00103 UJ
Total TCDF	0	10	0.00004	0.0003			0.00008		0.00026 UJ	0.00012 UJ
Total PeCDF	4	10	0.00017	0.00039	0.00053	0.0014	0.00044		0.00039 UJ	0.00018 UJ
Total HxCDF	1	10	0.00022	0.0009	0.00139	0.00139	0.00039		0.00031 UJ	0.00078 UJ
Total HpCDF	2	10	0.00044	0.0009	0.0014	0.00146	0.00056		0.00044 UJ	0.0014 J
Toxicity Equivalency (Dioxins, Furans, HCX)	9	9			0.000135	0.000662	0.000274			0.000662
PCB Congeners (ug/Kg)										
2-Monochlorobiphenyl (1)	0	1	0.00457	0.00457			0.00229		0.00457 UJ	
4-Chlorobiphenyl (3)	0	1	0.00481	0.00481			0.00241		0.00481 UJ	
2,2'-Dichlorobiphenyl (4)	0	1	0.00674	0.00674			0.00337		0.00674 UJ	
2,3-Dichlorobiphenyl (5)	0	1	0.01194	0.01194			0.00597		0.01194 UJ	
2,3'-Dichlorobiphenyl (6)	0	1	0.0023	0.0023			0.00115		0.0023 UJ	
2,4-Dichlorobiphenyl (7)	0	1	0.00991	0.00991			0.00496		0.00991 UJ	
2,4'-Dichlorobiphenyl (8)	0	1	0.01116	0.01116			0.00558		0.01116 UJ	
2,5-Dichlorobiphenyl (9)	0	1	0.00991	0.00991			0.00496		0.00991 UJ	
2,6-Dichlorobiphenyl (10)	0	1	0.00991	0.00991			0.00496		0.00991 UJ	
3,4-Dichlorobiphenyl (12)	0	1	0.0024	0.0024			0.00120		0.0024 UJ	
2,2',3'-Trichlorobiphenyl (16)	0	1	0.00709	0.00709			0.00355		0.00709 UJ	
2,2',4-Trichlorobiphenyl (17)	0	1	0.00713	0.00713			0.00357		0.00713 UJ	
2,2',5-Trichlorobiphenyl (18)	0	1	0.0155	0.0155			0.00775		0.0155 UJ	
2,2',6-Trichlorobiphenyl (19)	0	1	0.01981	0.01981			0.00991		0.01981 UJ	
2,3,3'-Trichlorobiphenyl (20)	0	1	0.06296	0.06296			0.03148		0.06296 UJ	
2,3,4'-Trichlorobiphenyl (22)	0	1	0.01416	0.01416			0.00708		0.01416 UJ	
2,3,6-Trichlorobiphenyl (24)	0	1	0.00156	0.00156			0.00078		0.00156 UJ	
2,3',4-Trichlorobiphenyl (25)	0	1	0.00188	0.00188			0.00094		0.00188 UJ	
2,3',5-Trichlorobiphenyl (26)	0	1	0.00688	0.00688			0.00344		0.00688 UJ	
2,4',5-Trichlorobiphenyl (31)	0	1	0.02371	0.02371			0.01186		0.02371 UJ	
2,4',6-Trichlorobiphenyl (32)	0	1	0.0052	0.0052			0.00260		0.0052 UJ	

Table A-12
Summary Statistics and Analytical Results for American Eel - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	GMP-AE-5001-0000-01-W 6/22/2001 DUPLICATE	GMP-AE-5001-0000-01-W 6/22/2001	GMP-AE-5002-0000-01-W 6/22/2001
2,2',3,3'-Tetrachlorobiphenyl (40)	0	1	0.00693	0.00693			0.00347		0.00693 UJ	
2,2',3,4'-Tetrachlorobiphenyl (42)	0	1	0.03461	0.03461			0.01731		0.03461 UJ	
2,2',3,5-Tetrachlorobiphenyl (43)	1	1			0.55698	0.55698	0.55698		0.55698 J	
2,2',3,5'-Tetrachlorobiphenyl (44)	1	1			0.23346	0.23346	0.23346		0.23346 J	
2,2',3,6-Tetrachlorobiphenyl (45)	0	1	0.00316	0.00316			0.00158		0.00316 UJ	
2,2',3,6'-Tetrachlorobiphenyl (46)	0	1	0.00068	0.00068			0.00034		0.00068 UJ	
2,2',4,5-Tetrachlorobiphenyl (48)	0	1	0.00355	0.00355			0.00178		0.00355 UJ	
2,2',4,5'-Tetrachlorobiphenyl (49)	1	1			0.10682	0.10682	0.10682		0.10682 J	
2,2',4,6-Tetrachlorobiphenyl (50)	0	1	0.00338	0.00338			0.00169		0.00338 UJ	
2,3,3',4'-Tetrachlorobiphenyl (56)	0	1	0.02139	0.02139			0.01070		0.02139 UJ	
2,3,3',6-Tetrachlorobiphenyl (59)	0	1	0.12411	0.12411			0.06206		0.12411 UJ	
2,3,4,4'-Tetrachlorobiphenyl (60)	1	1			0.05613	0.05613	0.05613		0.05613 J	
2,3,4,5-Tetrachlorobiphenyl (61)	0	1	0.19176	0.19176			0.09588		0.19176 UJ	
2,3,4',5-Tetrachlorobiphenyl (63)	1	1			0.01119	0.01119	0.01119		0.01119 J	
2,3,4',6-Tetrachlorobiphenyl (64)	1	1			0.23496	0.23496	0.23496		0.23496 J	
2,3',4,4'-Tetrachlorobiphenyl (66)	1	1			0.29932	0.29932	0.29932		0.29932 J	
3,3',4,4'-Tetrachlorobiphenyl (77)	0	1	0.002	0.002			0.00100		0.002 UJ	
3,4,4',5-Tetrachlorobiphenyl (81)	1	1			0.01732	0.01732	0.01732		0.01732 J	
2,2',3,3',4-Pentachlorobiphenyl (82)	0	1	0.04155	0.04155			0.02078		0.04155 UJ	
2,2',3,3',5-Pentachlorobiphenyl (83)	1	1			2.0983	2.0983	2.09830		2.0983 J	
2,2',3,3',6-Pentachlorobiphenyl (84)	0	1	0.05841	0.05841			0.02921		0.05841 UJ	
2,2',3,4,4'-Pentachlorobiphenyl (85)	1	1			0.8169	0.8169	0.81690		0.8169 J	
2,2',3,4,5-Pentachlorobiphenyl (86)	1	1			0.82842	0.82842	0.82842		0.82842 J	
2,2',3,4,6-Pentachlorobiphenyl (88)	1	1			0.16384	0.16384	0.16384		0.16384 J	
2,2',3,4,6'-Pentachlorobiphenyl (89)	0	1	0.09907	0.09907			0.04954		0.09907 UJ	
2,2',3,4',5-Pentachlorobiphenyl (90)	1	1			2.63568	2.63568	2.63568		2.63568 J	
2,2',3,5,5'-Pentachlorobiphenyl (92)	1	1			0.44191	0.44191	0.44191		0.44191 J	
2,2',3,5,6-Pentachlorobiphenyl (93)	0	1	0.20815	0.20815			0.10408		0.20815 UJ	
2,3,3',4,4'-Pentachlorobiphenyl (105)	1	1			1.17156	1.17156	1.17156		1.17156 J	
2,3,3',4,5-Pentachlorobiphenyl (106)	1	1			0.0741	0.0741	0.07410		0.0741 J	
2,3,3',4',5'-Pentachlorobiphenyl (108)	0	1	0.0088	0.0088			0.00440		0.0088 UJ	
2,3,3',4',6-Pentachlorobiphenyl (110)	1	1			2.13206	2.13206	2.13206		2.13206 J	
2,3,4,4',5-Pentachlorobiphenyl (114)	1	1			0.04858	0.04858	0.04858		0.04858 J	
2,3',4,4',5-Pentachlorobiphenyl (118)	1	1			3.86876	3.86876	3.86876		3.86876 J	
3,3',4,4',5-Pentachlorobiphenyl (126)	1	1			0.00911	0.00911	0.00911		0.00911 J	
2,2',3,3',4,4'-Hexachlorobiphenyl (128)	1	1			1.37304	1.37304	1.37304		1.37304 J	
2,2',3,3',4,5-Hexachlorobiphenyl (129)	1	1			9.115	9.115	9.11500		9.115 J	
2,2',3,3',4,5'-Hexachlorobiphenyl (130)	1	1			0.48176	0.48176	0.48176		0.48176 J	
2,2',3,3',4,6-Hexachlorobiphenyl (131)	1	1			0.01132	0.01132	0.01132		0.01132 J	
2,2',3,3',4,6'-Hexachlorobiphenyl (132)	0	1	0.09907	0.09907			0.04954		0.09907 UJ	
2,2',3,3',5,6-Hexachlorobiphenyl (134)	1	1			0.10184	0.10184	0.10184		0.10184 J	
2,2',3,3',5,6'-Hexachlorobiphenyl (135)	1	1			0.1797	0.1797	0.17970		0.1797 J	

Table A-12
Summary Statistics and Analytical Results for American Eel - Upstream

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	GMP-AE-5001-0000-01-W 6/22/2001 DUPLICATE	GMP-AE-5001-0000-01-W 6/22/2001	GMP-AE-5002-0000-01-W 6/22/2001
2,2',3,3',6,6'-Hexachlorobiphenyl (136)	1	1			0.03306	0.03306	0.03306		0.03306 J	
2,2',3,4,4',5-Hexachlorobiphenyl (137)	1	1			0.68596	0.68596	0.68596		0.68596 J	
2,2',3,4,5,5'-Hexachlorobiphenyl (141)	1	1			0.73784	0.73784	0.73784		0.73784 J	
2,2',3,4,5',6-Hexachlorobiphenyl (144)	0	1	0.09907	0.09907			0.04954		0.09907 UJ	
2,2',3,4',5,5'-Hexachlorobiphenyl (146)	1	1			1.30294	1.30294	1.30294		1.30294 J	
2,2',3,4',5,6-Hexachlorobiphenyl (147)	1	1			2.41158	2.41158	2.41158		2.41158 J	
2,2',4,4',5,5'-Hexachlorobiphenyl (153)	1	1			6.93522	6.93522	6.93522		6.93522 J	
2,3,3',4,4',5-Hexachlorobiphenyl (156)	1	1			0.59004	0.59004	0.59004		0.59004 J	
2,3,3',4,4',6-Hexachlorobiphenyl (158)	1	1			0.8064	0.8064	0.80640		0.8064 J	
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	1	1			0.256	0.256	0.25600		0.256 J	
3,3',4,4',5,5'-Hexachlorobiphenyl (169)	0	1	0.01674	0.01674			0.00837		0.01674 UJ	
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	1	1			0.8952	0.8952	0.89520		0.8952 J	
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)	1	1			0.24814	0.24814	0.24814		0.24814 J	
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)	1	1			0.28095	0.28095	0.28095		0.28095 J	
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)	1	1			0.20875	0.20875	0.20875		0.20875 J	
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)	1	1			0.04676	0.04676	0.04676		0.04676 J	
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)	0	1	0.00525	0.00525			0.00263		0.00525 UJ	
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)	1	1			0.49038	0.49038	0.49038		0.49038 J	
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)	1	1			0.53424	0.53424	0.53424		0.53424 J	
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)	1	1			2.11512	2.11512	2.11512		2.11512 J	
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)	0	1	0.19814	0.19814			0.09907		0.19814 UJ	
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)	1	1			0.6815	0.6815	0.68150		0.6815 J	
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)	1	1			0.00619	0.00619	0.00619		0.00619 J	
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)	1	1			0.00984	0.00984	0.00984		0.00984 J	
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	1	1			4.50206	4.50206	4.50206		4.50206 J	
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	1	1			0.04281	0.04281	0.04281		0.04281 J	
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)	1	1			0.29505	0.29505	0.29505		0.29505 J	
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	1	1			0.03907	0.03907	0.03907		0.03907 J	
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	1	1			0.59356	0.59356	0.59356		0.59356 J	
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	1	1			0.11501	0.11501	0.11501		0.11501 J	
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)	1	1			0.45216	0.45216	0.45216		0.45216 J	
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)	1	1			0.03535	0.03535	0.03535		0.03535 J	
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)	1	1			5.08098	5.08098	5.08098		5.08098 J	
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (200)	1	1			0.00624	0.00624	0.00624		0.00624 J	
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)	1	1			0.20776	0.20776	0.20776		0.20776 J	
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)	1	1			2.13978	2.13978	2.13978		2.13978 J	
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	0	1	0.03461	0.03461			0.01731		0.03461 UJ	
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	1	1			4.25638	4.25638	4.25638		4.25638 J	
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	1	1			0.38553	0.38553	0.38553		0.38553 J	
Decachlorobiphenyl (209)	1	1			2.08603	2.08603	2.08603		2.08603 J	
PCB Congeners, Total	1	1			66.58194	66.58194	66.58194		66.58194 J	
Toxicity Equivalency (PCB)	1	1			0.00174	0.00174	0.00174		0.00174	

Table A-12
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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	GMP-AE-5001-0000-01-W 6/22/2001 DUPLICATE	GMP-AE-5001-0000-01-W 6/22/2001	GMP-AE-5002-0000-01-W 6/22/2001
Other (%)										
Lipid_percent	11	11			4.34	19.8	13.6	4.56	4.34	13.4

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* 106(12):775-792.

Samples ending with:
W - whole body

Table A-12
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PARAMETER	GMP-AE-5003-0000-01-W 6/22/2001	GMP-AE-5004-0000-01-W 6/22/2001	GMP-AE-5005-0000-01-W 6/22/2001	GMP-AE-5006-0000-01-W 6/22/2001	GMP-AE-5007-0000-01-W 6/22/2001	GMP-AE-5008-0000-01-W 6/22/2001	GMP-AE-5009-0000-01-W 6/22/2001	GMP-AE-5010-0000-01-W 6/25/2001
Semivolatile Organics (ug/Kg)								
1,1'-Biphenyl	1.78 UJ	1.26 UJ	1.25 UJ	1.25 UJ	1.25 UJ	1.24 UJ	1.24 UJ	1.26 UJ
2-Methylnaphthalene	2.53	3.07	4.28	2.3	3.81	5.51	4.68	2.57
Acenaphthene	2.36	4.03	2.88	2.47	2.73	1.85	1.82	1.84
Acenaphthylene	1.24 UJ	1.19 J	1.55	1.29	1.14 J	1.11 J	1.07 J	1.26 UJ
Anthracene	1.24 UJ	1.13 J	1.12 J	0.97 J	1.28	1.05 J	0.82 J	1.26 UJ
Benzo(a)anthracene	1.24 UJ	1.26 UJ	2.05 UJ	1.47 UJ	3.07 UJ	3.22 UJ	1.49 UJ	1.26 UJ
Benzo(a)pyrene	1.24 UJ	1.34 UJ	2.8 UJ	2.3 UJ	3.87 UJ	4.57	1.76 UJ	1.26 UJ
Benzo(b)fluoranthene	1.24 UJ	1.92 UJ	3.14 UJ	2.31 UJ	3.99 UJ	5.33	2.15 UJ	1.26 UJ
Benzo(g,h,i)perylene	1.84 UJ	1.68 UJ	3.05 UJ	2.67 UJ	4.64 UJ	4.85 UJ	1.83 UJ	1.26 UJ
Benzo(k)fluoranthene	1.24 UJ	1.66 UJ	3.16 UJ	2.33 UJ	3.82 UJ	4.52	1.9 UJ	1.26 UJ
Chrysene	1.37 UJ	2.6 UJ	3.67 UJ	2.78 UJ	4.56 UJ	5.58	2.48 UJ	1.26 UJ
Dibenzo(a,h)anthracene	1.24 UJ	1.26 UJ	1.25 UJ	1.25 UJ	1.56	1.42	1.24 UJ	1.26 UJ
Dibenzofuran	1.24 UJ	1.26 UJ	1.25 UJ	1.25 UJ	1.25 UJ	1.24 UJ	1.24 UJ	1.26 UJ
Fluoranthene	3.79 UJ	7.86	9.06	8.45	6.45	8.74	5.37 UJ	4.14 UJ
Fluorene	1.44	1.48	0.92 J	1.12 J	1.02 J	1.08 J	0.95 J	0.76 J
Indeno(1,2,3-cd)pyrene	1.26 UJ	1.73 UJ	3.19 UJ	2.34 UJ	3.35 UJ	4.32	1.78 UJ	1.26 UJ
Naphthalene	4.83 UJ	4.27 UJ	5.62 UJ	4.19 UJ	5.45 UJ	6.89	6.11	4.27 UJ
Phenanthrene	4.06 UJ	6.89	5.06 UJ	4.5 UJ	4.68 UJ	6.23	3.93 UJ	2.31 UJ
Pyrene	2.3 UJ	3.95 UJ	4.5 UJ	4.18 UJ	6.09 UJ	6.68 UJ	3.59 UJ	1.41 UJ
Total PAH	6.32	25.66 J	19.81 J	16.6 J	18 J	58.2 J	15.44 J	5.17 J
Pesticides/PCBs (ug/Kg)								
4,4'-DDD	12.71 J	14.79 J	14.13 J	16.17 J	16.3 J	10.25 J	10.33 J	14.25 J
4,4'-DDE	28.6 J	42.67 J	25.24 J	37.22 J	43.9 J	23.39 J	20.61 J	24.21 J
4,4'-DDT	3.11 J	1.47 J	4.2 J	0.71 J	2.78 J	1.04 J	1.03 J	2.98 J
Aldrin	1.66 UJ	1.69 UJ	1.68 UJ	1.67 UJ	1.66 UJ	1.66 UJ	1.66 UJ	1.68 UJ
alpha-BHC	1.66 UJ	1.69 UJ	1.68 UJ	1.67 UJ	1.67 UJ	1.66 UJ	1.66 UJ	1.69 UJ
alpha-Chlordane	13.29 J	18.37 J	13.36 J	19.74 J	13.67 J	9.3 J	11.41 J	22.2 J
Aroclor, Total	180.36 J	388.36 J	338.48 J	438.7 J	293.89 J	257.85 J	327.13 J	205.78 J
Aroclor-1016	20.73 UJ	21.05 UJ	20.91 UJ	20.84 UJ	20.77 UJ	20.72 UJ	20.72 UJ	21.01 UJ
Aroclor-1221	20.73 UJ	21.05 UJ	20.91 UJ	20.84 UJ	20.77 UJ	20.72 UJ	20.72 UJ	21.01 UJ
Aroclor-1232	20.73 UJ	21.05 UJ	20.91 UJ	20.84 UJ	20.77 UJ	20.72 UJ	20.72 UJ	21.01 UJ
Aroclor-1242	20.73 UJ	21.05 UJ	20.91 UJ	20.84 UJ	20.77 UJ	20.72 UJ	20.72 UJ	21.01 UJ
Aroclor-1248	20.73 UJ	21.05 UJ	20.91 UJ	20.84 UJ	20.77 UJ	20.72 UJ	20.72 UJ	21.01 UJ
Aroclor-1254	116.33 J	269.15 J	219.4 J	292.8 J	197.24 J	173.72 J	201.45 J	147.13 J
Aroclor-1260	20.73 UJ	21.05 UJ	20.91 UJ	20.84 UJ	20.77 UJ	20.72 UJ	20.72 UJ	21.01 UJ
Aroclor-1268	64.03 J	119.21 J	119.08 J	145.91 J	96.65 J	84.13 J	125.68 J	58.66 J
beta-BHC	1.66 UJ	1.69 UJ	1.68 UJ	1.67 UJ	1.67 UJ	1.66 UJ	1.66 UJ	1.68 UJ
delta-BHC	1.66 UJ	1.69 UJ	1.68 UJ	1.67 UJ	1.67 UJ	1.66 UJ	1.66 UJ	1.69 UJ
Dieldrin	4.69 J	3.29 J	3.14 J	3.7 J	3.51 J	2.2 J	2.25 J	8.85 J
Endosulfan I	1.66 UJ	1.69 UJ	1.68 UJ	1.67 UJ	1.67 UJ	1.66 UJ	1.66 UJ	1.68 UJ
Endosulfan II	1.66 UJ	1.69 UJ	1.68 UJ	1.67 UJ	1.66 UJ	1.66 UJ	1.66 UJ	1.68 UJ

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Endosulfan Sulfate	1.66 UJ	1.69 UJ	1.68 UJ	1.67 UJ	1.66 UJ	1.66 UJ	1.66 UJ	1.68 UJ
Endrin	1.66 UJ	1.69 UJ	1.68 UJ	1.67 UJ	1.67 UJ	1.66 UJ	1.66 UJ	1.68 UJ
Endrin Aldehyde	1.66 UJ	1.69 UJ	1.68 UJ	1.67 UJ	1.67 UJ	1.66 UJ	1.66 UJ	1.68 UJ
Endrin Ketone	1.66 UJ	1.69 UJ	1.68 UJ	1.67 UJ	1.67 UJ	1.66 UJ	1.66 UJ	1.68 UJ
gamma-BHC	1.66 UJ	1.69 UJ	1.68 UJ	1.67 UJ	1.66 UJ	1.66 UJ	1.66 UJ	1.25 J
gamma-Chlordane	4.19 J	7.08 J	6.35 J	9.02 J	4.74 J	3.92 J	4.81 J	7.92 J
Heptachlor	1.66 UJ	1.69 UJ	1.68 UJ	1.67 UJ	1.66 UJ	1.66 UJ	1.66 UJ	1.68 UJ
Heptachlor Epoxide	1.35 J	1.22 J	1.06 J	1.1 J	1.04 J	0.64 J	0.99 J	2.6 J
Methoxychlor	1.66 UJ	1.69 UJ	1.68 UJ	1.67 UJ	1.67 UJ	1.66 UJ	1.66 UJ	1.69 UJ
Technical Chlordane	271.56 J	325.33 J	275.67 J	366.02 J	259.78 J	179.03 J	198.13 J	410.89 J
Toxaphene	41.47 UJ	42.1 UJ	41.82 UJ	41.69 UJ	41.55 UJ	41.44 UJ	41.44 UJ	42.02 UJ
Inorganics (mg/Kg)								
Aluminum	4.08	33.1	41.4	23.3	9.67	26.2	25.9	1.44
Antimony	0.034 UJ	0.00265 J	0.000672 J	0.034 UJ	0.034 UJ	0.034 UJ	0.034 UJ	0.034 UJ
Arsenic	0.0905 UJ	0.0506 UJ	0.0733 UJ	0.0649 UJ	0.0913 UJ	0.111 UJ	0.0906 UJ	0.0766 UJ
Barium	0.553	0.735	0.853	0.486	0.462 J	0.838 J	0.692 J	0.136 J
Beryllium	0.00279 J	0.00626	0.00828	0.00479	0.00357 J	0.00624	0.0044	0.004 U
Cadmium	0.0572 J	0.0271 J	0.0581 J	0.0113 J	0.0217 J	0.041 J	0.0294 J	0.0203 J
Chromium	0.269 UJ	0.187 J	0.139 J	0.269 UJ	0.269 UJ	0.269 UJ	0.269 UJ	0.0412 J
Cobalt	0.0401 J	0.0404 J	0.0428 J	0.034 J	0.0222 J	0.0348 J	0.0246 J	0.0203 J
Copper	0.77 J	0.937 J	1.18 J	0.687 J	0.573	0.661	0.986	0.724
Iron	26.1	54.6	55.5	44.4	30.9	42.5	33.3	17.9 J
Lead	0.022 UJ	0.022 UJ	0.022 UJ	0.022 UJ	0.243	1.47	0.263	0.102 J
Manganese	5.46 J	3.23 J	1.77 J	2.93 J	3.34	2.78	3.71	1.5 J
Mercury	0.176	0.0453 UJ	0.0421 UJ	0.043 UJ	0.0485 J	0.0216 J	0.0481 J	0.104 J
Mercury (methyl)	0.19	0.043	0.0336	0.0371	0.0543	0.0253	0.052	0.119
Molybdenum	0.32 UJ	0.32 UJ	0.32 UJ	0.32 UJ	0.32 UJ	0.32 UJ	0.32 UJ	0.32 UJ
Nickel	0.048 J	0.098 J	0.0592 J	0.0673 J	0.32 UJ	0.32 UJ	0.32 UJ	0.0256 J
Selenium	0.448 UJ	0.448 UJ	0.436 J	0.403 J	0.334 J	0.388 J	0.377 J	0.333 J
Silver	0.06 UJ	0.06 UJ	0.06 UJ	0.06 UJ	0.06 UJ	0.06 UJ	0.06 UJ	0.06 UJ
Thallium	0.00272 J	0.00212 J	0.00351 J	0.00223 J	0.00212 J	0.00135 J	0.00345 J	0.022 UJ
Vanadium	0.179 UJ	0.179 UJ	0.15 J	0.179 UJ	0.179 UJ	0.179 UJ	0.179 UJ	0.00951 J
Zinc	52	31	22.4	25.7	37.1 J	53.3 J	30 J	30.5
Dioxins/Furans (ug/Kg)								
HCX	0.01992 UJ	0.01997 UJ	0.01988 UJ	0.01989 UJ	0.01998 UJ	0.0199 UJ	0.01993 UJ	0.01985 UJ
TCX	R	R	R	R	R	R	R	R
2,3,7,8-TCDD	0.00014 UJ	0.00035 UJ	0.00026 UJ	0.00031 UJ	0.00016 UJ	0.00021 UJ	0.00015 UJ	0.00018 UJ
1,2,3,7,8-PeCDD	0.00021 UJ	0.00029 UJ	0.00041 UJ	0.00045 UJ	0.00026 UJ	0.00027 UJ	0.00023 UJ	0.00053 UJ
1,2,3,4,7,8-HxCDD	0.00008 UJ	0.00023 J	0.00018 J	0.00023 J	0.00013 J	0.00016 J	0.0001 UJ	0.00019 J
1,2,3,6,7,8-HxCDD	0.00041 J	0.00086 J	0.00073 J	0.001 J	0.00079 J	0.00069 J	0.00062 J	0.00094 J
1,2,3,7,8,9-HxCDD	0.00009 J	0.00017 J	0.00021 J	0.00022 J	0.00014 J	0.0001 J	0.00014 J	0.00012 J
1,2,3,4,6,7,8-HpCDD	0.0005 J	0.00106	0.00138 J	0.00133 J	0.00082 J	0.00143 J	0.00083 J	0.00116 J

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PARAMETER	GMP-AE-5003-0000-01-W 6/22/2001	GMP-AE-5004-0000-01-W 6/22/2001	GMP-AE-5005-0000-01-W 6/22/2001	GMP-AE-5006-0000-01-W 6/22/2001	GMP-AE-5007-0000-01-W 6/22/2001	GMP-AE-5008-0000-01-W 6/22/2001	GMP-AE-5009-0000-01-W 6/22/2001	GMP-AE-5010-0000-01-W 6/25/2001
OCDD	0.00082 UJ	0.00294 UJ	0.0031 UJ	0.00224 UJ	0.00136 UJ	0.00442 UJ	0.00214 UJ	0.00143 UJ
2,3,7,8-TCDF	0.00012 UJ	0.00011 UJ	0.0001 UJ	0.00017 UJ	0.0002 UJ	0.0003 J	0.00018 UJ	0.00004 UJ
1,2,3,7,8-PeCDF	0.00015 UJ	0.0002 UJ	0.00019 UJ	0.0001 UJ	0.00017 UJ	0.00026 J	0.00014 UJ	0.00019 UJ
2,3,4,7,8-PeCDF	0.00016 J	0.00024 J	0.00027 J	0.00028 J	0.00017 J	0.00112 UJ	0.00016 J	0.00059 UJ
1,2,3,4,7,8-HxCDF	0.00013 UJ	0.00026 UJ	0.00025 UJ	0.00025 UJ	0.00019 UJ	0.00046 J	0.00016 UJ	0.00018 UJ
1,2,3,6,7,8-HxCDF	0.00011 UJ	0.00027 J	0.00022 J	0.00026 J	0.00013 UJ	0.00024 J	0.00014 UJ	0.00021 J
2,3,4,6,7,8-HxCDF	0.00006 UJ	0.00016 UJ	0.00015 UJ	0.00016 UJ	0.0001 UJ	0.00009 UJ	0.0001 UJ	0.00014 UJ
1,2,3,7,8,9-HxCDF	0.00012 UJ	0.00007 UJ	0.00012 UJ	0.00009 UJ	0.00015 UJ	0.00013 UJ	0.00013 UJ	0.00012 UJ
1,2,3,4,6,7,8-HpCDF	0.0002 UJ	0.00049 J	0.00046 J	0.00048 J	0.00027 UJ	0.00064 J	0.00037 J	0.00054 J
1,2,3,4,7,8,9-HpCDF	0.00016 UJ	0.00016 UJ	0.00016 UJ	0.00016 UJ	0.00015 UJ	0.00017 J	0.00013 UJ	0.0003 UJ
OCDF	0.00018 UJ	0.00023 UJ	0.00038 UJ	0.00021 UJ	0.0001 UJ	0.00068 UJ	0.00032 UJ	0.00021 UJ
Total TCDD	0.00014 UJ	0.00035 UJ	0.00026 UJ	0.00031 UJ	0.00016 UJ	0.00021 UJ	0.00015 UJ	0.00018 UJ
Total PeCDD	0.00021 UJ	0.00029 UJ	0.00041 UJ	0.00045 UJ	0.00026 UJ	0.00027 UJ	0.00023 UJ	0.00053 UJ
Total HxCDD	0.00059 J	0.00126 J	0.00112 J	0.00147 J	0.00106 J	0.00095 J	0.00066 J	0.00125 J
Total HpCDD	0.0005 UJ	0.00136 J	0.00176 J	0.00133 J	0.00062 UJ	0.00203 J	0.00108 UJ	0.00126 J
Total TCDF	0.00012 UJ	0.00011 UJ	0.0001 UJ	0.00017 UJ	0.0002 UJ	0.0003 UJ	0.00018 UJ	0.00004 UJ
Total PeCDF	0.00082 J	0.00024 UJ	0.0014 J	0.00028 UJ	0.00017 UJ	0.00053 J	0.00018 UJ	0.00093 J
Total HxCDF	0.00022 UJ	0.00069 UJ	0.0009 UJ	0.00076 UJ	0.00029 UJ	0.00139 J	0.00056 UJ	0.00053 UJ
Total HpCDF	0.0009 UJ	0.00085 UJ	0.00065 UJ	0.00071 UJ	0.00069 UJ	0.00145 J	0.00051 UJ	0.00074 UJ
Toxicity Equivalency (Dioxins, Furans, HCX)	0.000135	0.000289	0.000287	0.000329	0.000199	0.000023	0.000168	0.000163
PCB Congeners (ug/Kg)								
2-Monochlorobiphenyl (1)								
4-Chlorobiphenyl (3)								
2,2'-Dichlorobiphenyl (4)								
2,3-Dichlorobiphenyl (5)								
2,3'-Dichlorobiphenyl (6)								
2,4-Dichlorobiphenyl (7)								
2,4'-Dichlorobiphenyl (8)								
2,5-Dichlorobiphenyl (9)								
2,6-Dichlorobiphenyl (10)								
3,4-Dichlorobiphenyl (12)								
2,2',3'-Trichlorobiphenyl (16)								
2,2',4-Trichlorobiphenyl (17)								
2,2',5-Trichlorobiphenyl (18)								
2,2',6-Trichlorobiphenyl (19)								
2,3,3'-Trichlorobiphenyl (20)								
2,3,4'-Trichlorobiphenyl (22)								
2,3,6-Trichlorobiphenyl (24)								
2,3',4-Trichlorobiphenyl (25)								
2,3',5-Trichlorobiphenyl (26)								
2,4',5-Trichlorobiphenyl (31)								
2,4',6-Trichlorobiphenyl (32)								

Table A-12
Summary Statistics and Analytical Results for American Eel - Upstream

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PARAMETER	GMP-AE-5003-0000-01-W 6/22/2001	GMP-AE-5004-0000-01-W 6/22/2001	GMP-AE-5005-0000-01-W 6/22/2001	GMP-AE-5006-0000-01-W 6/22/2001	GMP-AE-5007-0000-01-W 6/22/2001	GMP-AE-5008-0000-01-W 6/22/2001	GMP-AE-5009-0000-01-W 6/22/2001	GMP-AE-5010-0000-01-W 6/25/2001
2,2',3,3'-Tetrachlorobiphenyl (40)								
2,2',3,4'-Tetrachlorobiphenyl (42)								
2,2',3,5-Tetrachlorobiphenyl (43)								
2,2',3,5'-Tetrachlorobiphenyl (44)								
2,2',3,6-Tetrachlorobiphenyl (45)								
2,2',3,6'-Tetrachlorobiphenyl (46)								
2,2',4,5-Tetrachlorobiphenyl (48)								
2,2',4,5'-Tetrachlorobiphenyl (49)								
2,2',4,6-Tetrachlorobiphenyl (50)								
2,3,3',4'-Tetrachlorobiphenyl (56)								
2,3,3',6-Tetrachlorobiphenyl (59)								
2,3,4,4'-Tetrachlorobiphenyl (60)								
2,3,4,5-Tetrachlorobiphenyl (61)								
2,3,4',5-Tetrachlorobiphenyl (63)								
2,3,4',6-Tetrachlorobiphenyl (64)								
2,3',4,4'-Tetrachlorobiphenyl (66)								
3,3',4,4'-Tetrachlorobiphenyl (77)								
3,4,4',5-Tetrachlorobiphenyl (81)								
2,2',3,3',4-Pentachlorobiphenyl (82)								
2,2',3,3',5-Pentachlorobiphenyl (83)								
2,2',3,3',6-Pentachlorobiphenyl (84)								
2,2',3,4,4'-Pentachlorobiphenyl (85)								
2,2',3,4,5-Pentachlorobiphenyl (86)								
2,2',3,4,6-Pentachlorobiphenyl (88)								
2,2',3,4,6'-Pentachlorobiphenyl (89)								
2,2',3,4',5-Pentachlorobiphenyl (90)								
2,2',3,5,5'-Pentachlorobiphenyl (92)								
2,2',3,5,6-Pentachlorobiphenyl (93)								
2,3,3',4,4'-Pentachlorobiphenyl (105)								
2,3,3',4,5-Pentachlorobiphenyl (106)								
2,3,3',4',5'-Pentachlorobiphenyl (108)								
2,3,3',4',6-Pentachlorobiphenyl (110)								
2,3,4,4',5-Pentachlorobiphenyl (114)								
2,3',4,4',5-Pentachlorobiphenyl (118)								
3,3',4,4',5-Pentachlorobiphenyl (126)								
2,2',3,3',4,4'-Hexachlorobiphenyl (128)								
2,2',3,3',4,5-Hexachlorobiphenyl (129)								
2,2',3,3',4,5'-Hexachlorobiphenyl (130)								
2,2',3,3',4,6-Hexachlorobiphenyl (131)								
2,2',3,3',4,6'-Hexachlorobiphenyl (132)								
2,2',3,3',5,6-Hexachlorobiphenyl (134)								
2,2',3,3',5,6'-Hexachlorobiphenyl (135)								

Table A-12
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2,2',3,3',6,6'-Hexachlorobiphenyl (136)								
2,2',3,4,4',5-Hexachlorobiphenyl (137)								
2,2',3,4,5,5'-Hexachlorobiphenyl (141)								
2,2',3,4,5',6-Hexachlorobiphenyl (144)								
2,2',3,4',5,5'-Hexachlorobiphenyl (146)								
2,2',3,4',5,6-Hexachlorobiphenyl (147)								
2,2',4,4',5,5'-Hexachlorobiphenyl (153)								
2,3,3',4,4',5-Hexachlorobiphenyl (156)								
2,3,3',4,4',6-Hexachlorobiphenyl (158)								
2,3',4,4',5,5'-Hexachlorobiphenyl (167)								
3,3',4,4',5,5'-Hexachlorobiphenyl (169)								
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)								
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)								
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)								
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)								
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)								
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)								
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)								
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)								
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)								
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)								
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)								
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)								
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)								
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)								
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)								
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)								
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)								
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)								
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)								
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)								
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)								
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)								
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (200)								
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)								
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)								
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)								
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl								
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl								
Decachlorobiphenyl (209)								
PCB Congeners, Total								
Toxicity Equivalency (PCB)								

Table A-12
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PARAMETER	GMP-AE-5003-0000-01-W 6/22/2001	GMP-AE-5004-0000-01-W 6/22/2001	GMP-AE-5005-0000-01-W 6/22/2001	GMP-AE-5006-0000-01-W 6/22/2001	GMP-AE-5007-0000-01-W 6/22/2001	GMP-AE-5008-0000-01-W 6/22/2001	GMP-AE-5009-0000-01-W 6/22/2001	GMP-AE-5010-0000-01-W 6/25/2001
Other (%)								
Lipid_percent	13.2	15.6	17	18.7	16.9	12.1	13.8	19.8

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* 106(12):775-792.

Samples ending with:
W - whole body

Table A-13
Summary Statistics and Analytical Results for Largemouth Bass - Upstream

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Centredale Manor Restoration Project Superfund Site
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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	GMP-LB-5001-0000-01-F 6/22/2001	GMP-LB-5001-0000-01-O 6/22/2001	GMP-LB-5001-0000-01-W 6/22/2001
Semivolatile Organics (ug/Kg)										
1,1'-Biphenyl	29	31	0.02	0.65	0.07	0.56	0.21	0.21 J	0.22 J	0.21 J
2-Methylnaphthalene	24	31	0.62	1.89	0.93	24.18	4.09	1.89 U	1.76	1.21
Acenaphthene	24	31	0.62	1.89	0.1	0.79	0.46	1.89 U	0.52 J	0.35 J
Acenaphthylene	25	31	0.62	1.89	0.1	1.52	0.46	1.89 U	0.24 J	0.16 J
Anthracene	31	31			0.07	0.82	0.37	0.15 J	0.41 J	0.33 J
Benzo(a)anthracene	21	31	0.62	1.84	0.04	0.5	0.26	0.14 J	0.5 J	0.39 J
Benzo(a)pyrene	10	31	0.62	1.89	0.08	0.63	0.37	1.89 U	0.63	0.43
Benzo(b)fluoranthene	12	31	0.62	1.89	0.09	0.84	0.39	1.89 U	0.84	0.58
Benzo(g,h,i)perylene	4	31	0.62	1.89	0.39	0.62	0.41	1.89 U	0.57 J	0.39 J
Benzo(k)fluoranthene	12	31	0.62	1.89	0.06	0.77	0.38	1.89 U	0.77	0.53
Chrysene	28	31	0.02	1.84	0.05	0.97	0.30	0.24 J	0.97	0.74
Dibenzo(a,h)anthracene	4	31	0.62	1.89	0.1	0.29	0.37	1.89 U	0.15 J	0.1 J
Dibenzofuran	31	31			0.06	0.56	0.27	0.19 J	0.42 J	0.35 J
Fluoranthene	28	31	1.8	1.89	0.28	3.6	1.56	1.89 U	2.61	1.79
Fluorene	31	31			0.15	1.67	0.69	0.31 J	1.02	0.8
Indeno(1,2,3-cd)pyrene	16	31	0.62	1.89	0.06	0.68	0.33	1.89 U	0.68	0.46
Naphthalene	20	31	0.63	2.72	1.06	16.13	3.23	1.89 U	1.83	1.26
Phenanthrene	28	31	1.8	1.89	0.4	5.94	2.41	1.89 U	3.88	2.67
Pyrene	15	31	0.62	1.89	0.5	2.01	0.74	1.89 U	1.61 J	1.11 J
Total PAH	31	31			0.75	58.28	14.33	1.24 J	19.63 J	13.89 J
Pesticides/PCBs (ug/Kg)										
4,4'-DDD	31	31			0.42	19.11	3.69	0.73 J	6.54 J	4.73
4,4'-DDE	31	31			1.44	211.13	53.05	6.76	211.13 J	147.33 D
4,4'-DDT	30	31	0.74	0.74	0.1	3.51	1.39	0.2 J	3.09 J	2.19
Aldrin	0	31	0.5	1.51			0.32	1.51 U	0.5 UJ	0.82 U
alpha-BHC	0	31	0.5	1.52			0.32	1.52 U	0.5 UJ	0.82 U
alpha-Chlordane	31	31			0.27	8.72	2.78	0.27 J	2.52 J	1.82
Aroclor, Total	31	31			14.81	941.17	248.89	70.31 J	572.01 J	415.39
Aroclor-1016	0	31	6.2	18.89			3.97	18.89 U	6.24 UJ	10.19 U
Aroclor-1221	0	31	6.2	18.89			3.97	18.89 U	6.24 UJ	10.19 U
Aroclor-1232	0	31	6.2	18.89			3.97	18.89 U	6.24 UJ	10.19 U
Aroclor-1242	0	31	6.2	18.89			3.97	18.89 U	6.24 UJ	10.19 U
Aroclor-1248	0	31	6.2	18.89			3.97	18.89 U	6.24 UJ	10.19 U
Aroclor-1254	31	31			9.74	784.84	186.81	36.19	463.07 J	329.81 D
Aroclor-1260	0	31	6.2	18.89			3.97	18.89 U	6.24 UJ	10.19 U
Aroclor-1268	31	31			5.06	158.41	62.07	34.12	108.94 J	85.59 D
beta-BHC	0	31	0.5	1.51			0.32	1.51 U	0.5 UJ	0.82 U
delta-BHC	0	31	0.5	1.52			0.32	1.52 U	0.5 UJ	0.82 U

Table A-13
Summary Statistics and Analytical Results for Largemouth Bass - Upstream

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	GMP-LB-5001-0000-01-F 6/22/2001	GMP-LB-5001-0000-01-O 6/22/2001	GMP-LB-5001-0000-01-W 6/22/2001
Dieldrin	29	31	1.48	1.51	0.12	1.46	0.73	1.51 U	1.17 J	0.81 J
Endosulfan I	0	31	0.5	1.51			0.32	1.51 U	0.5 UJ	0.82 U
Endosulfan II	0	31	0.5	1.51			0.32	1.51 U	0.5 UJ	0.82 U
Endosulfan Sulfate	0	31	0.5	1.51			0.32	1.51 U	0.5 UJ	0.82 U
Endrin	0	31	0.5	1.51			0.32	1.51 U	0.5 UJ	0.82 U
Endrin Aldehyde	0	31	0.5	1.51			0.32	1.51 U	0.5 UJ	0.82 U
Endrin Ketone	0	31	0.5	1.51			0.32	1.51 U	0.5 UJ	0.82 U
gamma-BHC	7	31	0.5	1.51	0.02	0.04	0.26	1.51 U	0.04 J	0.02 J
gamma-Chlordane	29	31	1.48	1.52	0.1	3.54	1.16	1.52 U	0.94 J	0.64 J
Heptachlor	0	31	0.5	1.51			0.32	1.51 U	0.5 UJ	0.82 U
Heptachlor Epoxide	0	31	0.5	1.51			0.32	1.51 U	0.5 UJ	0.82 U
Methoxychlor	2	31	0.5	1.52	0.04	0.05	0.30	1.52 U	0.5 UJ	0.82 U
Technical Chlordane	28	31	179.75	188.88	6.62	85.6	46.31	188.88 U	63.53 J	43.7 J
Toxaphene	0	31	6.49	37.78			7.77	37.78 U	12.47 UJ	20.37 U
Inorganics (mg/Kg)										
Aluminum	22	30	0.222	1.12	0.928	10.9	3.09	0.549 U	8.82	6.07
Antimony	0	30	0.034	0.034			0.0170	0.034 U	0.034 U	0.034 U
Arsenic	0	30	0.034	0.107			0.0246	0.0459 U	0.0627 U	0.0575 U
Barium	24	30	0.0126	0.0517	0.0597	2.47	0.647	0.0702 J	1.04 J	0.737 J
Beryllium	20	30	0.004	0.004	0.000244	0.0101	0.00365	0.004 U	0.00747	0.00514
Cadmium	16	30	0.2	0.2	0.00853	0.0312	0.0555	0.2 U	0.0168 J	0.0116 J
Chromium	9	30	0.269	0.269	0.0579	0.237	0.144	0.269 U	0.183 J	0.126 J
Cobalt	30	30			0.00561	0.0553	0.0275	0.00681 J	0.0444 J	0.0327 J
Copper	30	30			0.205	2.94	0.724	0.218	0.724	0.566
Iron	29	30	2.14	2.14	1.62	128	22.1	2.02	28.8	20.4
Lead	20	30	0.00424	0.022	0.0237	0.129	0.0412	0.00424 U	0.0757	0.0521
Manganese	30	30			0.102	9.64	3.03	0.206	3.47	2.45
Mercury	30	30			0.114	0.708	0.327	0.365 J	0.218 J	0.264 J
Mercury (methyl)	30	30			0.106	0.652	0.327	0.375	0.211	0.262
Molybdenum	4	30	0.32	0.32	0.0182	0.0513	0.143	0.32 U	0.32 U	0.32 U
Nickel	7	30	0.32	0.32	0.039	1.47	0.201	0.32 U	0.32 U	0.32 U
Selenium	27	30	0.448	0.448	0.154	0.345	0.240	0.17 J	0.293 J	0.255 J
Silver	5	30	0.06	0.06	0.0141	0.0736	0.0306	0.06 U	0.06 U	0.06 U
Thallium	30	30			0.00137	0.0082	0.00384	0.00269 J	0.00507 J	0.00433 J
Vanadium	4	30	0.179	0.179	0.000427	0.0334	0.0795	0.179 UJ	0.179 U	0.179 U
Zinc	30	30			4.03	23.6	13.3	5.43 J	18.7 J	14.6 J
Dioxins/Furans (ug/Kg)										
HCX	0	30	0.01989	0.03979			0.01094	0.0397 UJ	0.01996 UJ	0.02612 UJ
TCX	0	0						R	R	R

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	GMP-LB-5001-0000-01-F 6/22/2001	GMP-LB-5001-0000-01-O 6/22/2001	GMP-LB-5001-0000-01-W 6/22/2001
2,3,7,8-TCDD	20	30	0.00004	0.0002	0.00011	0.00083	0.00020	0.0002 UJ	0.00025 J	0.00017 J
1,2,3,7,8-PeCDD	8	30	0.0001	0.00043	0.00009	0.00036	0.00013	0.00013 UJ	0.0003 UJ	0.00025 UJ
1,2,3,4,7,8-HxCDD	4	30	0.00008	0.00057	0.00003	0.00006	0.00009	0.00008 UJ	0.00023 UJ	0.00018 UJ
1,2,3,6,7,8-HxCDD	12	30	0.00008	0.00055	0.00009	0.00023	0.00012	0.00008 UJ	0.00013 J	0.00009 J
1,2,3,7,8,9-HxCDD	0	30	0.00008	0.00052			0.00009	0.00008 UJ	0.00023 UJ	0.00018 UJ
1,2,3,4,6,7,8-HpCDD	2	30	0.00006	0.00131	0.00055	0.00088	0.00023	0.00019 UJ	0.00017 UJ	0.00018 UJ
OCDD	2	30	0.00015	0.00073	0.01035	0.01642	0.00106	0.00063 UJ	0.00049 UJ	0.00053 UJ
2,3,7,8-TCDF	20	30	0.00003	0.00013	0.00008	0.00047	0.00019	0.0001 UJ	0.00038 J	0.00026 J
1,2,3,7,8-PeCDF	12	30	0.00011	0.00018	0.00003	0.00013	0.00007	0.00015 UJ	0.00005 J	0.00003 J
2,3,4,7,8-PeCDF	12	30	0.00002	0.00019	0.00006	0.00028	0.00010	0.00015 UJ	0.00019 UJ	0.00018 UJ
1,2,3,4,7,8-HxCDF	0	30	0.00003	0.00028			0.00005	0.00009 UJ	0.00009 UJ	0.00009 UJ
1,2,3,6,7,8-HxCDF	0	30	0.00001	0.00028			0.00005	0.00001 UJ	0.00004 UJ	0.00003 UJ
2,3,4,6,7,8-HxCDF	2	30	0.00001	0.00028	0.00004	0.00007	0.00006	0.00001 UJ	0.00019 UJ	0.00013 UJ
1,2,3,7,8,9-HxCDF	2	30	0.00001	0.00032	0.00002	0.00003	0.00007	0.00001 UJ	0.00021 UJ	0.00015 UJ
1,2,3,4,6,7,8-HpCDF	2	30	0.00003	0.00052	0.00018	0.00028	0.00009	0.00008 UJ	0.00034 UJ	0.00026 UJ
1,2,3,4,7,8,9-HpCDF	0	30	0.00007	0.0006			0.00012	0.00007 UJ	0.00036 UJ	0.00027 UJ
OCDF	0	30	0.00006	0.00037			0.00009	0.00008 UJ	0.00037 UJ	0.00028 UJ
Total TCDD	20	30	0.00004	0.0002	0.00011	0.00082	0.00020	0.0002 UJ	0.00025 J	0.00017 J
Total PeCDD	19	30	0.00006	0.00043	0.00009	0.0019	0.00048	0.00006 UJ	0.0019 J	0.00131 J
Total HxCDD	12	30	0.00001	0.00054	0.00009	0.00029	0.00012	0.00003 UJ	0.00013 J	0.00009 J
Total HpCDD	2	30	0.00004	0.00131	0.00086	0.00136	0.00025	0.00005 UJ	0.00017 UJ	0.00013 UJ
Total TCDF	20	30	0.00003	0.00013	0.00008	0.00053	0.00020	0.0001 UJ	0.00038 J	0.00026 J
Total PeCDF	18	30	0.00001	0.00016	0.00003	0.00052	0.00016	0.00015 UJ	0.00005 J	0.00003 J
Total HxCDF	0	30	0.00003	0.00052			0.00007	0.00011 UJ	0.00027 UJ	0.00022 UJ
Total HpCDF	0	30	0.00003	0.00056			0.00009	0.00006 UJ	0.00012 UJ	0.0001 UJ
Toxicity Equivalency (Dioxins, Furans, HCX)	20	20			0.000122	0.00106	0.000444		0.000304	0.000209
PCB Congeners (ug/Kg)										
2-Monochlorobiphenyl (1)	0	2	0.00532	0.00906			0.00360	0.00532 UJ		
4-Chlorobiphenyl (3)	0	2	0.00477	0.0084			0.00329	0.00477 UJ		
2,2'-Dichlorobiphenyl (4)	1	2	0.09933	0.09933	0.01909	0.01909	0.03438	0.09933 UJ		
2,3-Dichlorobiphenyl (5)	0	2	0.00993	0.00995			0.00497	0.00993 UJ		
2,3'-Dichlorobiphenyl (6)	0	2	0.0071	0.01271			0.00495	0.0071 UJ		
2,4-Dichlorobiphenyl (7)	1	2	0.00993	0.00993	0.00337	0.00337	0.00417	0.00993 UJ		
2,4'-Dichlorobiphenyl (8)	0	2	0.02008	0.0476			0.01692	0.02008 UJ		
2,5-Dichlorobiphenyl (9)	1	2	0.00993	0.00993	0.00385	0.00385	0.00441	0.00993 UJ		
2,6-Dichlorobiphenyl (10)	0	2	0.00993	0.00995			0.00497	0.00993 UJ		
3,4-Dichlorobiphenyl (12)	0	2	0.01987	0.01989			0.00994	0.01987 UJ		
2,2',3'-Trichlorobiphenyl (16)	1	2	0.00939	0.00939	0.04649	0.04649	0.02559	0.00939 UJ		
2,2',4-Trichlorobiphenyl (17)	1	2	0.00739	0.00739	0.04943	0.04943	0.02656	0.00739 UJ		

Table A-13
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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	GMP-LB-5001-0000-01-F 6/22/2001	GMP-LB-5001-0000-01-O 6/22/2001	GMP-LB-5001-0000-01-W 6/22/2001
2,2',5-Trichlorobiphenyl (18)	1	2	0.018	0.018	0.11122	0.11122	0.06011	0.018 UJ		
2,2',6-Trichlorobiphenyl (19)	2	2			0.00286	0.01225	0.00756	0.00286 J		
2,3,3'-Trichlorobiphenyl (20)	1	2	0.0736	0.0736	0.59532	0.59532	0.31606	0.0736 UJ		
2,3,4'-Trichlorobiphenyl (22)	1	2	0.01764	0.01764	0.14884	0.14884	0.07883	0.01764 UJ		
2,3,6-Trichlorobiphenyl (24)	1	2	0.03973	0.03973	0.01174	0.01174	0.01580	0.03973 UJ		
2,3',4-Trichlorobiphenyl (25)	1	2	0.00372	0.00372	0.01742	0.01742	0.00964	0.00372 UJ		
2,3',5-Trichlorobiphenyl (26)	1	2	0.01026	0.01026	0.05176	0.05176	0.02845	0.01026 UJ		
2,4',5-Trichlorobiphenyl (31)	1	2	0.04065	0.04065	0.22523	0.22523	0.12278	0.04065 UJ		
2,4',6-Trichlorobiphenyl (32)	1	2	0.00452	0.00452	0.04019	0.04019	0.02123	0.00452 UJ		
2,2',3,3'-Tetrachlorobiphenyl (40)	1	2	0.03414	0.03414	0.27378	0.27378	0.14543	0.03414 UJ		
2,2',3,4'-Tetrachlorobiphenyl (42)	1	2	0.02367	0.02367	0.1287	0.1287	0.07027	0.02367 UJ		
2,2',3,5-Tetrachlorobiphenyl (43)	2	2			0.2961	1.29573	0.79592	0.2961 J		
2,2',3,5'-Tetrachlorobiphenyl (44)	2	2			0.04125	0.15543	0.09834	0.04125 J		
2,2',3,6-Tetrachlorobiphenyl (45)	1	2	0.00644	0.00644	0.05456	0.05456	0.02889	0.00644 UJ		
2,2',3,6'-Tetrachlorobiphenyl (46)	1	2	0.00326	0.00326	0.01276	0.01276	0.00720	0.00326 UJ		
2,2',4,5-Tetrachlorobiphenyl (48)	1	2	0.01309	0.01309	0.06679	0.06679	0.03667	0.01309 UJ		
2,2',4,5'-Tetrachlorobiphenyl (49)	2	2			0.0925	0.37666	0.23458	0.0925 J		
2,2',4,6-Tetrachlorobiphenyl (50)	1	2	0.00716	0.00716	0.04416	0.04416	0.02387	0.00716 UJ		
2,3,3',4'-Tetrachlorobiphenyl (56)	1	2	0.04074	0.04074	0.28977	0.28977	0.15507	0.04074 UJ		
2,3,3',6-Tetrachlorobiphenyl (59)	1	2	0.08931	0.08931	0.46011	0.46011	0.25238	0.08931 UJ		
2,3,4,4'-Tetrachlorobiphenyl (60)	2	2			0.05438	0.29219	0.17329	0.05438 J		
2,3,4,5-Tetrachlorobiphenyl (61)	2	2			0.36036	1.36172	0.86104	0.36036 J		
2,3,4',5-Tetrachlorobiphenyl (63)	2	2			0.00993	0.04196	0.02595	0.00993 J		
2,3,4',6-Tetrachlorobiphenyl (64)	1	2	0.06165	0.06165	0.36647	0.36647	0.19865	0.06165 UJ		
2,3',4,4'-Tetrachlorobiphenyl (66)	2	2			0.25152	1.27282	0.76217	0.25152 J		
3,3',4,4'-Tetrachlorobiphenyl (77)	1	2	0.00521	0.00521	0.03729	0.03729	0.01995	0.00521 UJ		
3,4,4',5-Tetrachlorobiphenyl (81)	0	2	0.09933	0.09947			0.04970	0.09933 UJ		
2,2',3,3',4-Pentachlorobiphenyl (82)	2	2			0.05209	0.38242	0.21726	0.05209 J		
2,2',3,3',5-Pentachlorobiphenyl (83)	2	2			0.40228	1.85788	1.13008	0.40228 J		
2,2',3,3',6-Pentachlorobiphenyl (84)	1	2	0.06191	0.06191	0.55533	0.55533	0.29314	0.06191 UJ		
2,2',3,4,4'-Pentachlorobiphenyl (85)	2	2			0.14448	0.86502	0.50475	0.14448 J		
2,2',3,4,5-Pentachlorobiphenyl (86)	2	2			0.37848	2.55552	1.46700	0.37848 J		
2,2',3,4,6-Pentachlorobiphenyl (88)	2	2			0.05588	0.34146	0.19867	0.05588 J		
2,2',3,4,6'-Pentachlorobiphenyl (89)	2	2			0.00172	0.01792	0.00982	0.00172 J		
2,2',3,4',5-Pentachlorobiphenyl (90)	2	2			0.66882	3.17811	1.92347	0.66882 J		
2,2',3,5,5'-Pentachlorobiphenyl (92)	2	2			0.12486	0.65701	0.39094	0.12486 J		
2,2',3,5,6-Pentachlorobiphenyl (93)	2	2			0.30165	1.907	1.10433	0.30165 J		
2,3,3',4,4'-Pentachlorobiphenyl (105)	2	2			0.26594	1.31103	0.78849	0.26594 J		
2,3,3',4,5-Pentachlorobiphenyl (106)	2	2			0.08724	0.46137	0.27431	0.08724 J		

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	GMP-LB-5001-0000-01-F 6/22/2001	GMP-LB-5001-0000-01-O 6/22/2001	GMP-LB-5001-0000-01-W 6/22/2001
2,3,3',4',5'-Pentachlorobiphenyl (108)	2	2			0.02664	0.10766	0.06715	0.02664 J		
2,3,3',4',6-Pentachlorobiphenyl (110)	2	2			0.5671	4.4222	2.49465	0.5671 J		
2,3,4,4',5-Pentachlorobiphenyl (114)	2	2			0.01989	0.14146	0.08068	0.01989 J		
2,3',4,4',5-Pentachlorobiphenyl (118)	2	2			0.85791	5.05995	2.95893	0.85791 J		
3,3',4,4',5-Pentachlorobiphenyl (126)	1	2	0.19866	0.19866	0.01292	0.01292	0.05613	0.19866 UJ		
2,2',3,3',4,4'-Hexachlorobiphenyl (128)	2	2			0.16372	1.1691	0.66641	0.16372 J		
2,2',3,3',4,5-Hexachlorobiphenyl (129)	2	2			0.95084	6.11388	3.53236	0.95084 J		
2,2',3,3',4,5'-Hexachlorobiphenyl (130)	2	2			0.05435	0.35017	0.20226	0.05435 J		
2,2',3,3',4,6-Hexachlorobiphenyl (131)	2	2			0.00719	0.03853	0.02286	0.00719 J		
2,2',3,3',4,6'-Hexachlorobiphenyl (132)	2	2			0.12231	0.99089	0.55660	0.12231 J		
2,2',3,3',5,6-Hexachlorobiphenyl (134)	2	2			0.0227	0.15112	0.08691	0.0227 J		
2,2',3,3',5,6'-Hexachlorobiphenyl (135)	2	2			0.10953	0.6171	0.36332	0.10953 J		
2,2',3,3',6,6'-Hexachlorobiphenyl (136)	1	2	0.01839	0.01839	0.17495	0.17495	0.09207	0.01839 UJ		
2,2',3,4,4',5-Hexachlorobiphenyl (137)	2	2			0.08726	0.54556	0.31641	0.08726 J		
2,2',3,4,5,5'-Hexachlorobiphenyl (141)	2	2			0.11025	0.57117	0.34071	0.11025 J		
2,2',3,4,5',6-Hexachlorobiphenyl (144)	2	2			0.01809	0.0697	0.04390	0.01809 J		
2,2',3,4',5,5'-Hexachlorobiphenyl (146)	2	2			0.10278	0.4525	0.27764	0.10278 J		
2,2',3,4',5,6-Hexachlorobiphenyl (147)	2	2			0.42324	2.46992	1.44658	0.42324 J		
2,2',4,4',5,5'-Hexachlorobiphenyl (153)	2	2			0.61956	2.6011	1.61033	0.61956 J		
2,3,3',4,4',5-Hexachlorobiphenyl (156)	2	2			0.07626	0.53986	0.30806	0.07626 J		
2,3,3',4,4',6-Hexachlorobiphenyl (158)	2	2			0.07994	0.47196	0.27595	0.07994 J		
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	2	2			0.03242	0.22785	0.13014	0.03242 J		
3,3',4,4',5,5'-Hexachlorobiphenyl (169)	1	2	0.09933	0.09933	0.02013	0.02013	0.03490	0.09933 UJ		
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	2	2			0.1497	1.75716	0.95343	0.1497 J		
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)	2	2			0.05326	0.43012	0.24169	0.05326 J		
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)	2	2			0.06787	0.34145	0.20466	0.06787 J		
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)	2	2			0.13425	0.93392	0.53409	0.13425 J		
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)	2	2			0.01402	0.03814	0.02608	0.01402 J		
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)	2	2			0.00752	0.05466	0.03109	0.00752 J		
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)	2	2			0.0888	0.8119	0.45035	0.0888 J		
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)	2	2			0.09087	0.33165	0.21126	0.09087 J		
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)	2	2			0.31972	2.77948	1.54960	0.31972 J		
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)	1	2	0.19866	0.19866	0.01269	0.01269	0.05601	0.19866 UJ		
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)	2	2			0.11243	0.36117	0.23680	0.11243 J		
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)	0	2	0.19866	0.19894			0.09940	0.19866 UJ		
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)	2	2			0.0102	0.07496	0.04258	0.0102 J		
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	2	2			0.40739	2.30997	1.35868	0.40739 J		
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	1	2	0.09933	0.09933	0.04326	0.04326	0.04646	0.09933 UJ		
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)	2	2			0.07326	0.58712	0.33019	0.07326 J		

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2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	2	2			0.00652	0.05166	0.02909	0.00652 J		
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	2	2			0.17218	0.94914	0.56066	0.17218 J		
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	2	2			0.03105	0.24951	0.14028	0.03105 J		
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)	2	2			0.1749	0.5422	0.35855	0.1749 J		
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)	2	2			0.01498	0.0306	0.02279	0.01498 J		
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)	2	2			1.23032	5.9611	3.59571	1.23032 J		
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (200)	2	2			0.00838	0.0759	0.04214	0.00838 J		
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)	2	2			0.0887	0.19143	0.14007	0.0887 J		
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)	2	2			0.45392	1.67679	1.06536	0.45392 J		
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	2	2			0.01336	0.05706	0.03521	0.01336 J		
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	2	2			1.64326	6.45223	4.04775	1.64326 J		
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	2	2			0.17754	0.434	0.30577	0.17754 J		
Decachlorobiphenyl (209)	2	2			1.00745	3.56919	2.28832	1.00745 J		
PCB Congeners, Total	2	2			14.59617	80.38531	47.49074	14.59617 J		
Toxicity Equivalency (Dioxins, Furans, HCX)	1	1			0.000161	0.000161	0.00016	0.000161		
Toxicity Equivalency (PCB)	1	1			0.00248	0.00248	0.00248			
Other (%)										
Lipid_percent	22	22			0.389	5.35	1.93	0.926	2.13	

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* **106**(12):775-792.

Samples ending with:
F - Fillet
O - Offal
W - whole body

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PARAMETER	GMP-LB-5002-0000-01-F 6/22/2001	GMP-LB-5002-0000-01-O 6/22/2001	GMP-LB-5002-0000-01-W 6/22/2001	GMP-LB-5003-0000-01-F 6/25/2001	GMP-LB-5003-0000-01-O 6/25/2001	GMP-LB-5003-0000-01-W 6/25/2001	GMP-LB-5004-0000-01-F 6/25/2001	GMP-LB-5004-0000-01-O 6/25/2001
Semivolatile Organics (ug/Kg)								
1,1'-Biphenyl	0.07 J	0.15 J	0.12 J	0.14 J	0.48 J	0.36 J	0.22 J	0.56 J
2-Methylnaphthalene	0.62 U	1.47	0.93	5.69	14.52	11.25	8	24.18
Acenaphthene	0.62 U	0.38 J	0.24 J	0.1 J	0.72	0.49	0.11 J	0.63
Acenaphthylene	0.62 U	0.27 J	0.17 J	0.44 J	1.16	0.89	0.47 J	1.52
Anthracene	0.07 J	0.51 J	0.35 J	0.17 J	0.82	0.58	0.18 J	0.61 J
Benzo(a)anthracene	0.62 U	0.47 J	0.3 J	0.63 U	0.14 J	0.09 J	0.63 U	0.14 J
Benzo(a)pyrene	0.62 U	0.51 J	0.32 J	0.63 U	0.15 J	0.09 J	0.63 U	0.12 J
Benzo(b)fluoranthene	0.62 U	0.73	0.46	0.63 U	0.15 J	0.09 J	0.63 U	0.21 J
Benzo(g,h,i)perylene	0.62 U	0.62 J	0.39 J	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U
Benzo(k)fluoranthene	0.62 U	0.74	0.47	0.63 U	0.17 J	0.11 J	0.63 U	0.17 J
Chrysene	0.07 J	0.79	0.53	0.05 J	0.38 J	0.26 J	0.1 J	0.41 J
Dibenzo(a,h)anthracene	0.62 U	0.29 J	0.18 J	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U
Dibenzofuran	0.06 J	0.25 J	0.18 J	0.08 J	0.48 J	0.33 J	0.15 J	0.56 J
Fluoranthene	0.28 J	2.06	1.41	0.6 J	3.11	2.18	1.02	3.6
Fluorene	0.16 J	0.74	0.53	0.33 J	1.35	0.97	0.45 J	1.67
Indeno(1,2,3-cd)pyrene	0.62 U	0.63 J	0.4 J	0.63 U	0.15 J	0.09 J	0.63 U	0.15 J
Naphthalene	0.64 U	1.67	1.06	5.21	12.07	9.53	5.44	16.13
Phenanthrene	0.4 J	2.4	1.67	1.09	5.94	4.14	1.47	5.6
Pyrene	0.62 U	1.25 J	0.79 J	0.63 U	1.28 J	0.8 J	0.68 J	2.01 J
Total PAH	1.1 J	15.93 J	10.5 J	13.89 J	43.06 J	32.28 J	18.29 J	58.28 J
Pesticides/PCBs (ug/Kg)								
4,4'-DDD	0.49 J	5.2 J	3.47	0.63	5.81 J	3.9	0.47 J	5.51
4,4'-DDE	4.86	206.1 J	132.34 D	2.19	28.21 J	18.59 D	3.79	72.86 J
4,4'-DDT	0.24 J	2.54 J	1.7	0.16 J	1.09 J	0.75	0.19 J	2.58
Aldrin	0.5 U	0.5 UJ	0.5 U	0.51 U	0.51 UJ	0.51 U	0.51 U	0.5 U
alpha-BHC	0.5 U	0.5 UJ	0.5 U	0.51 U	0.51 UJ	0.51 U	0.51 U	0.5 U
alpha-Chlordane	0.3 J	2.6 J	1.76	0.74	7.22 J	4.82	0.48 J	5.24
Aroclor, Total	61.85	515.32 J	349.12	24.93 J	247.7 J	165.37	34.49 J	350.83 J
Aroclor-1016	6.24 U	6.29 UJ	6.27 U	6.3 U	6.31 UJ	6.31 U	6.31 U	6.28 U
Aroclor-1221	6.24 U	6.29 UJ	6.27 U	6.3 U	6.31 UJ	6.31 U	6.31 U	6.28 U
Aroclor-1232	6.24 U	6.29 UJ	6.27 U	6.3 U	6.31 UJ	6.31 U	6.31 U	6.28 U
Aroclor-1242	6.24 U	6.29 UJ	6.27 U	6.3 U	6.31 UJ	6.31 U	6.31 U	6.28 U
Aroclor-1248	6.24 U	6.29 UJ	6.27 U	6.3 U	6.31 UJ	6.31 U	6.31 U	6.28 U
Aroclor-1254	28.03	389.78 J	257.19 D	15.1	191.99 J	126.61 D	19.48	291.35 J
Aroclor-1260	6.24 U	6.29 UJ	6.27 U	6.3 U	6.31 UJ	6.31 U	6.31 U	6.28 U
Aroclor-1268	33.82	125.54 J	91.93 D	9.83	55.71 J	38.76	15.01	59.48 J
beta-BHC	0.5 U	0.5 UJ	0.5 U	0.51 U	0.51 UJ	0.51 U	0.51 U	0.5 U
delta-BHC	0.5 U	0.51 UJ	0.5 U	0.51 U	0.51 UJ	0.51 U	0.51 U	0.5 U

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Dieldrin	0.13 J	0.97 J	0.66	0.19 J	1.14 J	0.79	0.22 J	1.21
Endosulfan I	0.5 U	0.5 UJ	0.5 U	0.51 U	0.51 UJ	0.51 U	0.51 U	0.5 U
Endosulfan II	0.5 U	0.5 UJ	0.5 U	0.51 U	0.51 UJ	0.51 U	0.51 U	0.5 U
Endosulfan Sulfate	0.5 U	0.5 UJ	0.5 U	0.51 U	0.51 UJ	0.51 U	0.51 U	0.5 U
Endrin	0.5 U	0.5 UJ	0.5 U	0.51 U	0.51 UJ	0.51 U	0.51 U	0.5 U
Endrin Aldehyde	0.5 U	0.5 UJ	0.5 U	0.51 U	0.51 UJ	0.51 U	0.51 U	0.5 U
Endrin Ketone	0.5 U	0.5 UJ	0.5 U	0.51 U	0.51 UJ	0.51 U	0.51 U	0.5 U
gamma-BHC	0.5 U	0.5 UJ	0.5 U	0.51 U	0.04 J	0.03 J	0.51 U	0.03 J
gamma-Chlordane	0.1 J	1.06 J	0.71	0.27 J	2.67 J	1.78	0.18 J	2.15
Heptachlor	0.5 U	0.5 UJ	0.5 U	0.51 U	0.51 UJ	0.51 U	0.51 U	0.5 U
Heptachlor Epoxide	0.5 U	0.5 UJ	0.5 U	0.51 U	0.51 UJ	0.51 U	0.51 U	0.5 U
Methoxychlor	0.5 U	0.5 UJ	0.5 U	0.51 U	0.51 UJ	0.51 U	0.51 U	0.5 U
Technical Chlordane	8.73 J	73.56 J	49.8 J	9.67 J	65.56 J	44.9 J	8.64 J	85.6
Toxaphene	12.47 U	12.59 UJ	12.55 U	12.61 U	12.62 UJ	12.62 U	12.61 U	12.55 U
Inorganics (mg/Kg)								
Aluminum	0.499 U	10.9	6.9	0.222 U	6.36	4.01	0.373 U	6.56
Antimony	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U
Arsenic	0.0361 U	0.0609 U	0.0518 U	0.0435 U	0.0612 U	0.0547 U	0.0342 U	0.0495 U
Barium	0.0335 U	0.974	0.617	0.0314 U	1.94	1.22	0.0865	1.26
Beryllium	0.004 U	0.0101	0.0064	0.004 U	0.0069	0.00435	0.004 U	0.00762
Cadmium	0.2 U	0.2 U	0.2 U	0.2 U	0.0312 J	0.0197 J	0.2 U	0.016 J
Chromium	0.269 U	0.237 J	0.15 J	0.269 U	0.269 U	0.269 U	0.269 U	0.269 U
Cobalt	0.0065 J	0.0492 J	0.0335 J	0.00561 J	0.0462 J	0.0312 J	0.00562 J	0.0409 J
Copper	0.205	0.827	0.599	0.239	1.11	0.788	0.303	0.656
Iron	2.09	29.3	19.3	1.62	37.2	24.1	1.95	30
Lead	0.022 U	0.129	0.0817	0.022 U	0.0993	0.0626	0.022 U	0.0801
Manganese	0.183	6.92	4.45	0.146	5.7	3.65	0.246	4.25
Mercury	0.534 J	0.293 J	0.381 J	0.562 J	0.327 J	0.414 J	0.365 J	0.225 J
Mercury (methyl)	0.497	0.251	0.341	0.538	0.399	0.45	0.361	0.231
Molybdenum	0.32 U	0.0513 J	0.0325 J	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
Nickel	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
Selenium	0.187 J	0.303 J	0.26 J	0.448 U	0.282 J	0.178 J	0.154 J	0.325 J
Silver	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Thallium	0.00262 J	0.00455 J	0.00384 J	0.00137 J	0.00363 J	0.00279 J	0.00287 J	0.00223 J
Vanadium	0.179 U	0.179 U	0.179 U	0.179 U	0.179 U	0.179 U	0.179 U	0.179 U
Zinc	6.03 J	20.8 J	15.4 J	4.03 J	19.1	13.5	7.28 J	17.3 J
Dioxins/Furans (ug/Kg)								
HCX	0.01993 UJ	0.01994 UJ	0.01994 UJ	0.01989 UJ	0.03979 UJ	0.03244 UJ	0.0199 UJ	0.01995 UJ
TCX	R	R	R	R	R	R	R	R

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2,3,7,8-TCDD	0.0001 UJ	0.00018	0.00011	0.00009 UJ	0.00045 J	0.00028 J	0.00006 UJ	0.0002 J
1,2,3,7,8-PeCDD	0.00014 UJ	0.00023 UJ	0.0002 UJ	0.00013 UJ	0.00015 J	0.00009 J	0.0001 UJ	0.00043 UJ
1,2,3,4,7,8-HxCDD	0.00012 UJ	0.00027 UJ	0.00022 UJ	0.00013 UJ	0.00015 UJ	0.00014 UJ	0.0001 UJ	0.00057 UJ
1,2,3,6,7,8-HxCDD	0.00012 UJ	0.00029 UJ	0.00023 UJ	0.00014 UJ	0.00021 J	0.00013 J	0.0001 UJ	0.00055 UJ
1,2,3,7,8,9-HxCDD	0.00011 UJ	0.00026 UJ	0.00021 UJ	0.00013 UJ	0.00014 UJ	0.00014 UJ	0.00009 UJ	0.00052 UJ
1,2,3,4,6,7,8-HpCDD	0.00013 UJ	0.00128 UJ	0.00086 UJ	0.00009 UJ	0.00088 J	0.00055 J	0.00012 UJ	0.00131 UJ
OCDD	0.00022 UJ	0.0005 UJ	0.0004 UJ	0.00021 UJ	0.01642 J	0.01035 J	0.00021 UJ	0.00073 UJ
2,3,7,8-TCDF	0.00012 UJ	0.00013 J	0.00008 J	0.00013 UJ	0.00031 J	0.0002 J	0.00011 UJ	0.00026 J
1,2,3,7,8-PeCDF	0.00015 UJ	0.00014 UJ	0.00014 UJ	0.00015 UJ	0.00013 J	0.00008 J	0.00013 UJ	0.00016 UJ
2,3,4,7,8-PeCDF	0.00014 UJ	0.00014 UJ	0.00014 UJ	0.00014 UJ	0.00022 J	0.00014 J	0.00012 UJ	0.0002 J
1,2,3,4,7,8-HxCDF	0.00005 UJ	0.00017 UJ	0.00013 UJ	0.00004 UJ	0.00026 UJ	0.00018 UJ	0.00005 UJ	0.00028 UJ
1,2,3,6,7,8-HxCDF	0.00007 UJ	0.00016 UJ	0.00013 UJ	0.00006 UJ	0.00006 UJ	0.00006 UJ	0.00006 UJ	0.00028 UJ
2,3,4,6,7,8-HxCDF	0.00008 UJ	0.00018 UJ	0.00014 UJ	0.00007 UJ	0.00007 J	0.00004 J	0.00006 UJ	0.00028 UJ
1,2,3,7,8,9-HxCDF	0.0001 UJ	0.00019 UJ	0.00016 UJ	0.00007 UJ	0.00003 J	0.00002 J	0.00006 UJ	0.00032 UJ
1,2,3,4,6,7,8-HpCDF	0.00008 UJ	0.00046 UJ	0.00032 UJ	0.00006 UJ	0.00028 J	0.00018 J	0.00006 UJ	0.00052 UJ
1,2,3,4,7,8,9-HpCDF	0.00011 UJ	0.00054 UJ	0.00038 UJ	0.00007 UJ	0.00021 UJ	0.00016 UJ	0.00007 UJ	0.0006 UJ
OCDF	0.00019 UJ	0.0003 UJ	0.00026 UJ	0.00016 UJ	0.00035 UJ	0.00028 UJ	0.00012 UJ	0.00024 UJ
Total TCDD	0.0001 UJ	0.00018	0.00011	0.0001 UJ	0.00045 J	0.00028 J	0.00006 UJ	0.0002 J
Total PeCDD	0.00014 UJ	0.00023 UJ	0.0002 UJ	0.00013 UJ	0.00015 J	0.00009 J	0.00009 UJ	0.00043 UJ
Total HxCDD	0.00012 UJ	0.00027 UJ	0.00022 UJ	0.00013 UJ	0.00024 J	0.00015 J	0.00009 UJ	0.00054 UJ
Total HpCDD	0.00013 UJ	0.00128 UJ	0.00086 UJ	0.00004 UJ	0.00136 J	0.00086 J	0.00012 UJ	0.00131 UJ
Total TCDF	0.00012 UJ	0.00013 J	0.00008 J	0.00013 UJ	0.00031 J	0.0002 J	0.00011 UJ	0.00026 J
Total PeCDF	0.00015 UJ	0.00014 UJ	0.00014 UJ	0.00015 UJ	0.00039 J	0.00025 J	0.00013 UJ	0.00046 J
Total HxCDF	0.00005 UJ	0.00018 UJ	0.00013 UJ	0.00004 UJ	0.00052 UJ	0.00034 UJ	0.00005 UJ	0.00029 UJ
Total HpCDF	0.0001 UJ	0.0005 UJ	0.00035 UJ	0.00006 UJ	0.00028 UJ	0.0002 UJ	0.00004 UJ	0.00056 UJ
Toxicity Equivalency (Dioxins, Furans, HCX)		0.000193	0.000122		0.000792	0.000499		0.000326
PCB Congeners (ug/Kg)								
2-Monochlorobiphenyl (1)					0.00906 UJ			
4-Chlorobiphenyl (3)					0.0084 UJ			
2,2'-Dichlorobiphenyl (4)					0.01909 J			
2,3-Dichlorobiphenyl (5)					0.00995 UJ			
2,3'-Dichlorobiphenyl (6)					0.01271 UJ			
2,4-Dichlorobiphenyl (7)					0.00337 J			
2,4'-Dichlorobiphenyl (8)					0.0476 UJ			
2,5-Dichlorobiphenyl (9)					0.00385 J			
2,6-Dichlorobiphenyl (10)					0.00995 UJ			
3,4-Dichlorobiphenyl (12)					0.01989 UJ			
2,2',3'-Trichlorobiphenyl (16)					0.04649 J			
2,2',4-Trichlorobiphenyl (17)					0.04943 J			

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2,2',5-Trichlorobiphenyl (18)					0.11122 J			
2,2',6-Trichlorobiphenyl (19)					0.01225 J			
2,3,3'-Trichlorobiphenyl (20)					0.59532 J			
2,3,4'-Trichlorobiphenyl (22)					0.14884 J			
2,3,6-Trichlorobiphenyl (24)					0.01174 J			
2,3',4-Trichlorobiphenyl (25)					0.01742 J			
2,3',5-Trichlorobiphenyl (26)					0.05176 J			
2,4',5-Trichlorobiphenyl (31)					0.22523 J			
2,4',6-Trichlorobiphenyl (32)					0.04019 J			
2,2',3,3'-Tetrachlorobiphenyl (40)					0.27378 J			
2,2',3,4'-Tetrachlorobiphenyl (42)					0.1287 J			
2,2',3,5-Tetrachlorobiphenyl (43)					1.29573 J			
2,2',3,5'-Tetrachlorobiphenyl (44)					0.15543 J			
2,2',3,6-Tetrachlorobiphenyl (45)					0.05456 J			
2,2',3,6'-Tetrachlorobiphenyl (46)					0.01276 J			
2,2',4,5-Tetrachlorobiphenyl (48)					0.06679 J			
2,2',4,5'-Tetrachlorobiphenyl (49)					0.37666 J			
2,2',4,6-Tetrachlorobiphenyl (50)					0.04416 J			
2,3,3',4'-Tetrachlorobiphenyl (56)					0.28977 J			
2,3,3',6-Tetrachlorobiphenyl (59)					0.46011 J			
2,3,4,4'-Tetrachlorobiphenyl (60)					0.29219 J			
2,3,4,5-Tetrachlorobiphenyl (61)					1.36172 J			
2,3,4',5-Tetrachlorobiphenyl (63)					0.04196 J			
2,3,4',6-Tetrachlorobiphenyl (64)					0.36647 J			
2,3',4,4'-Tetrachlorobiphenyl (66)					1.27282 J			
3,3',4,4'-Tetrachlorobiphenyl (77)					0.03729 J			
3,4,4',5-Tetrachlorobiphenyl (81)					0.09947 UJ			
2,2',3,3',4-Pentachlorobiphenyl (82)					0.38242 J			
2,2',3,3',5-Pentachlorobiphenyl (83)					1.85788 J			
2,2',3,3',6-Pentachlorobiphenyl (84)					0.55533 J			
2,2',3,4,4'-Pentachlorobiphenyl (85)					0.86502 J			
2,2',3,4,5-Pentachlorobiphenyl (86)					2.55552 J			
2,2',3,4,6-Pentachlorobiphenyl (88)					0.34146 J			
2,2',3,4,6'-Pentachlorobiphenyl (89)					0.01792 J			
2,2',3,4',5-Pentachlorobiphenyl (90)					3.17811 J			
2,2',3,5,5'-Pentachlorobiphenyl (92)					0.65701 J			
2,2',3,5,6-Pentachlorobiphenyl (93)					1.907 J			
2,3,3',4,4'-Pentachlorobiphenyl (105)					1.31103 J			
2,3,3',4,5-Pentachlorobiphenyl (106)					0.46137 J			

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2,3,3',4',5'-Pentachlorobiphenyl (108)					0.10766 J			
2,3,3',4',6-Pentachlorobiphenyl (110)					4.4222 J			
2,3,4,4',5-Pentachlorobiphenyl (114)					0.14146 J			
2,3',4,4',5-Pentachlorobiphenyl (118)					5.05995 J			
3,3',4,4',5-Pentachlorobiphenyl (126)					0.01292 J			
2,2',3,3',4,4'-Hexachlorobiphenyl (128)					1.1691 J			
2,2',3,3',4,5-Hexachlorobiphenyl (129)					6.11388 J			
2,2',3,3',4,5'-Hexachlorobiphenyl (130)					0.35017 J			
2,2',3,3',4,6-Hexachlorobiphenyl (131)					0.03853 J			
2,2',3,3',4,6'-Hexachlorobiphenyl (132)					0.99089 J			
2,2',3,3',5,6-Hexachlorobiphenyl (134)					0.15112 J			
2,2',3,3',5,6'-Hexachlorobiphenyl (135)					0.6171 J			
2,2',3,3',6,6'-Hexachlorobiphenyl (136)					0.17495 J			
2,2',3,4,4',5-Hexachlorobiphenyl (137)					0.54556 J			
2,2',3,4,5,5'-Hexachlorobiphenyl (141)					0.57117 J			
2,2',3,4,5',6-Hexachlorobiphenyl (144)					0.0697 J			
2,2',3,4',5,5'-Hexachlorobiphenyl (146)					0.4525 J			
2,2',3,4',5,6-Hexachlorobiphenyl (147)					2.46992 J			
2,2',4,4',5,5'-Hexachlorobiphenyl (153)					2.6011 J			
2,3,3',4,4',5-Hexachlorobiphenyl (156)					0.53986 J			
2,3,3',4,4',6-Hexachlorobiphenyl (158)					0.47196 J			
2,3',4,4',5,5'-Hexachlorobiphenyl (167)					0.22785 J			
3,3',4,4',5,5'-Hexachlorobiphenyl (169)					0.02013 J			
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)					1.75716 J			
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)					0.43012 J			
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)					0.34145 J			
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)					0.93392 J			
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)					0.03814 J			
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)					0.05466 J			
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)					0.8119 J			
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)					0.33165 J			
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)					2.77948 J			
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)					0.01269 J			
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)					0.36117 J			
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)					0.19894 UJ			
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)					0.07496 J			
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)					2.30997 J			
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)					0.04326 J			
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)					0.58712 J			

Table A-13
Summary Statistics and Analytical Results for Largemouth Bass - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	GMP-LB-5002-0000-01-F 6/22/2001	GMP-LB-5002-0000-01-O 6/22/2001	GMP-LB-5002-0000-01-W 6/22/2001	GMP-LB-5003-0000-01-F 6/25/2001	GMP-LB-5003-0000-01-O 6/25/2001	GMP-LB-5003-0000-01-W 6/25/2001	GMP-LB-5004-0000-01-F 6/25/2001	GMP-LB-5004-0000-01-O 6/25/2001
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)					0.05166 J			
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)					0.94914 J			
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)					0.24951 J			
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)					0.5422 J			
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)					0.0306 J			
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)					5.9611 J			
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (200)					0.0759 J			
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)					0.19143 J			
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)					1.67679 J			
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)					0.05706 J			
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl					6.45223 J			
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl					0.434 J			
Decachlorobiphenyl (209)					3.56919 J			
PCB Congeners, Total					80.38531 J			
Toxicity Equivalency (Dioxins, Furans, HCX)								
Toxicity Equivalency (PCB)					0.00248			
Other (%)								
Lipid_percent	0.395	1.73		0.628	3.6		0.389	2.41

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* **106**(12):775-792.

Samples ending with:
F - Fillet
O - Offal
W - whole body

Table A-13
Summary Statistics and Analytical Results for Largemouth Bass - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	GMP-LB-5004-0000-01-W 6/25/2001	GMP-LB-5005-0000-01-F 6/25/2001 DUPLICATE	GMP-LB-5005-0000-01-F 6/25/2001	GMP-LB-5005-0000-01-O 6/25/2001 DUPLICATE	GMP-LB-5005-0000-01-O 6/25/2001	GMP-LB-5005-0000-01-O 6/25/2001 REEXTRACTED	GMP-LB-5005-0000-01-W 6/25/2001	GMP-LB-5006-0000-01-F 6/25/2001
Semivolatile Organics (ug/Kg)								
1,1'-Biphenyl	0.44 J		0.07 J		0.07 J	0.65 U	0.02 U	0.11 J
2-Methylnaphthalene	18.81		0.63 U		0.63 U	1.26	1.04 U	0.92 U
Acenaphthene	0.46		0.63 U		0.63 UJ	0.79	0.52	0.92 U
Acenaphthylene	1.17		0.63 U		0.63 UJ	0.26 J	0.17 J	0.92 U
Anthracene	0.47 J		0.15 J		0.27 J	0.77	0.56	0.1 J
Benzo(a)anthracene	0.09 J		0.63 U		0.63 UJ	0.06 J	0.04 J	0.92 U
Benzo(a)pyrene	0.08 J		0.63 U		0.63 UJ	0.65 U	0.64 U	0.92 U
Benzo(b)fluoranthene	0.14 J		0.63 U		0.63 UJ	0.65 U	0.64 U	0.92 U
Benzo(g,h,i)perylene	0.63 U		0.63 U		0.63 UJ	0.65 U	0.64 U	0.92 U
Benzo(k)fluoranthene	0.12 J		0.63 U		0.63 UJ	0.65 U	0.64 U	0.92 U
Chrysene	0.31 J		0.06 J		0.09 J	0.65 U	0.02 U	0.1 J
Dibenzo(a,h)anthracene	0.63 U		0.63 U		0.63 UJ	0.65 U	0.64 U	0.92 U
Dibenzofuran	0.42 J		0.08 J		0.14 J	0.51 J	0.36 J	0.1 J
Fluoranthene	2.74		0.41 J		0.74 J	2.54 J	1.81 J	0.36 J
Fluorene	1.27		0.22 J		0.37 J	1.06	0.77	0.15 J
Indeno(1,2,3-cd)pyrene	0.1 J		0.63 U		0.63 UJ	0.65 U	0.64 U	0.92 U
Naphthalene	12.58		0.64 U		0.63 U	1.57 U	1.25 U	1.1 U
Phenanthrene	4.23		0.77		1.55 J	4.45 J	3.19 J	0.48 J
Pyrene	1.57 J		0.63 U		0.63 U	0.8 U	0.74 U	0.92 U
Total PAH	45 J		1.74 J		3.23 J	10.44 J	7.45 J	1.39 J
Pesticides/PCBs (ug/Kg)								
4,4'-DDD	3.84		0.49 J		3.42	19.11 J	2.41	0.42 J
4,4'-DDE	49.92 D		2.31		19.11 J	3.75 J	13.34 J	1.44
4,4'-DDT	1.78		0.1 J		0.4 J	3.42	2.5 J	0.74 U
Aldrin	0.5 U		0.5 U		0.5 UJ	0.52 U	0.51 U	0.74 U
alpha-BHC	0.5 U		0.5 U		0.5 UJ	0.52 U	0.51 U	0.74 U
alpha-Chlordane	3.66		0.53		1.23 J	4.93 J	3.42 J	0.57 J
Aroclor, Total	245.78		27.65 J		69.66 J	161.53 J	115.57 J	14.81 J
Aroclor-1016	6.29 U		6.29 U		6.28 UJ	6.49 U	6.42 U	9.2 U
Aroclor-1221	6.29 U		6.29 U		6.28 UJ	6.49 U	6.42 U	9.2 U
Aroclor-1232	6.29 U		6.29 U		6.28 UJ	6.49 U	6.42 U	9.2 U
Aroclor-1242	6.29 U		6.29 U		6.28 UJ	6.49 U	6.42 U	9.2 U
Aroclor-1248	6.29 U		6.29 U		6.28 UJ	6.49 U	6.42 U	9.2 U
Aroclor-1254	201.07 D		14.66		35.7 J	81.04 J	58.25 J	9.74
Aroclor-1260	6.29 U		6.29 U		6.28 UJ	6.49 U	6.42 U	9.2 U
Aroclor-1268	44.71 D		12.99		33.96 J	80.48 J	57.31 J	5.06 J
beta-BHC	0.5 U		0.5 U		0.5 UJ	0.52 U	0.51 U	0.74 U
delta-BHC	0.5 U		0.5 U		0.5 UJ	0.52 UJ	0.51 UJ	0.74 U

Table A-13
Summary Statistics and Analytical Results for Largemouth Bass - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	GMP-LB-5004-0000-01-W 6/25/2001	GMP-LB-5005-0000-01-F 6/25/2001 DUPLICATE	GMP-LB-5005-0000-01-F 6/25/2001	GMP-LB-5005-0000-01-O 6/25/2001 DUPLICATE	GMP-LB-5005-0000-01-O 6/25/2001	GMP-LB-5005-0000-01-O 6/25/2001 REEXTRACTED	GMP-LB-5005-0000-01-W 6/25/2001	GMP-LB-5006-0000-01-F 6/25/2001
Dieldrin	0.88		0.18 J		0.47 J	1.02 J	0.73 J	0.12 J
Endosulfan I	0.5 U		0.5 U		0.5 UJ	0.52 UJ	0.51 UJ	0.74 U
Endosulfan II	0.5 U		0.5 U		0.5 UJ	0.52 UJ	0.51 UJ	0.74 UJ
Endosulfan Sulfate	0.5 U		0.5 U		0.5 UJ	0.52 U	0.51 U	0.74 U
Endrin	0.5 U		0.5 U		0.5 UJ	0.52 U	0.51 U	0.74 U
Endrin Aldehyde	0.5 U		0.5 U		0.5 UJ	0.52 UJ	0.51 UJ	0.74 UJ
Endrin Ketone	0.5 U		0.5 U		0.5 UJ	0.52 U	0.51 U	0.74 U
gamma-BHC	0.02 J		0.5 U		0.5 UJ	0.52 UJ	0.51 UJ	0.74 U
gamma-Chlordane	1.49		0.22 J		0.47 J	2.35	1.62	0.25 J
Heptachlor	0.5 U		0.5 U		0.5 UJ	0.52 U	0.51 U	0.74 U
Heptachlor Epoxide	0.5 U		0.5 U		0.5 UJ	0.52 U	0.51 U	0.74 U
Methoxychlor	0.5 U		0.5 U		0.5 UJ	0.52 U	0.51 U	0.74 U
Technical Chlordane	60.05 J		7.2 J		17.38 J	54.02 J	37.95 J	6.62 J
Toxaphene	12.57 U		12.58 U		12.55 UJ	6.49 U	8.58 U	18.39 U
Inorganics (mg/Kg)								
Aluminum	4.38		0.443 U		1.92		1.26	1.12 U
Antimony	0.034 U		0.034 U		0.034 U		0.034 U	0.034 U
Arsenic	0.0444 U		0.0563 U		0.034 U		0.0417 U	0.034 U
Barium	0.87		0.016 U		0.481		0.316	0.0126 U
Beryllium	0.00509		0.004 U		0.0044		0.00289	0.004 U
Cadmium	0.0107 J		0.2 U		0.0267 J		0.0175 J	0.2 U
Chromium	0.269 U		0.269 U		0.269 U		0.269 U	0.269 U
Cobalt	0.0292 J		0.0063 J		0.0422 J		0.0299 J	0.0083 J
Copper	0.539		0.249		0.974		0.725	0.242
Iron	20.7		2.43		28.6		19.6	1.94
Lead	0.0535		0.0132 U		0.0466		0.0306	0.022 U
Manganese	2.92		0.102		3.01		2.01	0.189
Mercury	0.271 J		0.497 J		0.294 J		0.364 J	0.189 J
Mercury (methyl)	0.274		0.484		0.31		0.37	0.19
Molybdenum	0.32 U		0.32 U		0.32 U		0.32 U	0.32 U
Nickel	0.32 U		0.32 U		0.32 U		0.32 U	0.32 U
Selenium	0.268 J		0.175 J		0.345 J		0.287 J	0.448 U
Silver	0.06 U		0.06 U		0.06 U		0.06 U	0.06 UJ
Thallium	0.00244 J		0.00187 J		0.0082 J		0.00603 J	0.00284 J
Vanadium	0.179 U		0.179 U		0.179 U		0.179 U	0.179 U
Zinc	14 J		5.65 J		17.5 J		13.4 J	5.08 J
Dioxins/Furans (ug/Kg)								
HCX	0.01993 UJ		0.0199 UJ		0.01999 UJ		0.01996 UJ	0.01996 UJ
TCX	R		R		R		R	R

Table A-13
Summary Statistics and Analytical Results for Largemouth Bass - Upstream

Data Evaluation Report
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North Providence, RI

PARAMETER	GMP-LB-5004-0000-01-W 6/25/2001	GMP-LB-5005-0000-01-F 6/25/2001 DUPLICATE	GMP-LB-5005-0000-01-F 6/25/2001	GMP-LB-5005-0000-01-O 6/25/2001 DUPLICATE	GMP-LB-5005-0000-01-O 6/25/2001	GMP-LB-5005-0000-01-O 6/25/2001 REEXTRACTED	GMP-LB-5005-0000-01-W 6/25/2001	GMP-LB-5006-0000-01-F 6/25/2001
2,3,7,8-TCDD	0.00013 J		0.00004 UJ		0.00034 J		0.00022 J	0.00014 UJ
1,2,3,7,8-PeCDD	0.00032 UJ		0.00013 UJ		0.00036 J		0.00024 J	0.00012 UJ
1,2,3,4,7,8-HxCDD	0.00041 UJ		0.00012 UJ		0.00006 J		0.00004 J	0.00015 UJ
1,2,3,6,7,8-HxCDD	0.0004 UJ		0.00013 UJ		0.00023 J		0.00015 J	0.00015 UJ
1,2,3,7,8,9-HxCDD	0.00038 UJ		0.00012 UJ		0.00017 UJ		0.00015 UJ	0.00014 UJ
1,2,3,4,6,7,8-HpCDD	0.00091 UJ		0.00036 UJ		0.00026 UJ		0.00029 UJ	0.00033 UJ
OCDD	0.00056 UJ		0.00024 UJ		0.00066 UJ		0.00052 UJ	0.00016 UJ
2,3,7,8-TCDF	0.00017 J		0.00003 UJ		0.00047 J		0.00031 J	0.00004 UJ
1,2,3,7,8-PeCDF	0.00015 UJ		0.00017 UJ		0.00012 J		0.00008 J	0.00012 UJ
2,3,4,7,8-PeCDF	0.00013 J		0.00016 UJ		0.00028 J		0.00018 J	0.00011 UJ
1,2,3,4,7,8-HxCDF	0.0002 UJ		0.00005 UJ		0.00015 UJ		0.00012 UJ	0.00004 UJ
1,2,3,6,7,8-HxCDF	0.00021 UJ		0.00006 UJ		0.00011 UJ		0.00009 UJ	0.00009 UJ
2,3,4,6,7,8-HxCDF	0.00021 UJ		0.00006 UJ		0.00018 UJ		0.00014 UJ	0.0001 UJ
1,2,3,7,8,9-HxCDF	0.00023 UJ		0.00007 UJ		0.00018 UJ		0.00014 UJ	0.00012 UJ
1,2,3,4,6,7,8-HpCDF	0.00037 UJ		0.00003 UJ		0.0001 UJ		0.00008 UJ	0.00023 UJ
1,2,3,4,7,8,9-HpCDF	0.00042 UJ		0.00013 UJ		0.00022 UJ		0.00019 UJ	0.00031 UJ
OCDF	0.0002 UJ		0.00016 UJ		0.00012 UJ		0.00013 UJ	0.00013 UJ
Total TCDD	0.00013 J		0.00004 UJ		0.00034 J		0.00022 J	0.00014 UJ
Total PeCDD	0.00032 UJ		0.00137 J		0.00042 J		0.00075 J	0.00006 UJ
Total HxCDD	0.00039 UJ		0.00012 UJ		0.00029 J		0.00019 J	0.00015 UJ
Total HpCDD	0.00091 UJ		0.00036 UJ		0.0003 UJ		0.00032 UJ	0.00033 UJ
Total TCDF	0.00017 J		0.00003 UJ		0.00053 J		0.00035 J	0.00008 UJ
Total PeCDF	0.00031 J		0.00016 UJ		0.0004 J		0.00026 J	0.00011 UJ
Total HxCDF	0.00021 UJ		0.00005 UJ		0.0004 UJ		0.00028 UJ	0.00004 UJ
Total HpCDF	0.00039 UJ		0.00003 UJ		0.00016 UJ		0.00012 UJ	0.00026 UJ
Toxicity Equivalency (Dioxins, Furans, HCX)	0.000218				0.000922		0.000605	
PCB Congeners (ug/Kg)								
2-Monochlorobiphenyl (1)								
4-Chlorobiphenyl (3)								
2,2'-Dichlorobiphenyl (4)								
2,3-Dichlorobiphenyl (5)								
2,3'-Dichlorobiphenyl (6)								
2,4-Dichlorobiphenyl (7)								
2,4'-Dichlorobiphenyl (8)								
2,5-Dichlorobiphenyl (9)								
2,6-Dichlorobiphenyl (10)								
3,4-Dichlorobiphenyl (12)								
2,2',3'-Trichlorobiphenyl (16)								
2,2',4-Trichlorobiphenyl (17)								

Table A-13
Summary Statistics and Analytical Results for Largemouth Bass - Upstream

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North Providence, RI

PARAMETER	GMP-LB-5004-0000-01-W 6/25/2001	GMP-LB-5005-0000-01-F 6/25/2001 DUPLICATE	GMP-LB-5005-0000-01-F 6/25/2001	GMP-LB-5005-0000-01-O 6/25/2001 DUPLICATE	GMP-LB-5005-0000-01-O 6/25/2001	GMP-LB-5005-0000-01-O 6/25/2001 REEXTRACTED	GMP-LB-5005-0000-01-W 6/25/2001	GMP-LB-5006-0000-01-F 6/25/2001
2,2',5-Trichlorobiphenyl (18)								
2,2',6-Trichlorobiphenyl (19)								
2,3,3'-Trichlorobiphenyl (20)								
2,3,4'-Trichlorobiphenyl (22)								
2,3,6-Trichlorobiphenyl (24)								
2,3',4-Trichlorobiphenyl (25)								
2,3',5-Trichlorobiphenyl (26)								
2,4',5-Trichlorobiphenyl (31)								
2,4',6-Trichlorobiphenyl (32)								
2,2',3,3'-Tetrachlorobiphenyl (40)								
2,2',3,4'-Tetrachlorobiphenyl (42)								
2,2',3,5-Tetrachlorobiphenyl (43)								
2,2',3,5'-Tetrachlorobiphenyl (44)								
2,2',3,6-Tetrachlorobiphenyl (45)								
2,2',3,6'-Tetrachlorobiphenyl (46)								
2,2',4,5-Tetrachlorobiphenyl (48)								
2,2',4,5'-Tetrachlorobiphenyl (49)								
2,2',4,6-Tetrachlorobiphenyl (50)								
2,3,3',4'-Tetrachlorobiphenyl (56)								
2,3,3',6-Tetrachlorobiphenyl (59)								
2,3,4,4'-Tetrachlorobiphenyl (60)								
2,3,4,5-Tetrachlorobiphenyl (61)								
2,3,4',5-Tetrachlorobiphenyl (63)								
2,3,4',6-Tetrachlorobiphenyl (64)								
2,3',4,4'-Tetrachlorobiphenyl (66)								
3,3',4,4'-Tetrachlorobiphenyl (77)								
3,4,4',5-Tetrachlorobiphenyl (81)								
2,2',3,3',4-Pentachlorobiphenyl (82)								
2,2',3,3',5-Pentachlorobiphenyl (83)								
2,2',3,3',6-Pentachlorobiphenyl (84)								
2,2',3,4,4'-Pentachlorobiphenyl (85)								
2,2',3,4,5-Pentachlorobiphenyl (86)								
2,2',3,4,6-Pentachlorobiphenyl (88)								
2,2',3,4,6'-Pentachlorobiphenyl (89)								
2,2',3,4',5-Pentachlorobiphenyl (90)								
2,2',3,5,5'-Pentachlorobiphenyl (92)								
2,2',3,5,6-Pentachlorobiphenyl (93)								
2,3,3',4,4'-Pentachlorobiphenyl (105)								
2,3,3',4,5-Pentachlorobiphenyl (106)								

Table A-13
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2,3,3',4',5'-Pentachlorobiphenyl (108)								
2,3,3',4',6-Pentachlorobiphenyl (110)								
2,3,4,4',5-Pentachlorobiphenyl (114)								
2,3',4,4',5-Pentachlorobiphenyl (118)								
3,3',4,4',5-Pentachlorobiphenyl (126)								
2,2',3,3',4,4'-Hexachlorobiphenyl (128)								
2,2',3,3',4,5-Hexachlorobiphenyl (129)								
2,2',3,3',4,5'-Hexachlorobiphenyl (130)								
2,2',3,3',4,6-Hexachlorobiphenyl (131)								
2,2',3,3',4,6'-Hexachlorobiphenyl (132)								
2,2',3,3',5,6-Hexachlorobiphenyl (134)								
2,2',3,3',5,6'-Hexachlorobiphenyl (135)								
2,2',3,3',6,6'-Hexachlorobiphenyl (136)								
2,2',3,4,4',5-Hexachlorobiphenyl (137)								
2,2',3,4,5,5'-Hexachlorobiphenyl (141)								
2,2',3,4,5',6-Hexachlorobiphenyl (144)								
2,2',3,4',5,5'-Hexachlorobiphenyl (146)								
2,2',3,4',5,6-Hexachlorobiphenyl (147)								
2,2',4,4',5,5'-Hexachlorobiphenyl (153)								
2,3,3',4,4',5-Hexachlorobiphenyl (156)								
2,3,3',4,4',6-Hexachlorobiphenyl (158)								
2,3',4,4',5,5'-Hexachlorobiphenyl (167)								
3,3',4,4',5,5'-Hexachlorobiphenyl (169)								
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)								
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)								
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)								
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)								
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)								
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)								
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)								
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)								
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)								
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)								
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)								
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)								
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)								
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)								
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)								
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)								

Table A-13
Summary Statistics and Analytical Results for Largemouth Bass - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	GMP-LB-5004-0000-01-W 6/25/2001	GMP-LB-5005-0000-01-F 6/25/2001 DUPLICATE	GMP-LB-5005-0000-01-F 6/25/2001	GMP-LB-5005-0000-01-O 6/25/2001 DUPLICATE	GMP-LB-5005-0000-01-O 6/25/2001	GMP-LB-5005-0000-01-O 6/25/2001 REEXTRACTED	GMP-LB-5005-0000-01-W 6/25/2001	GMP-LB-5006-0000-01-F 6/25/2001
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)								
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)								
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)								
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)								
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)								
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)								
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (200)								
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)								
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)								
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)								
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl								
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl								
Decachlorobiphenyl (209)								
PCB Congeners, Total								
Toxicity Equivalency (Dioxins, Furans, HCX)								
Toxicity Equivalency (PCB)								
Other (%)								
Lipid_percent		0.669	0.726	5.35	4.96			0.451

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* 106(12):775-792.

Samples ending with:
F - Fillet
O - Offal
W - whole body

Table A-13
Summary Statistics and Analytical Results for Largemouth Bass - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	GMP-LB-5006-0000-01-O 6/25/2001	GMP-LB-5006-0000-01-W 6/25/2001	GMP-LB-5007-0000-01-F 6/25/2001	GMP-LB-5007-0000-01-O 6/25/2001	GMP-LB-5007-0000-01-W 6/25/2001	GMP-LB-5008-0000-01-F 6/25/2001	GMP-LB-5008-0000-01-O 6/25/2001	GMP-LB-5008-0000-01-W 6/25/2001
Semivolatile Organics (ug/Kg)								
1,1'-Biphenyl	0.29 J	0.23 J	0.11 J	0.18 J	0.15 J	0.09 J	0.25 J	0.19 J
2-Methylnaphthalene	3.45	2.21	1.04	2.43	1.91	1.37	3.45	2.7
Acenaphthene	0.76	0.49	0.16 J	0.46 J	0.35 J	0.15 J	0.61 J	0.45 J
Acenaphthylene	0.62 J	0.4 J	0.14 J	0.41 J	0.31 J	0.1 J	0.44 J	0.32 J
Anthracene	0.73	0.5	0.21 J	0.45 J	0.36 J	0.16 J	0.66	0.48
Benzo(a)anthracene	0.12 J	0.08 J	0.63 U	0.08 J	0.05 J	0.63 U	0.14 J	0.09 J
Benzo(a)pyrene	0.62 U	0.73 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U
Benzo(b)fluoranthene	0.15 J	0.1 J	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U
Benzo(g,h,i)perylene	0.62 U	0.73 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U
Benzo(k)fluoranthene	0.1 J	0.06 J	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U
Chrysene	0.36 J	0.26 J	0.1 J	0.26 J	0.2 J	0.06 J	0.27 J	0.19 J
Dibenzo(a,h)anthracene	0.62 U	0.73 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U
Dibenzofuran	0.47 J	0.34 J	0.14 J	0.29 J	0.23 J	0.08 J	0.31 J	0.23 J
Fluoranthene	2.39	1.66	0.73	2.05	1.56	0.56 J	2.16	1.59
Fluorene	1.16	0.8	0.3 J	0.81	0.62	0.27 J	1.08	0.79
Indeno(1,2,3-cd)pyrene	0.15 J	0.1 J	0.63 U	0.1 J	0.06 J	0.63 U	0.63 U	0.63 U
Naphthalene	3.51	2.25	1.1 U	2.38	1.49	1.33 U	3.21	2.06
Phenanthrene	4.29	2.92	1.14	3.05	2.33	0.92	3.72	2.72
Pyrene	0.81 J	0.52 J	0.63 U	0.63 U	0.63 U	0.63 U	0.78 J	0.5 J
Total PAH	19.38 J	12.92 J	4.07 J	12.93 J	9.61 J	3.75 J	17.09 J	12.31 J
Pesticides/PCBs (ug/Kg)								
4,4'-DDD	5.96 J	3.97	1.4	3.73 J	2.85	1.11	4.9 J	3.54
4,4'-DDE	31.17 J	20.5 D	4.83	12.16 J	9.41	21.22 J	126.71 J	88.91 D
4,4'-DDT	1.21 J	0.77	0.31 J	0.86 J	0.65	0.53	2.26 J	1.64
Aldrin	0.5 UJ	0.58 U	0.51 U	0.5 UJ	0.5 U	0.51 U	0.5 UJ	0.5 U
alpha-BHC	0.5 UJ	0.59 U	0.51 U	0.5 UJ	0.5 U	0.51 U	0.5 UJ	0.5 U
alpha-Chlordane	8.72 J	5.79	1.8	5.1 J	3.86	0.81	4.38 J	3.1
Aroclor, Total	221.96 J	147.59	42.37 J	105.61 J	81.88	169.49	941.17 J	664.67
Aroclor-1016	6.23 UJ	7.29 U	6.32 U	6.27 UJ	6.29 U	6.31 U	6.28 UJ	6.29 U
Aroclor-1221	6.23 UJ	7.29 U	6.32 U	6.27 UJ	6.29 U	6.31 U	6.28 UJ	6.29 U
Aroclor-1232	6.23 UJ	7.29 U	6.32 U	6.27 UJ	6.29 U	6.31 U	6.28 UJ	6.29 U
Aroclor-1242	6.23 UJ	7.29 U	6.32 U	6.27 UJ	6.29 U	6.31 U	6.28 UJ	6.29 U
Aroclor-1248	6.23 UJ	7.29 U	6.32 U	6.27 UJ	6.29 U	6.31 U	6.28 UJ	6.29 U
Aroclor-1254	192.08 J	126.62 D	30.24	75.5 J	58.52	101.39	784.84 J	539.95 D
Aroclor-1260	6.23 UJ	7.29 U	6.32 U	6.27 UJ	6.29 U	6.31 U	6.28 UJ	6.29 U
Aroclor-1268	29.88 J	20.97 DJ	12.13	30.11 J	23.36	68.1	156.33 J	124.72 D
beta-BHC	0.5 UJ	0.58 U	0.51 U	0.5 UJ	0.5 U	0.51 U	0.5 UJ	0.5 U
delta-BHC	0.5 UJ	0.59 U	0.51 U	0.5 UJ	0.5 U	0.51 U	0.5 UJ	0.5 U

Table A-13
Summary Statistics and Analytical Results for Largemouth Bass - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	GMP-LB-5006-0000-01-O 6/25/2001	GMP-LB-5006-0000-01-W 6/25/2001	GMP-LB-5007-0000-01-F 6/25/2001	GMP-LB-5007-0000-01-O 6/25/2001	GMP-LB-5007-0000-01-W 6/25/2001	GMP-LB-5008-0000-01-F 6/25/2001	GMP-LB-5008-0000-01-O 6/25/2001	GMP-LB-5008-0000-01-W 6/25/2001
Dieldrin	1.38 J	0.93	0.42 J	0.96 J	0.76	0.42 J	1.46 J	1.09
Endosulfan I	0.5 UJ	0.58 U	0.51 U	0.5 UJ	0.5 U	0.51 U	0.5 UJ	0.5 U
Endosulfan II	0.5 UJ	0.58 U	0.51 U	0.5 UJ	0.5 U	0.51 U	0.5 UJ	0.5 U
Endosulfan Sulfate	0.5 UJ	0.58 U	0.51 U	0.5 UJ	0.5 U	0.51 U	0.5 UJ	0.5 U
Endrin	0.5 UJ	0.58 U	0.51 U	0.5 UJ	0.5 U	0.51 U	0.5 UJ	0.5 U
Endrin Aldehyde	0.5 UJ	0.58 U	0.51 U	0.5 UJ	0.5 U	0.51 U	0.5 UJ	0.5 U
Endrin Ketone	0.5 UJ	0.58 U	0.51 U	0.5 UJ	0.5 U	0.51 U	0.5 UJ	0.5 U
gamma-BHC	0.5 UJ	0.04 J	0.51 U	0.5 UJ	0.5 U	0.51 U	0.5 UJ	0.5 U
gamma-Chlordane	3.54 J	2.36	0.76	2.25 J	1.69	0.31 J	1.46 J	1.05
Heptachlor	0.5 UJ	0.58 U	0.51 U	0.5 UJ	0.5 U	0.51 U	0.5 UJ	0.5 U
Heptachlor Epoxide	0.5 UJ	0.58 U	0.51 U	0.5 UJ	0.5 U	0.51 U	0.5 UJ	0.5 U
Methoxychlor	0.05 J	0.04 J	0.51 U	0.5 UJ	0.5 U	0.51 U	0.5 UJ	0.5 U
Technical Chlordane	71.44 J	48.17 J	17.94 J	48.02 J	36.73 J	16.87 J	67.56 J	49.39 J
Toxaphene	12.46 UJ	14.59 U	12.64 U	12.53 UJ	12.57 U	12.63 U	12.55 UJ	12.58 U
Inorganics (mg/Kg)								
Aluminum	2.5	1.6	1.12 J	3.31	2.49	2.5	0.928 J	1.49 J
Antimony	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U
Arsenic	0.034 U	0.034 U	0.034 U	0.0614 U	0.0511 U	0.034 U	0.034 U	0.034 U
Barium	0.464	0.297	0.0214 U	0.798 J	0.499 J	0.0677 J	0.796 J	0.535 J
Beryllium	0.00375 J	0.0024 J	0.004 U	0.00481	0.00301	0.004 U	0.00038 J	0.000244 J
Cadmium	0.0133 J	0.00853 J	0.2 U	0.0154 J	0.00962 J	0.2 U	0.0205 J	0.0132 J
Chromium	0.269 U	0.269 U	0.269 U	0.269 U	0.269 U	0.269 U	0.269 U	0.269 U
Cobalt	0.0354 J	0.0257 J	0.00706 J	0.0373 J	0.026 J	0.00604 J	0.0538 J	0.0367 J
Copper	0.954	0.698	0.299	1.05	0.768	0.29	0.954	0.716
Iron	18.5	12.6	4.39	22.2 J	15.5 J	4.76 J	128 J	83.8 J
Lead	0.0369	0.0237	0.022 U	0.0448	0.028	0.022 U	0.0468	0.03
Manganese	3.22	2.13	0.183	4	2.57	0.215	2.83	1.89
Mercury	0.139 J	0.157 J	0.214 J	0.122 J	0.157 J	0.708 J	0.424 J	0.526 J
Mercury (methyl)	0.143	0.16	0.191	0.106	0.138	0.652	0.515	0.564
Molybdenum	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.0283 J	0.0182 J
Nickel	0.0789 J	0.0506 J	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
Selenium	0.255 J	0.163 J	0.448 U	0.258 J	0.161 J	0.179 J	0.307 J	0.261 J
Silver	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Thallium	0.00474 J	0.00406 J	0.00329 J	0.00342 J	0.00337 J	0.00226 J	0.00491 J	0.00396 J
Vanadium	0.179 U	0.179 U	0.179 UJ	0.179 UJ	0.179 UJ	0.179 UJ	0.179 U	0.179 U
Zinc	15.7 J	11.9 J	6.49 J	18.2 J	13.8 J	6.87 J	16.5 J	13 J
Dioxins/Furans (ug/Kg)								
HCX	0.01999 UJ	0.01998 UJ	0.01992 UJ	0.01991 UJ	0.01991 UJ	0.01998 UJ	0.01995 UJ	0.01996 UJ
TCX	R	R	R	R	R	R	R	R

Table A-13
Summary Statistics and Analytical Results for Largemouth Bass - Upstream

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PARAMETER	GMP-LB-5006-0000-01-O 6/25/2001	GMP-LB-5006-0000-01-W 6/25/2001	GMP-LB-5007-0000-01-F 6/25/2001	GMP-LB-5007-0000-01-O 6/25/2001	GMP-LB-5007-0000-01-W 6/25/2001	GMP-LB-5008-0000-01-F 6/25/2001	GMP-LB-5008-0000-01-O 6/25/2001	GMP-LB-5008-0000-01-W 6/25/2001
2,3,7,8-TCDD	0.0004 J	0.00026 J	0.00006 UJ	0.00021 J	0.00013 J	0.00007 UJ	0.00033 J	0.00021 J
1,2,3,7,8-PeCDD	0.00023 J	0.00015 J	0.00015 UJ	0.00024 UJ	0.00021 UJ	0.00035 UJ	0.0002 UJ	0.00025 UJ
1,2,3,4,7,8-HxCDD	0.00004 J	0.00003 J	0.00014 UJ	0.00016 UJ	0.00015 UJ	0.00025 UJ	0.00012 UJ	0.00017 UJ
1,2,3,6,7,8-HxCDD	0.00017 J	0.00011 J	0.00014 UJ	0.00016 J	0.0001 J	0.00026 UJ	0.00019 J	0.00012 J
1,2,3,7,8,9-HxCDD	0.00017 UJ	0.00016 UJ	0.00014 UJ	0.00015 UJ	0.00015 UJ	0.00024 UJ	0.00011 UJ	0.00016 UJ
1,2,3,4,6,7,8-HpCDD	0.00019 UJ	0.00024 UJ	0.00042 UJ	0.00012 UJ	0.00023 UJ	0.0005 UJ	0.00017 UJ	0.00029 UJ
OCDD	0.00038 UJ	0.0003 UJ	0.00029 UJ	0.00031 UJ	0.0003 UJ	0.00015 UJ	0.00034 UJ	0.00027 UJ
2,3,7,8-TCDF	0.00046 J	0.00029 J	0.00006 UJ	0.00029 J	0.00018 J	0.00006 UJ	0.00041 J	0.00026 J
1,2,3,7,8-PeCDF	0.00016 UJ	0.00015 UJ	0.00011 UJ	0.00007 J	0.00004 J	0.00012 UJ	0.00007 J	0.00004 J
2,3,4,7,8-PeCDF	0.00019 J	0.00012 J	0.00011 UJ	0.00014 J	0.00009 J	0.00012 UJ	0.00017 UJ	0.00015 UJ
1,2,3,4,7,8-HxCDF	0.00006 UJ	0.00005 UJ	0.00007 UJ	0.00008 UJ	0.00008 UJ	0.00011 UJ	0.00017 UJ	0.00015 UJ
1,2,3,6,7,8-HxCDF	0.00004 UJ	0.00006 UJ	0.00011 UJ	0.00013 UJ	0.00012 UJ	0.00011 UJ	0.00008 UJ	0.00009 UJ
2,3,4,6,7,8-HxCDF	0.00016 UJ	0.00014 UJ	0.00008 UJ	0.00014 UJ	0.00012 UJ	0.00011 UJ	0.00008 UJ	0.00009 UJ
1,2,3,7,8,9-HxCDF	0.00017 UJ	0.00015 UJ	0.00014 UJ	0.00015 UJ	0.00015 UJ	0.00014 UJ	0.0001 UJ	0.00011 UJ
1,2,3,4,6,7,8-HpCDF	0.00004 UJ	0.00011 UJ	0.00021 UJ	0.00006 UJ	0.00012 UJ	0.0003 UJ	0.00007 UJ	0.00015 UJ
1,2,3,4,7,8,9-HpCDF	0.00025 UJ	0.00027 UJ	0.00025 UJ	0.00013 UJ	0.00018 UJ	0.00036 UJ	0.00015 UJ	0.00023 UJ
OCDF	0.00009 UJ	0.0001 UJ	0.00009 UJ	0.00016 UJ	0.00013 UJ	0.00024 UJ	0.00021 UJ	0.00022 UJ
Total TCDD	0.0004 J	0.00026 J	0.00006 UJ	0.00021 J	0.00013 J	0.00007 UJ	0.00033 J	0.00021 J
Total PeCDD	0.00023 J	0.00015 J	0.0011 J	0.00018 J	0.00053 J	0.00149 J	0.00009 J	0.00059 J
Total HxCDD	0.00021 J	0.00013 J	0.00014 UJ	0.00016 J	0.0001 J	0.00025 UJ	0.00019 J	0.00012 J
Total HpCDD	0.00019 UJ	0.00024 UJ	0.00042 UJ	0.00012 UJ	0.00023 UJ	0.0005 UJ	0.00017 UJ	0.00029 UJ
Total TCDF	0.00046 J	0.00029 J	0.00009 UJ	0.00029 J	0.00018 J	0.00006 UJ	0.00046 J	0.0003 J
Total PeCDF	0.00019 J	0.00012 J	0.00011 UJ	0.00021 J	0.00013 J	0.00001 UJ	0.00052 J	0.00033 J
Total HxCDF	0.00009 UJ	0.00007 UJ	0.00017 UJ	0.00008 UJ	0.00011 UJ	0.00011 UJ	0.00018 UJ	0.00015 UJ
Total HpCDF	0.00004 UJ	0.00012 UJ	0.00023 UJ	0.00006 UJ	0.00012 UJ	0.00032 UJ	0.00013 UJ	0.0002 UJ
Toxicity Equivalency (Dioxins, Furans, HCX)	0.000792	0.000508		0.000329	0.000205		0.000394	0.000253
PCB Congeners (ug/Kg)								
2-Monochlorobiphenyl (1)								
4-Chlorobiphenyl (3)								
2,2'-Dichlorobiphenyl (4)								
2,3-Dichlorobiphenyl (5)								
2,3'-Dichlorobiphenyl (6)								
2,4-Dichlorobiphenyl (7)								
2,4'-Dichlorobiphenyl (8)								
2,5-Dichlorobiphenyl (9)								
2,6-Dichlorobiphenyl (10)								
3,4-Dichlorobiphenyl (12)								
2,2',3'-Trichlorobiphenyl (16)								
2,2',4-Trichlorobiphenyl (17)								

Table A-13
Summary Statistics and Analytical Results for Largemouth Bass - Upstream

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PARAMETER	GMP-LB-5006-0000-01-O 6/25/2001	GMP-LB-5006-0000-01-W 6/25/2001	GMP-LB-5007-0000-01-F 6/25/2001	GMP-LB-5007-0000-01-O 6/25/2001	GMP-LB-5007-0000-01-W 6/25/2001	GMP-LB-5008-0000-01-F 6/25/2001	GMP-LB-5008-0000-01-O 6/25/2001	GMP-LB-5008-0000-01-W 6/25/2001
2,2',5-Trichlorobiphenyl (18)								
2,2',6-Trichlorobiphenyl (19)								
2,3,3'-Trichlorobiphenyl (20)								
2,3,4'-Trichlorobiphenyl (22)								
2,3,6-Trichlorobiphenyl (24)								
2,3',4-Trichlorobiphenyl (25)								
2,3',5-Trichlorobiphenyl (26)								
2,4',5-Trichlorobiphenyl (31)								
2,4',6-Trichlorobiphenyl (32)								
2,2',3,3'-Tetrachlorobiphenyl (40)								
2,2',3,4'-Tetrachlorobiphenyl (42)								
2,2',3,5-Tetrachlorobiphenyl (43)								
2,2',3,5'-Tetrachlorobiphenyl (44)								
2,2',3,6-Tetrachlorobiphenyl (45)								
2,2',3,6'-Tetrachlorobiphenyl (46)								
2,2',4,5-Tetrachlorobiphenyl (48)								
2,2',4,5'-Tetrachlorobiphenyl (49)								
2,2',4,6-Tetrachlorobiphenyl (50)								
2,3,3',4'-Tetrachlorobiphenyl (56)								
2,3,3',6-Tetrachlorobiphenyl (59)								
2,3,4,4'-Tetrachlorobiphenyl (60)								
2,3,4,5-Tetrachlorobiphenyl (61)								
2,3,4',5-Tetrachlorobiphenyl (63)								
2,3,4',6-Tetrachlorobiphenyl (64)								
2,3',4,4'-Tetrachlorobiphenyl (66)								
3,3',4,4'-Tetrachlorobiphenyl (77)								
3,4,4',5-Tetrachlorobiphenyl (81)								
2,2',3,3',4-Pentachlorobiphenyl (82)								
2,2',3,3',5-Pentachlorobiphenyl (83)								
2,2',3,3',6-Pentachlorobiphenyl (84)								
2,2',3,4,4'-Pentachlorobiphenyl (85)								
2,2',3,4,5-Pentachlorobiphenyl (86)								
2,2',3,4,6-Pentachlorobiphenyl (88)								
2,2',3,4,6'-Pentachlorobiphenyl (89)								
2,2',3,4',5-Pentachlorobiphenyl (90)								
2,2',3,5,5'-Pentachlorobiphenyl (92)								
2,2',3,5,6-Pentachlorobiphenyl (93)								
2,3,3',4,4'-Pentachlorobiphenyl (105)								
2,3,3',4,5-Pentachlorobiphenyl (106)								

Table A-13
Summary Statistics and Analytical Results for Largemouth Bass - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	GMP-LB-5006-0000-01-O 6/25/2001	GMP-LB-5006-0000-01-W 6/25/2001	GMP-LB-5007-0000-01-F 6/25/2001	GMP-LB-5007-0000-01-O 6/25/2001	GMP-LB-5007-0000-01-W 6/25/2001	GMP-LB-5008-0000-01-F 6/25/2001	GMP-LB-5008-0000-01-O 6/25/2001	GMP-LB-5008-0000-01-W 6/25/2001
2,3,3',4',5'-Pentachlorobiphenyl (108)								
2,3,3',4',6-Pentachlorobiphenyl (110)								
2,3,4,4',5-Pentachlorobiphenyl (114)								
2,3',4,4',5-Pentachlorobiphenyl (118)								
3,3',4,4',5-Pentachlorobiphenyl (126)								
2,2',3,3',4,4'-Hexachlorobiphenyl (128)								
2,2',3,3',4,5-Hexachlorobiphenyl (129)								
2,2',3,3',4,5'-Hexachlorobiphenyl (130)								
2,2',3,3',4,6-Hexachlorobiphenyl (131)								
2,2',3,3',4,6'-Hexachlorobiphenyl (132)								
2,2',3,3',5,6-Hexachlorobiphenyl (134)								
2,2',3,3',5,6'-Hexachlorobiphenyl (135)								
2,2',3,3',6,6'-Hexachlorobiphenyl (136)								
2,2',3,4,4',5-Hexachlorobiphenyl (137)								
2,2',3,4,5,5'-Hexachlorobiphenyl (141)								
2,2',3,4,5',6-Hexachlorobiphenyl (144)								
2,2',3,4',5,5'-Hexachlorobiphenyl (146)								
2,2',3,4',5,6-Hexachlorobiphenyl (147)								
2,2',4,4',5,5'-Hexachlorobiphenyl (153)								
2,3,3',4,4',5-Hexachlorobiphenyl (156)								
2,3,3',4,4',6-Hexachlorobiphenyl (158)								
2,3',4,4',5,5'-Hexachlorobiphenyl (167)								
3,3',4,4',5,5'-Hexachlorobiphenyl (169)								
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)								
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)								
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)								
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)								
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)								
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)								
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)								
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)								
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)								
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)								
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)								
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)								
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)								
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)								
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)								
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)								

Table A-13
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Centredale Manor Restoration Project Superfund Site
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PARAMETER	GMP-LB-5006-0000-01-O 6/25/2001	GMP-LB-5006-0000-01-W 6/25/2001	GMP-LB-5007-0000-01-F 6/25/2001	GMP-LB-5007-0000-01-O 6/25/2001	GMP-LB-5007-0000-01-W 6/25/2001	GMP-LB-5008-0000-01-F 6/25/2001	GMP-LB-5008-0000-01-O 6/25/2001	GMP-LB-5008-0000-01-W 6/25/2001
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)								
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)								
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)								
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)								
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)								
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)								
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (200)								
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)								
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)								
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)								
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl								
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl								
Decachlorobiphenyl (209)								
PCB Congeners, Total								
Toxicity Equivalency (Dioxins, Furans, HCX)								
Toxicity Equivalency (PCB)								
Other (%)								
Lipid_percent	3.64		0.89	2.55		0.889	3.71	

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* **106**(12):775-792.

Samples ending with:
F - Fillet
O - Offal
W - whole body

Table A-13
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PARAMETER	GMP-LB-5009-0000-01-F 6/25/2001	GMP-LB-5009-0000-01-O 6/25/2001	GMP-LB-5009-0000-01-W 6/25/2001	GMP-LB-5010-0000-01-F 6/25/2001	GMP-LB-5010-0000-01-O 6/25/2001	GMP-LB-5010-0000-01-W 6/25/2001
Semivolatile Organics (ug/Kg)						
1,1'-Biphenyl	0.16 J	0.16 J	0.16 J	0.21 J	0.27 J	0.25 J
2-Methylnaphthalene	1.8 U	2.28	1.52	2.58	4.84	4.25
Acenaphthene	1.8 U	0.32 J	0.21 J	1.84 U	0.54 J	0.4 J
Acenaphthylene	1.8 U	0.21 J	0.14 J	0.17 J	0.53 J	0.44 J
Anthracene	0.1 J	0.22 J	0.18 J	0.14 J	0.39 J	0.32 J
Benzo(a)anthracene	1.8 U	0.18 J	0.12 J	1.84 U	0.24 J	0.18 J
Benzo(a)pyrene	1.8 U	0.62 U	1.01 U	1.84 U	0.22 J	0.16 J
Benzo(b)fluoranthene	1.8 U	0.62 U	1.01 U	1.84 U	0.25 J	0.18 J
Benzo(g,h,i)perylene	1.8 U	0.62 U	1.01 U	1.84 U	0.62 U	0.94 U
Benzo(k)fluoranthene	1.8 U	0.62 U	1.01 U	1.84 U	0.22 J	0.16 J
Chrysene	0.09 J	0.23 J	0.18 J	1.84 U	0.43 J	0.32 J
Dibenzo(a,h)anthracene	1.8 U	0.62 U	1.01 U	1.84 U	0.62 U	0.94 U
Dibenzofuran	0.13 J	0.21 J	0.18 J	0.19 J	0.41 J	0.35 J
Fluoranthene	1.8 U	0.97	0.65	1.84 U	2.27	1.67
Fluorene	0.26 J	0.54 J	0.45 J	0.34 J	0.92	0.77
Indeno(1,2,3-cd)pyrene	1.8 U	0.09 J	0.06 J	1.84 U	0.21 J	0.16 J
Naphthalene	1.8 U	2.23	1.49	2.72 U	4.34	3.2
Phenanthrene	1.8 U	1.24	0.82	1.84 U	2.74	2.02
Pyrene	1.8 U	0.62 U	1.01 U	1.84 U	1.06 J	0.78 J
Total PAH	0.75 J	8.87 J	6.16 J	3.63 J	19.89 J	15.61 J
Pesticides/PCBs (ug/Kg)						
4,4'-DDD	1.51	6.14 J	4.6	0.54 J	3.96	3.06
4,4'-DDE	15.5	124.65 J	88.23 D	5.24	98.3 J	73.8 D
4,4'-DDT	0.93 J	3.51 J	2.65	0.33 J	2.3	1.78
Aldrin	1.44 U	0.5 UJ	0.81 U	1.47 U	0.5 U	0.75 U
alpha-BHC	1.44 U	0.5 UJ	0.81 U	1.48 U	0.5 U	0.76 U
alpha-Chlordane	0.5 J	2.42 J	1.78	0.43 J	3	2.32
Aroclor, Total	185.55	768.6 J	574.09	48.91 J	177.56	143.69
Aroclor-1016	17.98 U	6.21 UJ	10.13 U	18.39 U	6.2 U	9.41 U
Aroclor-1221	17.98 U	6.21 UJ	10.13 U	18.39 U	6.2 U	9.41 U
Aroclor-1232	17.98 U	6.21 UJ	10.13 U	18.39 U	6.2 U	9.41 U
Aroclor-1242	17.98 U	6.21 UJ	10.13 U	18.39 U	6.2 U	9.41 U
Aroclor-1248	17.98 U	6.21 UJ	10.13 U	18.39 U	6.2 U	9.41 U
Aroclor-1254	100.38	610.19 J	440.11 D	23.03	88.19	71.04
Aroclor-1260	17.98 U	6.21 UJ	10.13 U	18.39 U	6.2 U	9.41 U
Aroclor-1268	85.18	158.41 J	133.98 D	25.88	89.37	72.66
beta-BHC	1.44 U	0.5 UJ	0.81 U	1.47 U	0.5 U	0.75 U
delta-BHC	1.44 U	0.5 UJ	0.81 U	1.48 U	0.5 U	0.76 U

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PARAMETER	GMP-LB-5009-0000-01-F 6/25/2001	GMP-LB-5009-0000-01-O 6/25/2001	GMP-LB-5009-0000-01-W 6/25/2001	GMP-LB-5010-0000-01-F 6/25/2001	GMP-LB-5010-0000-01-O 6/25/2001	GMP-LB-5010-0000-01-W 6/25/2001
Dieldrin	0.31 J	0.49 J	0.43 J	1.48 U	1.02	0.75 J
Endosulfan I	1.44 U	0.5 UJ	0.81 U	1.48 U	0.5 U	0.75 U
Endosulfan II	1.44 U	0.5 UJ	0.81 U	1.47 U	0.5 U	0.75 U
Endosulfan Sulfate	1.44 U	0.5 UJ	0.81 U	1.47 U	0.5 U	0.75 U
Endrin	1.44 U	0.5 UJ	0.81 U	1.47 U	0.5 U	0.75 U
Endrin Aldehyde	1.44 U	0.5 UJ	0.81 U	1.48 U	0.5 U	0.75 U
Endrin Ketone	1.44 U	0.5 UJ	0.81 U	1.47 U	0.5 U	0.75 U
gamma-BHC	1.44 U	0.5 UJ	0.81 U	1.47 U	0.5 U	0.75 U
gamma-Chlordane	0.44 J	0.75 J	0.65 J	1.48 U	1.3	0.96
Heptachlor	1.44 U	0.5 UJ	0.81 U	1.47 U	0.5 U	0.75 U
Heptachlor Epoxide	1.44 U	0.5 UJ	0.81 U	1.47 U	0.5 U	0.75 U
Methoxychlor	1.44 U	0.5 UJ	0.81 U	1.48 U	0.5 U	0.75 U
Technical Chlordane	179.75 U	65.62 J	43.73 J	183.94 U	32.72 J	24.11 J
Toxaphene	35.95 U	12.42 UJ	20.27 U	36.79 U	12.41 U	18.83 U
Inorganics (mg/Kg)						
Aluminum	0.271 U	4.47	2.98	1.12 U	5.65	4.16
Antimony	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U
Arsenic	0.034 U	0.107 U	0.0826 U	0.0534 U	0.0573 U	0.0563 U
Barium	0.0597 J	2.47 J	1.67 J	0.0517 U	1.18 J	0.869 J
Beryllium	0.004 U	0.00492	0.00328	0.004 U	0.00368 J	0.00271 J
Cadmium	0.2 U	0.2 U	0.2 U	0.2 U	0.0205 J	0.0151 J
Chromium	0.269 U	0.225 J	0.15 J	0.0579 J	0.206 J	0.167 J
Cobalt	0.00804 J	0.0553 J	0.0395 J	0.00727 J	0.0379 J	0.0298 J
Copper	0.301	2.94	2.06	0.346	0.744	0.639
Iron	11.6 J	33 J	25.9 J	2.14 U	18.4 J	13.6 J
Lead	0.022 U	0.0724 J	0.0482 J	0.022 U	0.0565 J	0.0416 J
Manganese	0.488	9.64 J	6.59 J	0.774 J	9.42 J	7.14 J
Mercury	0.597 J	0.362 J	0.44 J	0.155 J	0.114 J	0.125 J
Mercury (methyl)	0.547	0.407	0.454	0.141	0.115	0.122
Molybdenum	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
Nickel	1.47 J	0.0979 J	0.556 J	0.32 U	0.0529 J	0.039 J
Selenium	0.18 J	0.292 J	0.255 J	0.198 J	0.287 J	0.264 J
Silver	0.06 U	0.0736	0.049	0.0141 J	0.0164 J	0.0158 J
Thallium	0.00246 J	0.00632 J	0.00503 J	0.00312 J	0.00576 J	0.00507 J
Vanadium	0.179 U	0.000641 J	0.000427 J	0.179 UJ	0.0334 J	0.0246 J
Zinc	9.14 J	23.6	18.8	7.17	21.7	17.9
Dioxins/Furans (ug/Kg)						
HCX	0.01996 UJ	0.01992 UJ	0.01993 UJ	0.01997 UJ	0.01995 UJ	0.01996 UJ
TCX	R	R	R	R	R	R

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PARAMETER	GMP-LB-5009-0000-01-F 6/25/2001	GMP-LB-5009-0000-01-O 6/25/2001	GMP-LB-5009-0000-01-W 6/25/2001	GMP-LB-5010-0000-01-F 6/25/2001	GMP-LB-5010-0000-01-O 6/25/2001	GMP-LB-5010-0000-01-W 6/25/2001
2,3,7,8-TCDD	0.00004 UJ	0.0002 J	0.00013 J	0.0002 UJ	0.00083 J	0.00061 J
1,2,3,7,8-PeCDD	0.00019 UJ	0.00019 UJ	0.00019 UJ	0.00018 UJ	0.00015 J	0.00011 J
1,2,3,4,7,8-HxCDD	0.00022 UJ	0.00009 UJ	0.00013 UJ	0.00018 UJ	0.00016 UJ	0.00017 UJ
1,2,3,6,7,8-HxCDD	0.00022 UJ	0.00008 UJ	0.00013 UJ	0.00018 UJ	0.00016 UJ	0.00017 UJ
1,2,3,7,8,9-HxCDD	0.00021 UJ	0.00008 UJ	0.00012 UJ	0.00017 UJ	0.00015 UJ	0.00016 UJ
1,2,3,4,6,7,8-HpCDD	0.00075 UJ	0.00006 UJ	0.00029 UJ	0.0005 UJ	0.00018 UJ	0.00026 UJ
OCDD	0.00019 UJ	0.00023 UJ	0.00022 UJ	0.00029 UJ	0.00047 UJ	0.00042 UJ
2,3,7,8-TCDF	0.00009 UJ	0.00015 J	0.0001 J	0.00004 UJ	0.0004 J	0.00029 J
1,2,3,7,8-PeCDF	0.00011 UJ	0.00007 J	0.00005 J	0.00012 UJ	0.00018 UJ	0.00016 UJ
2,3,4,7,8-PeCDF	0.00009 UJ	0.00015 UJ	0.00013 UJ	0.00002 UJ	0.00008 J	0.00006 J
1,2,3,4,7,8-HxCDF	0.00005 UJ	0.00005 UJ	0.00005 UJ	0.00003 UJ	0.00007 UJ	0.00006 UJ
1,2,3,6,7,8-HxCDF	0.00012 UJ	0.00008 UJ	0.00009 UJ	0.00008 UJ	0.00011 UJ	0.0001 UJ
2,3,4,6,7,8-HxCDF	0.00012 UJ	0.00009 UJ	0.0001 UJ	0.00009 UJ	0.00012 UJ	0.00011 UJ
1,2,3,7,8,9-HxCDF	0.00014 UJ	0.0001 UJ	0.00011 UJ	0.0001 UJ	0.00013 UJ	0.00012 UJ
1,2,3,4,6,7,8-HpCDF	0.00023 UJ	0.00003 UJ	0.0001 UJ	0.0002 UJ	0.00004 UJ	0.00008 UJ
1,2,3,4,7,8,9-HpCDF	0.00025 UJ	0.00008 UJ	0.00014 UJ	0.00023 UJ	0.00023 UJ	0.00023 UJ
OCDF	0.00026 UJ	0.00014 UJ	0.00018 UJ	0.00019 UJ	0.00006 UJ	0.00009 UJ
Total TCDD	0.00004 UJ	0.0002 J	0.00013 J	0.0002 UJ	0.00082 J	0.0006 J
Total PeCDD	0.0002 UJ	0.00022 J	0.00015 J	0.00018 UJ	0.00147 J	0.00108 J
Total HxCDD	0.00001 UJ	0.00008 UJ	0.00006 UJ	0.00018 UJ	0.00015 UJ	0.00016 UJ
Total HpCDD	0.00075 UJ	0.00006 UJ	0.00029 UJ	0.0005 UJ	0.00018 UJ	0.00026 UJ
Total TCDF	0.00009 UJ	0.00015 J	0.0001 J	0.00004 UJ	0.0004 J	0.00029 J
Total PeCDF	0.0001 UJ	0.00007 J	0.00005 J	0.00002 UJ	0.00016 J	0.00012 J
Total HxCDF	0.00005 UJ	0.00005 UJ	0.00005 UJ	0.00003 UJ	0.00007 UJ	0.00006 UJ
Total HpCDF	0.00024 UJ	0.00013 UJ	0.00017 UJ	0.00021 UJ	0.00011 UJ	0.00014 UJ
Toxicity Equivalency (Dioxins, Furans, HCX)		0.000219	0.000146		0.00106	0.000781
PCB Congeners (ug/Kg)						
2-Monochlorobiphenyl (1)						
4-Chlorobiphenyl (3)						
2,2'-Dichlorobiphenyl (4)						
2,3-Dichlorobiphenyl (5)						
2,3'-Dichlorobiphenyl (6)						
2,4-Dichlorobiphenyl (7)						
2,4'-Dichlorobiphenyl (8)						
2,5-Dichlorobiphenyl (9)						
2,6-Dichlorobiphenyl (10)						
3,4-Dichlorobiphenyl (12)						
2,2',3'-Trichlorobiphenyl (16)						
2,2',4-Trichlorobiphenyl (17)						

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2,2',5-Trichlorobiphenyl (18)						
2,2',6-Trichlorobiphenyl (19)						
2,3,3'-Trichlorobiphenyl (20)						
2,3,4'-Trichlorobiphenyl (22)						
2,3,6-Trichlorobiphenyl (24)						
2,3',4-Trichlorobiphenyl (25)						
2,3',5-Trichlorobiphenyl (26)						
2,4',5-Trichlorobiphenyl (31)						
2,4',6-Trichlorobiphenyl (32)						
2,2',3,3'-Tetrachlorobiphenyl (40)						
2,2',3,4'-Tetrachlorobiphenyl (42)						
2,2',3,5-Tetrachlorobiphenyl (43)						
2,2',3,5'-Tetrachlorobiphenyl (44)						
2,2',3,6-Tetrachlorobiphenyl (45)						
2,2',3,6'-Tetrachlorobiphenyl (46)						
2,2',4,5-Tetrachlorobiphenyl (48)						
2,2',4,5'-Tetrachlorobiphenyl (49)						
2,2',4,6-Tetrachlorobiphenyl (50)						
2,3,3',4'-Tetrachlorobiphenyl (56)						
2,3,3',6-Tetrachlorobiphenyl (59)						
2,3,4,4'-Tetrachlorobiphenyl (60)						
2,3,4,5-Tetrachlorobiphenyl (61)						
2,3,4',5-Tetrachlorobiphenyl (63)						
2,3,4',6-Tetrachlorobiphenyl (64)						
2,3',4,4'-Tetrachlorobiphenyl (66)						
3,3',4,4'-Tetrachlorobiphenyl (77)						
3,4,4',5-Tetrachlorobiphenyl (81)						
2,2',3,3',4-Pentachlorobiphenyl (82)						
2,2',3,3',5-Pentachlorobiphenyl (83)						
2,2',3,3',6-Pentachlorobiphenyl (84)						
2,2',3,4,4'-Pentachlorobiphenyl (85)						
2,2',3,4,5-Pentachlorobiphenyl (86)						
2,2',3,4,6-Pentachlorobiphenyl (88)						
2,2',3,4,6'-Pentachlorobiphenyl (89)						
2,2',3,4',5-Pentachlorobiphenyl (90)						
2,2',3,5,5'-Pentachlorobiphenyl (92)						
2,2',3,5,6-Pentachlorobiphenyl (93)						
2,3,3',4,4'-Pentachlorobiphenyl (105)						
2,3,3',4,5-Pentachlorobiphenyl (106)						

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PARAMETER	GMP-LB-5009-0000-01-F 6/25/2001	GMP-LB-5009-0000-01-O 6/25/2001	GMP-LB-5009-0000-01-W 6/25/2001	GMP-LB-5010-0000-01-F 6/25/2001	GMP-LB-5010-0000-01-O 6/25/2001	GMP-LB-5010-0000-01-W 6/25/2001
2,3,3',4',5'-Pentachlorobiphenyl (108)						
2,3,3',4',6-Pentachlorobiphenyl (110)						
2,3,4,4',5-Pentachlorobiphenyl (114)						
2,3',4,4',5-Pentachlorobiphenyl (118)						
3,3',4,4',5-Pentachlorobiphenyl (126)						
2,2',3,3',4,4'-Hexachlorobiphenyl (128)						
2,2',3,3',4,5-Hexachlorobiphenyl (129)						
2,2',3,3',4,5'-Hexachlorobiphenyl (130)						
2,2',3,3',4,6-Hexachlorobiphenyl (131)						
2,2',3,3',4,6'-Hexachlorobiphenyl (132)						
2,2',3,3',5,6-Hexachlorobiphenyl (134)						
2,2',3,3',5,6'-Hexachlorobiphenyl (135)						
2,2',3,3',6,6'-Hexachlorobiphenyl (136)						
2,2',3,4,4',5-Hexachlorobiphenyl (137)						
2,2',3,4,5,5'-Hexachlorobiphenyl (141)						
2,2',3,4,5',6-Hexachlorobiphenyl (144)						
2,2',3,4',5,5'-Hexachlorobiphenyl (146)						
2,2',3,4',5,6-Hexachlorobiphenyl (147)						
2,2',4,4',5,5'-Hexachlorobiphenyl (153)						
2,3,3',4,4',5-Hexachlorobiphenyl (156)						
2,3,3',4,4',6-Hexachlorobiphenyl (158)						
2,3',4,4',5,5'-Hexachlorobiphenyl (167)						
3,3',4,4',5,5'-Hexachlorobiphenyl (169)						
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)						
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)						
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)						
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)						
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)						
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)						
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)						
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)						
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)						
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)						
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)						
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)						
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)						
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)						
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)						
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)						

Table A-13
Summary Statistics and Analytical Results for Largemouth Bass - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	GMP-LB-5009-0000-01-F 6/25/2001	GMP-LB-5009-0000-01-O 6/25/2001	GMP-LB-5009-0000-01-W 6/25/2001	GMP-LB-5010-0000-01-F 6/25/2001	GMP-LB-5010-0000-01-O 6/25/2001	GMP-LB-5010-0000-01-W 6/25/2001
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)						
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)						
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)						
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)						
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)						
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)						
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (200)						
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)						
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)						
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)						
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl						
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl						
Decachlorobiphenyl (209)						
PCB Congeners, Total						
Toxicity Equivalency (Dioxins, Furans, HCX)						
Toxicity Equivalency (PCB)						
Other (%)						
Lipid_percent	0.711	1.63		0.931	3.14	

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. *Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. Environ. Health Persp.* 106(12):775-792.

Samples ending with:
F - Fillet
O - Offal
W - whole body

Table A-14
Summary Statistics and Analytical Results for White Sucker - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	GMP-WS-5001-0000-01-W 6/22/2001	GMP-WS-5002-0000-01-W 6/22/2001	GMP-WS-5003-0000-01-W 6/22/2001
Semivolatile Organics (ug/Kg)										
1,1'-Biphenyl	10	10			0.9	1.74	1.36	1.1 J	1.52 J	1.67 J
2-Methylnaphthalene	10	10			3.55	7.3	5.54	5.19	6.24	6.35
Acenaphthene	10	10			2.13	6.07	4.04	3.19	4.54	5.56
Acenaphthylene	10	10			2.17	7.06	3.88	2.61	5.5	4.39
Anthracene	10	10			2	9.28	4.58	2.98	5.61	6.74
Benzo(a)anthracene	8	10	1.86	1.89	1.54	3.31	1.75	1.97	1.58 J	1.62 J
Benzo(a)pyrene	1	10	1.86	1.91	2.73	2.73	1.12	1.88 U	1.9 U	1.87 U
Benzo(b)fluoranthene	4	10	1.86	1.91	1.74	3.5	1.48	2.01	1.9 U	1.87 U
Benzo(g,h,i)perylene	1	10	1.86	1.92	1.38	1.38	0.99	1.88 U	1.9 U	1.87 U
Benzo(k)fluoranthene	4	10	1.86	1.91	1.57	3.13	1.41	1.96	1.9 U	1.87 U
Chrysene	8	10	1.89	1.95	2.16	5.63	3.16	3.4	3.25	4.57
Dibenzo(a,h)anthracene	4	10	1.86	1.91	0.28	0.39	0.69	0.28 J	1.9 U	1.87 U
Dibenzofuran	10	10			2.12	5.42	3.55	2.38	4.64	4.26
Fluoranthene	10	10			7.08	20.85	13.04	10.89	14.7	16.23
Fluorene	10	10			3.57	9.77	6.08	4.2	7.31	8.07
Indeno(1,2,3-cd)pyrene	0	10	1.86	1.92			0.94	1.88 U	1.9 U	1.87 U
Naphthalene	1	10	3.01	4.84	5.24	5.24	2.32	3.98 U	3.96 U	4.58 U
Phenanthrene	10	10			8.95	28.32	17.18	10.71	20.3	24.94
Pyrene	5	10	4.44	6.5	7.35	11.4	5.76	6.5 U	7.35	8.11
Total PAH	10	10			33.62	113.03	71.01	52.87 J	82.56 J	92.49 J
Pesticides/PCBs (ug/Kg)										
4,4'-DDD	10	10			9.42	24.88	17.42	16.31 J	15.93 J	12.58
4,4'-DDE	10	10			24.28	68.03	43.06	53.29 J	29.95 J	24.28
4,4'-DDT	6	10	1.49	1.54	6.46	13.14	6.26	13.14 J	1.53 U	10.88
Aldrin	0	10	1.49	1.54			0.76	1.51 U	1.53 U	1.5 U
alpha-BHC	0	10	1.49	1.54			0.76	1.51 UJ	1.53 UJ	1.5 U
alpha-Chlordane	10	10			13.07	28.62	20.94	18.25 J	21.63 J	24.2
Aroclor, Total	10	10			169.56	519.25	257.48	255.58 J	200.75	232.44
Aroclor-1016	0	10	18.63	19.16			9.45	18.81 U	19.04 U	18.74 U
Aroclor-1221	0	10	18.63	19.16			9.45	18.81 U	19.04 U	18.74 U
Aroclor-1232	0	10	18.63	19.16			9.45	18.81 U	19.04 U	18.74 U
Aroclor-1242	0	10	18.63	19.16			9.45	18.81 U	19.04 U	18.74 U
Aroclor-1248	0	10	18.63	19.16			9.45	18.81 U	19.04 U	18.74 U
Aroclor-1254	10	10			134.04	351.35	202.36	196.66 J	167.96	187.35
Aroclor-1260	0	10	18.63	19.16			9.45	18.81 U	19.04 U	18.74 U
Aroclor-1268	10	10			29.37	167.89	55.12	58.92 J	32.79	45.09
beta-BHC	0	10	1.49	1.54			0.76	1.51 U	1.53 U	1.5 U
delta-BHC	0	10	1.49	1.54			0.76	1.51 U	1.53 U	1.5 U

Table A-14
Summary Statistics and Analytical Results for White Sucker - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	GMP-WS-5001-0000-01-W 6/22/2001	GMP-WS-5002-0000-01-W 6/22/2001	GMP-WS-5003-0000-01-W 6/22/2001
Dieldrin	3	10	1.49	1.53	5.63	23.46	4.17	1.51 UJ	1.53 UJ	7.27
Endosulfan I	0	10	1.49	1.54			0.76	1.51 U	1.53 UJ	1.5 U
Endosulfan II	0	10	1.49	1.53			0.76	1.51 U	1.53 U	1.5 U
Endosulfan Sulfate	0	10	1.49	1.53			0.76	1.51 U	1.53 U	1.5 U
Endrin	0	10	1.49	1.54			0.76	1.51 U	1.53 U	1.5 U
Endrin Aldehyde	0	10	1.49	1.54			0.76	1.51 U	1.53 U	1.5 U
Endrin Ketone	0	10	1.49	1.54			0.76	1.51 U	1.53 U	1.5 U
gamma-BHC	2	10	1.49	1.54	0.99	1.03	0.81	1.51 U	1.53 U	1.5 U
gamma-Chlordane	10	10			7.43	14.53	11.19	11.96 J	13.12	14.53
Heptachlor	0	10	1.49	1.54			0.76	1.51 U	1.53 U	1.5 U
Heptachlor Epoxide	3	10	1.49	1.53	0.75	1.23	0.81	1.51 U	1.53 U	1.5 U
Methoxychlor	0	10	1.49	1.54			0.76	1.51 U	1.53 U	1.5 U
Technical Chlordane	10	10			195.6	344.91	282.00	265.42 J	308.32	344.91
Toxaphene	0	10	37.26	38.31			18.89	37.63 U	38.08 U	37.48 U
Inorganics (mg/Kg)										
Aluminum	10	10			9.34	52.8	30.3	21	52.8	16.6
Antimony	3	10	0.034	0.034	0.000776	0.00105	0.0122	0.034 U	0.00105 J	0.000943 J
Arsenic	0	10	0.034	0.0918			0.0292	0.0918 U	0.0913 U	0.0372 U
Barium	10	10			0.498	1.25	0.913	1.25	1.21	0.498
Beryllium	10	10			0.00356	0.00736	0.00518	0.0039 J	0.0072	0.00455
Cadmium	7	10	0.2	0.2	0.00342	0.0289	0.0395	0.0164 J	0.014 J	0.00342 J
Chromium	6	10	0.0269	0.269	0.105	0.163	0.118	0.119 J	0.163 J	0.0269 U
Cobalt	10	10			0.0316	0.388	0.0791	0.0557 J	0.058 J	0.388 J
Copper	10	10			0.669	1.52	1.01	1.09 J	1.22 J	0.883 J
Iron	10	10			23.4	66.3	48.2	49	58.4	34.9
Lead	1	10	0.022	0.022	0.022	0.022	0.0121	0.022 U	0.022 J	0.022 U
Manganese	10	10			2.58	12.1	6.21	12.1 J	7.63 J	3.35 J
Mercury	10	10			0.122	0.278	0.190	0.22	0.129	0.141
Mercury (methyl)	10	10			0.125	0.299	0.193	0.233	0.148	0.137
Molybdenum	0	10	0.32	0.32			0.160	0.32 U	0.32 U	0.32 U
Nickel	10	10			0.0501	0.117	0.0705	0.0656 J	0.117 J	0.0558 J
Selenium	0	10	0.448	0.448			0.224	0.448 U	0.448 U	0.448 U
Silver	1	10	0.06	0.06	0.0383	0.0383	0.0308	0.06 U	0.06 U	0.06 U
Thallium	5	10	0.022	0.022	0.000879	0.00193	0.00621	0.022 U	0.00157 J	0.022 U
Vanadium	7	10	0.179	0.179	0.0474	0.296	0.101	0.179 U	0.089 J	0.179 U
Zinc	10	10			12	21.1	16.2	17.7	15.2	12
Dioxins/Furans (ug/Kg)										
HCX	0	10	0.01994	0.03974			0.01098	0.03974 UJ	0.02001 UJ	0.01996 UJ
TCX	0	1	0.099	0.099			0.04950	0.099 UJ	R	R

Table A-14
Summary Statistics and Analytical Results for White Sucker - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	GMP-WS-5001-0000-01-W 6/22/2001	GMP-WS-5002-0000-01-W 6/22/2001	GMP-WS-5003-0000-01-W 6/22/2001
2,3,7,8-TCDD	7	10	0.0004	0.00123	0.0005	0.00122	0.00070	0.00123 UJ	0.00086 J	0.00079 J
1,2,3,7,8-PeCDD	2	10	0.00023	0.00073	0.00071	0.00233	0.00050	0.00071 J	0.00061 UJ	0.00055 UJ
1,2,3,4,7,8-HxCDD	3	10	0.00016	0.00147	0.00018	0.00026	0.00025	0.00044 UJ	0.00026 J	0.00028 UJ
1,2,3,6,7,8-HxCDD	8	10	0.00075	0.00152	0.00014	0.00058	0.00041	0.00031 J	0.00049 J	0.00058 J
1,2,3,7,8,9-HxCDD	4	10	0.00022	0.00141	0.00005	0.00013	0.00021	0.00042 UJ	0.00011 J	0.00011 J
1,2,3,4,6,7,8-HpCDD	0	10	0.00039	0.00321			0.00048	0.00075 UJ	0.00083 UJ	0.00111 UJ
OCDD	0	10	0.00105	0.00331			0.00094	0.00256 UJ	0.00168 UJ	0.00212 UJ
2,3,7,8-TCDF	10	10			0.0021	0.00971	0.00513	0.00719 J#	0.00593 J#	0.00633 J#
1,2,3,7,8-PeCDF	7	10	0.00047	0.00068	0.00011	0.00035	0.00026	0.00068 UJ	0.00025 J	0.00035 J
2,3,4,7,8-PeCDF	8	10	0.00046	0.00064	0.00026	0.00064	0.00042	0.00064 UJ	0.00052 J	0.00057 J
1,2,3,4,7,8-HxCDF	4	10	0.00015	0.00078	0.00019	0.00027	0.00021	0.00044 UJ	0.00021 J	0.00027 J
1,2,3,6,7,8-HxCDF	6	10	0.00028	0.00076	0.00005	0.00023	0.00020	0.00044 UJ	0.00019 J	0.00023 J
2,3,4,6,7,8-HxCDF	2	10	0.00015	0.00082	0.00009	0.00013	0.00017	0.00048 UJ	0.00013 J	0.00017 UJ
1,2,3,7,8,9-HxCDF	0	10	0.00017	0.001			0.00019	0.00054 UJ	0.00017 UJ	0.0002 UJ
1,2,3,4,6,7,8-HpCDF	0	10	0.00017	0.00143			0.00023	0.00019 UJ	0.00028 UJ	0.00041 UJ
1,2,3,4,7,8,9-HpCDF	0	10	0.00008	0.00168			0.00024	0.00053 UJ	0.00019 UJ	0.00016 UJ
OCDF	0	10	0.00011	0.00071			0.00014	0.00027 UJ	0.0002 UJ	0.0002 UJ
Total TCDD	2	10	0.0004	0.00123	0.00116	0.00122	0.00052	0.00123 UJ	0.00086 UJ	0.00083 UJ
Total PeCDD	2	10	0.00023	0.00094	0.00317	0.01264	0.00179	0.00317 J	0.00061 UJ	0.00055 UJ
Total HxCDD	7	10	0.00031	0.00147	0.0002	0.00105	0.00057	0.00031 UJ	0.00105 J	0.00097 J
Total HpCDD	0	10	0.00039	0.00321			0.00054	0.00075 UJ	0.00104 UJ	0.00142 UJ
Total TCDF	10	10			0.00203	0.00741	0.00428	0.00411 J	0.00542 J	0.00712 J
Total PeCDF	10	10			0.00077	0.00384	0.00241	0.00347 J	0.00365 J	0.00384 J
Total HxCDF	8	10	0.00054	0.00158	0.00029	0.00185	0.00086	0.00158 UJ	0.00146 J	0.00185 J
Total HpCDF	0	10	0.00029	0.00154			0.00038	0.0011 UJ	0.00058 UJ	0.00055 UJ
Toxicity Equivalency (Dioxins, Furans, HCX)	10	10			0.00037	0.0034	0.00167	0.00146	0.00186	0.00184
PCB Congeners (ug/Kg)										
2-Monochlorobiphenyl (1)	0	1	0.01623	0.01623			0.00812	0.01623 UJ		
4-Chlorobiphenyl (3)	0	1	0.01056	0.01056			0.00528	0.01056 UJ		
2,2'-Dichlorobiphenyl (4)	1	1			0.10312	0.10312	0.10312	0.10312 J		
2,3-Dichlorobiphenyl (5)	0	1	0.00994	0.00994			0.00497	0.00994 UJ		
2,3'-Dichlorobiphenyl (6)	1	1			0.07472	0.07472	0.07472	0.07472 J		
2,4-Dichlorobiphenyl (7)	1	1			0.0154	0.0154	0.01540	0.0154 J		
2,4'-Dichlorobiphenyl (8)	1	1			0.20537	0.20537	0.20537	0.20537 J		
2,5-Dichlorobiphenyl (9)	1	1			0.03479	0.03479	0.03479	0.03479 J		
2,6-Dichlorobiphenyl (10)	1	1			0.00948	0.00948	0.00948	0.00948 J		
3,4-Dichlorobiphenyl (12)	1	1			0.0111	0.0111	0.01110	0.0111 J		
2,2',3'-Trichlorobiphenyl (16)	1	1			0.26202	0.26202	0.26202	0.26202 J		
2,2',4-Trichlorobiphenyl (17)	1	1			0.44908	0.44908	0.44908	0.44908 J		

Table A-14

Summary Statistics and Analytical Results for White Sucker - Upstream

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	GMP-WS-5001-0000-01-W 6/22/2001	GMP-WS-5002-0000-01-W 6/22/2001	GMP-WS-5003-0000-01-W 6/22/2001
2,2',5-Trichlorobiphenyl (18)	1	1			0.58802	0.58802	0.58802	0.58802 J		
2,2',6-Trichlorobiphenyl (19)	1	1			0.09118	0.09118	0.09118	0.09118 J		
2,3,3'-Trichlorobiphenyl (20)	1	1			4.12996	4.12996	4.12996	4.12996 J		
2,3,4'-Trichlorobiphenyl (22)	1	1			0.87733	0.87733	0.87733	0.87733 J		
2,3,6-Trichlorobiphenyl (24)	1	1			0.08894	0.08894	0.08894	0.08894 J		
2,3',4-Trichlorobiphenyl (25)	1	1			0.09549	0.09549	0.09549	0.09549 J		
2,3',5-Trichlorobiphenyl (26)	1	1			0.34386	0.34386	0.34386	0.34386 J		
2,4',5-Trichlorobiphenyl (31)	1	1			2.27052	2.27052	2.27052	2.27052 J		
2,4',6-Trichlorobiphenyl (32)	1	1			0.25418	0.25418	0.25418	0.25418 J		
2,2',3,3'-Tetrachlorobiphenyl (40)	1	1			1.97415	1.97415	1.97415	1.97415 J		
2,2',3,4'-Tetrachlorobiphenyl (42)	1	1			1.39268	1.39268	1.39268	1.39268 J		
2,2',3,5-Tetrachlorobiphenyl (43)	1	1			4.09938	4.09938	4.09938	4.09938 J		
2,2',3,5'-Tetrachlorobiphenyl (44)	1	1			2.01312	2.01312	2.01312	2.01312 J		
2,2',3,6-Tetrachlorobiphenyl (45)	1	1			0.386	0.386	0.386000	0.386 J		
2,2',3,6'-Tetrachlorobiphenyl (46)	0	1	0.12615	0.12615			0.06308	0.12615 UJ		
2,2',4,5-Tetrachlorobiphenyl (48)	1	1			0.69257	0.69257	0.69257	0.69257 J		
2,2',4,5'-Tetrachlorobiphenyl (49)	1	1			4.48314	4.48314	4.48314	4.48314 J		
2,2',4,6-Tetrachlorobiphenyl (50)	1	1			0.3872	0.3872	0.38720	0.3872 J		
2,3,3',4'-Tetrachlorobiphenyl (56)	1	1			2.12915	2.12915	2.12915	2.12915 J		
2,3,3',6-Tetrachlorobiphenyl (59)	1	1			4.26651	4.26651	4.26651	4.26651 J		
2,3,4,4'-Tetrachlorobiphenyl (60)	1	1			2.05001	2.05001	2.05001	2.05001 J		
2,3,4,5-Tetrachlorobiphenyl (61)	1	1			16.4886	16.4886	16.48860	16.4886 J		
2,3,4',5-Tetrachlorobiphenyl (63)	1	1			0.46081	0.46081	0.46081	0.46081 J		
2,3,4',6-Tetrachlorobiphenyl (64)	1	1			3.14815	3.14815	3.14815	3.14815 J		
2,3',4,4'-Tetrachlorobiphenyl (66)	1	1			8.9471	8.9471	8.94710	8.9471 J		
3,3',4,4'-Tetrachlorobiphenyl (77)	1	1			0.40386	0.40386	0.40386	0.40386 J		
3,4,4',5-Tetrachlorobiphenyl (81)	1	1			0.26119	0.26119	0.26119	0.26119 J		
2,2',3,3',4-Pentachlorobiphenyl (82)	1	1			1.96448	1.96448	1.96448	1.96448 J		
2,2',3,3',5-Pentachlorobiphenyl (83)	1	1			13.73062	13.73062	13.73062	13.73062 J		
2,2',3,3',6-Pentachlorobiphenyl (84)	1	1			2.58268	2.58268	2.58268	2.58268 J		
2,2',3,4,4'-Pentachlorobiphenyl (85)	1	1			1.87396	1.87396	1.87396	1.87396 J		
2,2',3,4,5-Pentachlorobiphenyl (86)	1	1			13.58082	13.58082	13.58082	13.58082 J		
2,2',3,4,6-Pentachlorobiphenyl (88)	1	1			2.08308	2.08308	2.08308	2.08308 J		
2,2',3,4,6'-Pentachlorobiphenyl (89)	1	1			0.10364	0.10364	0.10364	0.10364 J		
2,2',3,4',5-Pentachlorobiphenyl (90)	1	1			19.29612	19.29612	19.29612	19.29612 J		
2,2',3,5,5'-Pentachlorobiphenyl (92)	1	1			3.01732	3.01732	3.01732	3.01732 J		
2,2',3,5,6-Pentachlorobiphenyl (93)	1	1			8.56625	8.56625	8.56625	8.56625 J		
2,3,3',4,4'-Pentachlorobiphenyl (105)	1	1			6.29581	6.29581	6.29581	6.29581 J		
2,3,3',4,5-Pentachlorobiphenyl (106)	1	1			2.50995	2.50995	2.50995	2.50995 J		

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	GMP-WS-5001-0000-01-W 6/22/2001	GMP-WS-5002-0000-01-W 6/22/2001	GMP-WS-5003-0000-01-W 6/22/2001
2,3,3',4',5'-Pentachlorobiphenyl (108)	1	1			0.84766	0.84766	0.84766	0.84766 J		
2,3,3',4',6-Pentachlorobiphenyl (110)	1	1			11.74968	11.74968	11.74968	11.74968 J		
2,3,4,4',5-Pentachlorobiphenyl (114)	1	1			0.61174	0.61174	0.61174	0.61174 J		
2,3',4,4',5-Pentachlorobiphenyl (118)	1	1			21.62815	21.62815	21.62815	21.62815 J		
3,3',4,4',5-Pentachlorobiphenyl (126)	1	1			0.03388	0.03388	0.03388	0.03388 J		
2,2',3,3',4,4'-Hexachlorobiphenyl (128)	1	1			4.1214	4.1214	4.12140	4.1214 J		
2,2',3,3',4,5-Hexachlorobiphenyl (129)	1	1			26.01084	26.01084	26.01084	26.01084 J		
2,2',3,3',4,5'-Hexachlorobiphenyl (130)	1	1			1.73519	1.73519	1.73519	1.73519 J		
2,2',3,3',4,6-Hexachlorobiphenyl (131)	1	1			0.30892	0.30892	0.30892	0.30892 J		
2,2',3,3',4,6'-Hexachlorobiphenyl (132)	1	1			4.77391	4.77391	4.77391	4.77391 J		
2,2',3,3',5,6-Hexachlorobiphenyl (134)	1	1			0.68946	0.68946	0.68946	0.68946 J		
2,2',3,3',5,6'-Hexachlorobiphenyl (135)	1	1			3.33522	3.33522	3.33522	3.33522 J		
2,2',3,3',6,6'-Hexachlorobiphenyl (136)	1	1			0.78914	0.78914	0.78914	0.78914 J		
2,2',3,4,4',5-Hexachlorobiphenyl (137)	1	1			2.58748	2.58748	2.58748	2.58748 J		
2,2',3,4,5,5'-Hexachlorobiphenyl (141)	1	1			2.88223	2.88223	2.88223	2.88223 J		
2,2',3,4,5',6-Hexachlorobiphenyl (144)	1	1			0.51374	0.51374	0.51374	0.51374 J		
2,2',3,4',5,5'-Hexachlorobiphenyl (146)	1	1			3.4385	3.4385	3.43850	3.4385 J		
2,2',3,4',5,6-Hexachlorobiphenyl (147)	1	1			11.65442	11.65442	11.65442	11.65442 J		
2,2',4,4',5,5'-Hexachlorobiphenyl (153)	1	1			22.53594	22.53594	22.53594	22.53594 J		
2,3,3',4,4',5-Hexachlorobiphenyl (156)	1	1			2.51454	2.51454	2.51454	2.51454 J		
2,3,3',4,4',6-Hexachlorobiphenyl (158)	1	1			2.50458	2.50458	2.50458	2.50458 J		
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	1	1			0.98339	0.98339	0.98339	0.98339 J		
3,3',4,4',5,5'-Hexachlorobiphenyl (169)	1	1			0.37229	0.37229	0.37229	0.37229 J		
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	1	1			3.69722	3.69722	3.69722	3.69722 J		
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)	1	1			0.99838	0.99838	0.99838	0.99838 J		
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)	1	1			1.57025	1.57025	1.57025	1.57025 J		
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)	1	1			3.17923	3.17923	3.17923	3.17923 J		
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)	1	1			0.29863	0.29863	0.29863	0.29863 J		
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)	1	1			0.24721	0.24721	0.24721	0.24721 J		
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)	1	1			2.24749	2.24749	2.24749	2.24749 J		
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)	1	1			1.92827	1.92827	1.92827	1.92827 J		
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)	1	1			9.45214	9.45214	9.45214	9.45214 J		
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)	0	1	0.1987	0.1987			0.09935	0.1987 UJ		
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)	1	1			2.80671	2.80671	2.80671	2.80671 J		
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)	1	1			0.03636	0.03636	0.03636	0.03636 J		
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)	1	1			0.34204	0.34204	0.34204	0.34204 J		
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	1	1			8.68427	8.68427	8.68427	8.68427 J		
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	1	1			0.16885	0.16885	0.16885	0.16885 J		
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)	1	1			1.99847	1.99847	1.99847	1.99847 J		

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2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	1	1			0.18138	0.18138	0.18138	0.18138 J		
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	1	1			3.68158	3.68158	3.68158	3.68158 J		
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	1	1			0.61789	0.61789	0.61789	0.61789 J		
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)	1	1			3.39732	3.39732	3.39732	3.39732 J		
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)	1	1			0.23519	0.23519	0.23519	0.23519 J		
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)	1	1			22.9537	22.9537	22.95370	22.9537 J		
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (200)	1	1			0.34486	0.34486	0.34486	0.34486 J		
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)	1	1			1.58546	1.58546	1.58546	1.58546 J		
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)	1	1			12.00611	12.00611	12.00611	12.00611 J		
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	1	1			0.26718	0.26718	0.26718	0.26718 J		
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	1	1			27.22016	27.22016	27.22016	27.22016 J		
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	1	1			2.95396	2.95396	2.95396	2.95396 J		
Decachlorobiphenyl (209)	1	1			17.07802	17.07802	17.07802	17.07802 J		
PCB Congeners, Total	1	1			395.89354	395.89354	395.89354	395.89354 J		
Toxicity Equivalency (PCB)	1	1			0.0116	0.0116	0.0116	0.0116		
Other (%)										
Lipid_percent	11	11			4.35	14.9	10.6	4.35	12.4	13.1

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* 106(12):775-792.

Samples ending with:
W - whole body

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Semivolatile Organics (ug/Kg)								
1,1'-Biphenyl	1.12 J	1.24 J	1.05 J		1.83 J	1.74 J	0.9 J	1.66 J
2-Methylnaphthalene	3.85	4.81	5.07		6.86	7.3	3.55	6.2
Acenaphthene	3.03	3.52	2.44		5.19	6.07	2.13	4.71
Acenaphthylene	2.52	2.65	2.56		5.21	7.06	2.17	4.12
Anthracene	2.37	2.84	2		6.89	9.28	2.17	4.88
Benzo(a)anthracene	1.68 J	1.94	1.86 U		3.31	1.94	1.89 U	1.54 J
Benzo(a)pyrene	1.88 U	1.9 U	1.86 U		2.73	1.88 U	1.89 U	1.91 U
Benzo(b)fluoranthene	1.74 J	1.9	1.86 U		3.5	1.88 U	1.89 U	1.91 U
Benzo(g,h,i)perylene	1.88 U	1.38 J	1.86 U		1.92 U	1.88 U	1.89 U	1.91 U
Benzo(k)fluoranthene	1.57 J	1.76 J	1.86 U		3.13	1.88 U	1.89 U	1.91 U
Chrysene	3.29	4.58	1.95 U		5.63	2.82	1.89 U	2.16
Dibenzo(a,h)anthracene	0.28 J	0.32 J	1.86 U		0.39 J	1.88 U	1.89 U	1.91 U
Dibenzofuran	3.04	3.11	2.56		4.11	5.42	2.12	3.87
Fluoranthene	10.07	13.05	7.45		20.85	19.33	7.08	10.79
Fluorene	4.44	5.23	4.03		8.04	9.77	3.57	6.12
Indeno(1,2,3-cd)pyrene	1.88 U	1.9 U	1.86 U		1.92 U	1.88 U	1.89 U	1.91 U
Naphthalene	3.18 U	3.79 U	3.95 U		4.84 U	5.24	3.01 U	4.56 U
Phenanthrene	11.84	16.86	8.95		24.15	28.32	9.93	15.75
Pyrene	6.13 U	8.9	4.45 U		11.4	8.32	4.44 U	5.48 U
Total PAH	50.85 J	74.09 J	36.14 J		113.03 J	112.63 J	33.62 J	61.8 J
Pesticides/PCBs (ug/Kg)								
4,4'-DDD	9.42	21.12	22.12 J		17.42	24.88	12.6	21.85
4,4'-DDE	36.72	33.25	41.97 J		32.21	68.03	50.68	60.24
4,4'-DDT	7.93	1.52 U	1.49 U		1.54 U	9.73	6.46	11.43
Aldrin	1.5 U	1.52 U	1.49 U		1.54 U	1.51 U	1.52 U	1.53 U
alpha-BHC	1.5 U	1.52 U	1.49 U		1.54 U	1.51 U	1.52 U	1.53 U
alpha-Chlordane	17.91	19.64	18.09 J		23.91	28.62	13.07	24.06
Aroclor, Total	213.42	169.56	289.16 J		181.01 J	519.25	271.26	242.4
Aroclor-1016	18.76 U	19 U	18.63 U		19.16 U	18.81 U	18.91 U	19.08 U
Aroclor-1221	18.76 U	19 U	18.63 U		19.16 U	18.81 U	18.91 U	19.08 U
Aroclor-1232	18.76 U	19 U	18.63 U		19.16 U	18.81 U	18.91 U	19.08 U
Aroclor-1242	18.76 U	19 U	18.63 U		19.16 U	18.81 U	18.91 U	19.08 U
Aroclor-1248	18.76 U	19 U	18.63 U		19.16 U	18.81 U	18.91 U	19.08 U
Aroclor-1254	175.05	134.04	242.22 J		151.64 J	351.35	219.44	197.89
Aroclor-1260	18.76 U	19 U	18.63 U		19.16 U	18.81 U	18.91 U	19.08 U
Aroclor-1268	38.37	35.52	46.93 J		29.37	167.89	51.82	44.5
beta-BHC	1.5 U	1.52 U	1.49 U		1.54 U	1.51 U	1.52 U	1.53 U
delta-BHC	1.51 U	1.52 U	1.49 U		1.54 U	1.51 U	1.52 U	1.53 U

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Dieldrin	1.5 U	23.46	1.49 U		5.63	1.51 U	1.52 U	1.53 U
Endosulfan I	1.5 U	1.52 U	1.49 U		1.54 U	1.51 U	1.52 U	1.53 U
Endosulfan II	1.5 U	1.52 U	1.49 U		1.53 U	1.51 U	1.51 U	1.53 U
Endosulfan Sulfate	1.5 U	1.52 U	1.49 U		1.53 U	1.51 U	1.52 U	1.53 U
Endrin	1.5 U	1.52 U	1.49 U		1.54 U	1.51 U	1.52 U	1.53 U
Endrin Aldehyde	1.5 U	1.52 U	1.49 U		1.54 U	1.51 U	1.52 U	1.53 U
Endrin Ketone	1.5 U	1.52 U	1.49 U		1.54 U	1.51 U	1.52 U	1.53 U
gamma-BHC	0.99 J	1.52 U	1.49 U		1.54 U	1.51 U	1.52 U	1.03 J
gamma-Chlordane	9.7	8.37	8.92 J		13.97	11.6	7.43	12.3
Heptachlor	1.5 U	1.52 U	1.49 U		1.54 U	1.51 U	1.52 U	1.53 U
Heptachlor Epoxide	1.5 U	1.52 U	1.49 U		0.85 J	1.23 J	1.51 U	0.75 J
Methoxychlor	1.5 U	1.52 U	1.49 U		1.54 U	1.51 U	1.52 U	1.53 U
Technical Chlordane	231.62	244.21	225.88 J		325.59	341.71	195.6	336.74
Toxaphene	37.52 U	38 U	37.26 U		38.31 U	37.63 U	37.81 U	38.16 U
Inorganics (mg/Kg)								
Aluminum	21.6	52.7	20.6		42	9.34	31.7	35.1
Antimony	0.034 U	0.034 U	0.034 U		0.034 U	0.034 U	0.000776 J	0.034 U
Arsenic	0.0767 U	0.0413 U	0.0509 U		0.0566 U	0.034 U	0.05 U	0.0536 U
Barium	1.07	1.19	0.765		1.07	0.524	0.705	0.845
Beryllium	0.00491	0.00571	0.0037 J		0.00736	0.00356 J	0.00524	0.00566
Cadmium	0.2 U	0.0056 J	0.2 U		0.0289 J	0.0192 J	0.00783 J	0.2 U
Chromium	0.105 J	0.269 U	0.125 J		0.139 J	0.269 U	0.269 U	0.109 J
Cobalt	0.0506 J	0.0463 J	0.0382 J		0.042 J	0.0316 J	0.0377 J	0.0426 J
Copper	1.52 J	0.882 J	0.807 J		1.2 J	0.669 J	0.862 J	0.939 J
Iron	61	58.3	37.3		66.3	23.4	46.6	46.8
Lead	0.022 U	0.022 U	0.022 U		0.022 U	0.022 U	0.022 U	0.022 U
Manganese	11.9 J	5.16 J	6.2 J		6.03 J	3.86 J	2.58 J	3.32 J
Mercury	0.213	0.122	0.169		0.131	0.234	0.26	0.278
Mercury (methyl)	0.19	0.138	0.147		0.125	0.221	0.288	0.299
Molybdenum	0.32 U	0.32 U	0.32 U		0.32 U	0.32 U	0.32 U	0.32 U
Nickel	0.0799 J	0.0686 J	0.0605 J		0.0746 J	0.0501 J	0.0715 J	0.0618 J
Selenium	0.448 U	0.448 U	0.448 U		0.448 U	0.448 U	0.448 U	0.448 U
Silver	0.06 U	0.06 U	0.06 U		0.06 U	0.0383 J	0.06 U	0.06 U
Thallium	0.00126 J	0.000879 J	0.022 U		0.00193 J	0.022 U	0.00149 J	0.022 U
Vanadium	0.179 U	0.0703 J	0.0506 J		0.0786 J	0.0474 J	0.296 J	0.113 J
Zinc	21.1	14.4	17.3		16	17.2	16.9	13.9
Dioxins/Furans (ug/Kg)								
HCX	0.01999 UJ	0.02002 UJ	0.01995 UJ		0.01998 UJ	0.01994 UJ	0.01994 UJ	0.02 UJ
TCX	R	R	R		R	R	R	R

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PARAMETER	GMP-WS-5004-0000-01-W 6/22/2001	GMP-WS-5005-0000-01-W 6/22/2001	GMP-WS-5006-0000-01-W 6/22/2001	GMP-WS-5007-0000-01-W 6/22/2001 DUPLICATE	GMP-WS-5007-0000-01-W 6/22/2001	GMP-WS-5008-0000-01-W 6/22/2001	GMP-WS-5009-0000-01-W 6/22/2001	GMP-WS-5010-0000-01-W 6/22/2001
2,3,7,8-TCDD	0.0004 UJ	0.00057 J	0.00122 J		0.00086 J	0.00116 J	0.00041 UJ	0.0005 J
1,2,3,7,8-PeCDD	0.00023 UJ	0.00042 UJ	0.00038 UJ		0.00059 UJ	0.00073 UJ	0.00044 UJ	0.00233 J
1,2,3,4,7,8-HxCDD	0.00016 UJ	0.00028 UJ	0.0007 UJ		0.00018 J	0.0002 J	0.00032 UJ	0.00147 UJ
1,2,3,6,7,8-HxCDD	0.00014 J	0.00032 J	0.00075 UJ		0.00032 J	0.00056 J	0.00023 J	0.00152 UJ
1,2,3,7,8,9-HxCDD	0.00005 J	0.00026 UJ	0.00068 UJ		0.00022 UJ	0.00013 J	0.00031 UJ	0.00141 UJ
1,2,3,4,6,7,8-HpCDD	0.00039 UJ	0.00078 UJ	0.00053 UJ		0.00088 UJ	0.00066 U	0.00053 UJ	0.00321 UJ
OCDD	0.00118 UJ	0.00331 UJ	0.00134 UJ		0.00307 UJ	0.00105 U	0.0014 UJ	0.00113 UJ
2,3,7,8-TCDF	0.0021 J#	0.00379 J#	0.0026 J		0.00478 J#	0.00971 J#	0.00311 J#	0.00571 J#
1,2,3,7,8-PeCDF	0.00011 J	0.00047 UJ	0.00031 J		0.00029 J	0.00032 J	0.00016 J	0.00052 UJ
2,3,4,7,8-PeCDF	0.00026 J	0.00035 J	0.0004 J		0.00047 J	0.00064 J	0.00043 J	0.00046 UJ
1,2,3,4,7,8-HxCDF	0.00015 UJ	0.00029 UJ	0.0005 UJ		0.00022 J	0.00019 J	0.00021 UJ	0.00078 UJ
1,2,3,6,7,8-HxCDF	0.00005 J	0.00028 UJ	0.0005 UJ		0.00019 J	0.0002 J	0.00013 J	0.00076 UJ
2,3,4,6,7,8-HxCDF	0.00015 UJ	0.0003 UJ	0.00054 UJ		0.00009 J	0.00018 UJ	0.00022 UJ	0.00082 UJ
1,2,3,7,8,9-HxCDF	0.00018 UJ	0.00035 UJ	0.00064 UJ		0.00027 UJ	0.00021 UJ	0.00026 UJ	0.001 UJ
1,2,3,4,6,7,8-HpCDF	0.00017 UJ	0.00035 UJ	0.00096 UJ		0.00045 UJ	0.00022 UJ	0.00018 UJ	0.00143 UJ
1,2,3,4,7,8,9-HpCDF	0.00018 UJ	0.00023 UJ	0.00113 UJ		0.00008 UJ	0.00021 UJ	0.00039 UJ	0.00168 UJ
OCDF	0.00015 UJ	0.00071 UJ	0.00024 UJ		0.00049 UJ	0.00011 UJ	0.0002 UJ	0.00018 UJ
Total TCDD	0.0004 UJ	0.00057 UJ	0.00122 J		0.00086 UJ	0.00116 J	0.00048 UJ	0.0005 UJ
Total PeCDD	0.00023 UJ	0.00042 UJ	0.00038 UJ		0.00059 UJ	0.00094 UJ	0.00044 UJ	0.01264 J
Total HxCDD	0.0002 J	0.00034 J	0.00071 UJ		0.00078 J	0.00089 J	0.00023 J	0.00147 UJ
Total HpCDD	0.00039 UJ	0.00135 UJ	0.00053 UJ		0.00088 UJ	0.00079 UJ	0.00053 UJ	0.00321 UJ
Total TCDF	0.00203 J	0.00336 J	0.00299 J		0.0047 J	0.00741 J	0.00231 J	0.0033 J
Total PeCDF	0.00126 J	0.00188 J	0.00154 J		0.00314 J	0.00337 J	0.0012 J	0.00077 J
Total HxCDF	0.00029 J	0.0006 J	0.00054 UJ		0.00131 J	0.00115 J	0.00043 J	0.00046 J
Total HpCDF	0.00029 UJ	0.001 UJ	0.00104 UJ		0.00053 UJ	0.00047 UJ	0.00042 UJ	0.00154 UJ
Toxicity Equivalency (Dioxins, Furans, HCX)	0.00037	0.00116	0.0017		0.00169	0.0026	0.00057	0.0034
PCB Congeners (ug/Kg)								
2-Monochlorobiphenyl (1)								
4-Chlorobiphenyl (3)								
2,2'-Dichlorobiphenyl (4)								
2,3-Dichlorobiphenyl (5)								
2,3'-Dichlorobiphenyl (6)								
2,4-Dichlorobiphenyl (7)								
2,4'-Dichlorobiphenyl (8)								
2,5-Dichlorobiphenyl (9)								
2,6-Dichlorobiphenyl (10)								
3,4-Dichlorobiphenyl (12)								
2,2',3'-Trichlorobiphenyl (16)								
2,2',4-Trichlorobiphenyl (17)								

Table A-14
Summary Statistics and Analytical Results for White Sucker - Upstream

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PARAMETER	GMP-WS-5004-0000-01-W 6/22/2001	GMP-WS-5005-0000-01-W 6/22/2001	GMP-WS-5006-0000-01-W 6/22/2001	GMP-WS-5007-0000-01-W 6/22/2001 DUPLICATE	GMP-WS-5007-0000-01-W 6/22/2001	GMP-WS-5008-0000-01-W 6/22/2001	GMP-WS-5009-0000-01-W 6/22/2001	GMP-WS-5010-0000-01-W 6/22/2001
2,2',5-Trichlorobiphenyl (18)								
2,2',6-Trichlorobiphenyl (19)								
2,3,3'-Trichlorobiphenyl (20)								
2,3,4'-Trichlorobiphenyl (22)								
2,3,6-Trichlorobiphenyl (24)								
2,3',4-Trichlorobiphenyl (25)								
2,3',5-Trichlorobiphenyl (26)								
2,4',5-Trichlorobiphenyl (31)								
2,4',6-Trichlorobiphenyl (32)								
2,2',3,3'-Tetrachlorobiphenyl (40)								
2,2',3,4'-Tetrachlorobiphenyl (42)								
2,2',3,5-Tetrachlorobiphenyl (43)								
2,2',3,5'-Tetrachlorobiphenyl (44)								
2,2',3,6-Tetrachlorobiphenyl (45)								
2,2',3,6'-Tetrachlorobiphenyl (46)								
2,2',4,5-Tetrachlorobiphenyl (48)								
2,2',4,5'-Tetrachlorobiphenyl (49)								
2,2',4,6-Tetrachlorobiphenyl (50)								
2,3,3',4'-Tetrachlorobiphenyl (56)								
2,3,3',6-Tetrachlorobiphenyl (59)								
2,3,4,4'-Tetrachlorobiphenyl (60)								
2,3,4,5-Tetrachlorobiphenyl (61)								
2,3,4',5-Tetrachlorobiphenyl (63)								
2,3,4',6-Tetrachlorobiphenyl (64)								
2,3',4,4'-Tetrachlorobiphenyl (66)								
3,3',4,4'-Tetrachlorobiphenyl (77)								
3,4,4',5-Tetrachlorobiphenyl (81)								
2,2',3,3',4-Pentachlorobiphenyl (82)								
2,2',3,3',5-Pentachlorobiphenyl (83)								
2,2',3,3',6-Pentachlorobiphenyl (84)								
2,2',3,4,4'-Pentachlorobiphenyl (85)								
2,2',3,4,5-Pentachlorobiphenyl (86)								
2,2',3,4,6-Pentachlorobiphenyl (88)								
2,2',3,4,6'-Pentachlorobiphenyl (89)								
2,2',3,4',5-Pentachlorobiphenyl (90)								
2,2',3,5,5'-Pentachlorobiphenyl (92)								
2,2',3,5,6-Pentachlorobiphenyl (93)								
2,3,3',4,4'-Pentachlorobiphenyl (105)								
2,3,3',4,5-Pentachlorobiphenyl (106)								

Table A-14
Summary Statistics and Analytical Results for White Sucker - Upstream

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PARAMETER	GMP-WS-5004-0000-01-W 6/22/2001	GMP-WS-5005-0000-01-W 6/22/2001	GMP-WS-5006-0000-01-W 6/22/2001	GMP-WS-5007-0000-01-W 6/22/2001 DUPLICATE	GMP-WS-5007-0000-01-W 6/22/2001	GMP-WS-5008-0000-01-W 6/22/2001	GMP-WS-5009-0000-01-W 6/22/2001	GMP-WS-5010-0000-01-W 6/22/2001
2,3,3',4',5'-Pentachlorobiphenyl (108)								
2,3,3',4',6-Pentachlorobiphenyl (110)								
2,3,4,4',5-Pentachlorobiphenyl (114)								
2,3',4,4',5-Pentachlorobiphenyl (118)								
3,3',4,4',5-Pentachlorobiphenyl (126)								
2,2',3,3',4,4'-Hexachlorobiphenyl (128)								
2,2',3,3',4,5-Hexachlorobiphenyl (129)								
2,2',3,3',4,5'-Hexachlorobiphenyl (130)								
2,2',3,3',4,6-Hexachlorobiphenyl (131)								
2,2',3,3',4,6'-Hexachlorobiphenyl (132)								
2,2',3,3',5,6-Hexachlorobiphenyl (134)								
2,2',3,3',5,6'-Hexachlorobiphenyl (135)								
2,2',3,3',6,6'-Hexachlorobiphenyl (136)								
2,2',3,4,4',5-Hexachlorobiphenyl (137)								
2,2',3,4,5,5'-Hexachlorobiphenyl (141)								
2,2',3,4,5',6-Hexachlorobiphenyl (144)								
2,2',3,4',5,5'-Hexachlorobiphenyl (146)								
2,2',3,4',5,6-Hexachlorobiphenyl (147)								
2,2',4,4',5,5'-Hexachlorobiphenyl (153)								
2,3,3',4,4',5-Hexachlorobiphenyl (156)								
2,3,3',4,4',6-Hexachlorobiphenyl (158)								
2,3',4,4',5,5'-Hexachlorobiphenyl (167)								
3,3',4,4',5,5'-Hexachlorobiphenyl (169)								
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)								
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)								
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)								
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)								
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)								
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)								
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)								
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)								
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)								
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)								
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)								
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)								
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)								
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)								
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)								
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)								

Table A-14
Summary Statistics and Analytical Results for White Sucker - Upstream

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PARAMETER	GMP-WS-5004-0000-01-W 6/22/2001	GMP-WS-5005-0000-01-W 6/22/2001	GMP-WS-5006-0000-01-W 6/22/2001	GMP-WS-5007-0000-01-W 6/22/2001 DUPLICATE	GMP-WS-5007-0000-01-W 6/22/2001	GMP-WS-5008-0000-01-W 6/22/2001	GMP-WS-5009-0000-01-W 6/22/2001	GMP-WS-5010-0000-01-W 6/22/2001
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)								
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)								
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)								
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)								
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)								
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)								
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (200)								
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)								
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)								
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)								
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl								
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl								
Decachlorobiphenyl (209)								
PCB Congeners, Total								
Toxicity Equivalency (PCB)								
Other (%)								
Lipid_percent	8.93	8.69	8.66	13.5	13.8	14.9	6.49	12.3

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* **106**(12):775-792.

Samples ending with:
W - whole body

Table A-15
Summary Statistics and Analytical Results for American Eel - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	APC-AE-4001-0000-01-W 6/20/2001	APC-AE-4002-0000-01-W 6/20/2001	APC-AE-4003-0000-01-W 6/20/2001
Semivolatile Organics (ug/Kg)										
1,1'-Biphenyl	7	10	1.26	1.34	0.55	0.7	0.63	1.34 U	0.65 J	0.7 J
2-Methylnaphthalene	10	10			2.43	4.45	3.15	4.05	3.85	2.43
Acenaphthene	10	10			2.34	5.6	4.01	2.37	5.11	3.15
Acenaphthylene	10	10			0.77	1.87	1.26	0.84 J	1.87	0.96 J
Anthracene	10	10			0.89	2.16	1.46	0.89 J	1.87	1.04 J
Benzo(a)anthracene	0	10	1.26	1.86			0.68	1.34 U	1.31 U	1.27 U
Benzo(a)pyrene	0	10	1.26	1.66			0.67	1.34 U	1.31 U	1.27 U
Benzo(b)fluoranthene	0	10	1.27	2.86			0.77	1.34 U	1.31 U	1.27 U
Benzo(g,h,i)perylene	0	10	1.26	1.65			0.67	1.34 U	1.31 U	1.27 U
Benzo(k)fluoranthene	0	10	1.26	2.58			0.74	1.34 U	1.31 U	1.27 U
Chrysene	0	10	1.29	3.81			0.92	1.34 U	1.32 U	2.04 U
Dibenzo(a,h)anthracene	0	10	1.26	1.34			0.65	1.34 U	1.31 U	1.27 U
Dibenzofuran	10	10			0.84	1.33	1.13	1.22 J	1.25 J	1.24 J
Fluoranthene	9	10	4.76	4.76	5.66	12.53	7.61	4.76 U	8.92	6.51
Fluorene	10	10			1.26	2.24	1.70	1.52	2.11	1.5
Indeno(1,2,3-cd)pyrene	0	10	1.26	1.62			0.67	1.34 U	1.31 U	1.27 U
Naphthalene	10	10			3.32	5.46	4.17	4.41	5.46	3.67
Phenanthrene	10	10			5.96	10.63	8.07	5.96	10.07	6.4
Pyrene	1	10	2.29	4.8	6.65	6.65	2.13	2.31 U	3.64 U	3 U
Total PAH	10	10			21.26	51.18	33.43	21.26	41.16	27.62
Pesticides/PCBs (ug/Kg)										
4,4'-DDD	12	12			6.06	42.05	12.66	6.06 J	13.15 J	8.21
4,4'-DDE	12	12			3.52	33.05	20.36	15.16 J	26.66 J	17.65
4,4'-DDT	10	12	1.29	1.32	1.37	11.06	3.56	2.11 J	6.14 J	1.37
Aldrin	0	12	0.59	1.34			0.62	1.34 UJ	1.31 UJ	1.27 U
alpha-BHC	0	12	0.59	1.34			0.62	1.34 UJ	1.31 UJ	1.28 U
alpha-Chlordane	12	12			5.79	71.2	22.44	7.5 J	21.81 J	12.63
Aroclor, Total	9	12	128.57	132.07	360.24	1233.23	597.05	499.87 J	723.98 J	820.17
Aroclor-1016	0	12	7.42	16.69			7.73	16.69 UJ	16.34 UJ	15.89 U
Aroclor-1221	0	12	7.42	16.69			7.73	16.69 UJ	16.34 UJ	15.89 U
Aroclor-1232	0	12	7.42	16.69			7.73	16.69 UJ	16.34 UJ	15.89 U
Aroclor-1242	0	12	7.42	16.69			7.73	16.69 UJ	16.34 UJ	15.89 U
Aroclor-1248	0	12	7.42	16.69			7.73	16.69 UJ	16.34 UJ	15.89 U
Aroclor-1254	9	12	16.07	16.51	360.24	1155.76	576.33	499.87 J	723.98 J	820.17
Aroclor-1260	0	12	7.42	16.69			7.73	16.69 UJ	16.34 UJ	15.89 U
Aroclor-1268	1	12	15.73	16.69	77.47	77.47	13.88	16.69 UJ	16.34 UJ	15.89 U
beta-BHC	1	12	0.59	1.34	0.72	0.72	0.63	1.34 UJ	1.31 UJ	1.27 U
delta-BHC	0	12	0.59	1.34			0.62	1.34 UJ	1.31 UJ	1.28 U

Table A-15
Summary Statistics and Analytical Results for American Eel - Allendale

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	APC-AE-4001-0000-01-W 6/20/2001	APC-AE-4002-0000-01-W 6/20/2001	APC-AE-4003-0000-01-W 6/20/2001
Dieldrin	11	12	0.59	0.59	2.97	14.48	6.10	5.6 J	7.72 J	7.6
Endosulfan I	0	12	0.59	1.34			0.62	1.34 UJ	1.31 UJ	1.27 U
Endosulfan II	0	12	0.59	1.34			0.62	1.34 UJ	1.31 UJ	1.27 U
Endosulfan Sulfate	1	12	1.26	1.34	9.99	9.99	1.43	1.34 UJ	1.31 UJ	1.27 U
Endrin	0	12	0.59	1.34			0.62	1.34 UJ	1.31 UJ	1.27 U
Endrin Aldehyde	1	12	1.26	1.34	0.8	0.8	0.66	1.34 UJ	1.31 UJ	1.27 UJ
Endrin Ketone	0	12	0.59	1.34			0.62	1.34 UJ	1.31 UJ	1.27 U
gamma-BHC	9	12	0.59	1.34	0.08	0.72	0.46	1.34 UJ	0.42 J	0.27 J
gamma-Chlordane	12	12			2.14	25.49	8.23	2.6 J	8.1 J	4.56
Heptachlor	1	12	0.59	1.34	1.29	1.29	0.67	1.34 UJ	1.31 UJ	1.27 U
Heptachlor Epoxide	11	12	0.59	0.59	0.67	4.83	1.68	0.67 J	1.78 J	0.95 J
Methoxychlor	0	12	0.59	1.34			0.62	1.34 UJ	1.31 UJ	1.28 UJ
Technical Chlordane	12	12			88.24	885.69	299.07	102.59 J	261.78 J	145.84 J
Toxaphene	0	12	7.42	33.38			15.15	33.38 UJ	32.69 UJ	31.79 U
Inorganics (mg/Kg)										
Aluminum	10	10			1.16	19.5	7.40	8.06 J	1.22 J	4.69 J
Antimony	0	10	0.034	0.034			0.0170	0.034 U	0.034 U	0.034 U
Arsenic	0	10	0.0464	0.11			0.0409	0.0845 U	0.0909 U	0.0903 U
Barium	10	10			0.24	0.681	0.434	0.432 J	0.308 J	0.38 J
Beryllium	0	10	0.004	0.004			0.00200	0.004 U	0.004 U	0.004 U
Cadmium	10	10			0.0295	0.248	0.0971	0.0843 J	0.132 J	0.0984 J
Chromium	10	10			0.0281	0.123	0.0650	0.0644 J	0.0579 J	0.0475 J
Cobalt	10	10			0.0563	0.138	0.0745	0.0564 J	0.0703 J	0.0589 J
Copper	10	10			0.519	1.03	0.750	0.787 J	0.888 J	0.724 J
Iron	10	10			14.3	39.3	27.8	27.6	25.6	25.1
Lead	9	10	0.12	0.12	0.229	0.952	0.428	0.642 J	0.231 J	0.502 J
Manganese	10	10			1.62	7.7	3.51	2.7 J	2.04 J	2.33 J
Mercury	10	10			0.0356	0.24	0.111	0.0826	0.0838	0.0356
Mercury (methyl)	10	10			0.0326	0.471	0.134	0.0829	0.0944	0.0326
Molybdenum	1	10	0.32	0.32	0.115	0.115	0.156	0.32 U	0.32 U	0.32 U
Nickel	10	10			0.0799	0.214	0.118	0.0801 J	0.1 J	0.0894 J
Selenium	10	10			0.307	0.523	0.379	0.455	0.369 J	0.523
Silver	0	10	0.06	0.06			0.0300	0.06 U	0.06 U	0.06 U
Thallium	0	10	0.022	0.022			0.0110	0.022 U	0.022 U	0.022 U
Vanadium	2	10	0.179	0.179	0.0804	0.109	0.0905	0.0804 J	0.179 U	0.179 U
Zinc	10	10			24.2	34.6	28.6	29.9 J	24.2 J	27.9 J
Dioxins/Furans (ug/Kg)										
HCX	9	10	0.01998	0.01998	0.00774	0.10904	0.05825	0.03672 J	0.09129 J	0.04654 J
TCX	0	0						R	R	R

Table A-15
Summary Statistics and Analytical Results for American Eel - Allendale

Data Evaluation Report
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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	APC-AE-4001-0000-01-W 6/20/2001	APC-AE-4002-0000-01-W 6/20/2001	APC-AE-4003-0000-01-W 6/20/2001
2,3,7,8-TCDD	10	10			0.00928	0.30691	0.11078	0.05464 J	0.13875 J	0.08423 J
1,2,3,7,8-PeCDD	0	10	0.00019	0.00115			0.00027	0.00115 UJ	0.00049 UJ	0.0005 UJ
1,2,3,4,7,8-HxCDD	6	10	0.00009	0.00058	0.00018	0.00049	0.00025	0.00058 UJ	0.00042 J	0.00039 UJ
1,2,3,6,7,8-HxCDD	9	10	0.00057	0.00057	0.00047	0.00187	0.00109	0.00057 UJ	0.00187 J	0.00084 J
1,2,3,7,8,9-HxCDD	6	10	0.00018	0.00054	0.00015	0.00043	0.00021	0.00054 UJ	0.00032 J	0.00037 UJ
1,2,3,4,6,7,8-HpCDD	5	10	0.00058	0.00203	0.00096	0.00241	0.00112	0.00058 UJ	0.00203 UJ	0.00096 UJ
OCDD	0	10	0.00114	0.00786			0.00137	0.00196 UJ	0.00344 UJ	0.00201 UJ
2,3,7,8-TCDF	2	10	0.00015	0.00049	0.00006	0.00008	0.00013	0.0004 UJ	0.00045 UJ	0.00049 UJ
1,2,3,7,8-PeCDF	1	10	0.0001	0.00061	0.00008	0.00008	0.00017	0.00061 UJ	0.00051 UJ	0.00058 UJ
2,3,4,7,8-PeCDF	3	10	0.00019	0.0006	0.00012	0.00031	0.00019	0.0006 UJ	0.00049 UJ	0.00054 UJ
1,2,3,4,7,8-HxCDF	0	10	0.00013	0.00036			0.00011	0.00028 UJ	0.00027 UJ	0.00017 UJ
1,2,3,6,7,8-HxCDF	7	10	0.00012	0.00028	0.00011	0.00033	0.00017	0.00028 UJ	0.00033 J	0.00011 J
2,3,4,6,7,8-HxCDF	0	10	0.00007	0.00036			0.00009	0.0003 UJ	0.00025 UJ	0.00036 UJ
1,2,3,7,8,9-HxCDF	1	10	0.0001	0.00036	0.00002	0.00002	0.00010	0.00032 UJ	0.0003 UJ	0.00038 UJ
1,2,3,4,6,7,8-HpCDF	3	10	0.00022	0.00086	0.00042	0.00087	0.00037	0.0003 UJ	0.00086 UJ	0.00034 UJ
1,2,3,4,7,8,9-HpCDF	0	10	0.00013	0.00049			0.00011	0.00036 UJ	0.00026 UJ	0.00049 UJ
OCDF	0	10	0.00008	0.00054			0.00015	0.00054 UJ	0.0004 UJ	0.00039 UJ
Total TCDD	10	10			0.00928	0.30691	0.11078	0.05464 J	0.13875 J	0.08423 J
Total PeCDD	0	10	0.00019	0.00115			0.00027	0.00115 UJ	0.00049 UJ	0.0005 UJ
Total HxCDD	9	10	0.00056	0.00056	0.00075	0.00312	0.00154	0.00056 UJ	0.0026 J	0.00084 J
Total HpCDD	0	10	0.00058	0.00251			0.00075	0.00058 UJ	0.00203 UJ	0.00096 UJ
Total TCDF	4	10	0.00006	0.00049	0.00006	0.00023	0.00014	0.0004 UJ	0.00045 UJ	0.00049 UJ
Total PeCDF	5	10	0.00026	0.00061	0.00015	0.00083	0.00040	0.00061 UJ	0.0005 UJ	0.00072 J
Total HxCDF	0	10	0.00024	0.00104			0.00024	0.00024 UJ	0.00086 UJ	0.00027 UJ
Total HpCDF	0	10	0.00022	0.00199			0.00042	0.0005 UJ	0.00163 UJ	0.00034 UJ
Toxicity Equivalency (Dioxins, Furans, HCX)	10	10			0.00943	0.307	0.111	0.0546	0.139	0.0843
PCB Congeners (ug/Kg)										
2-Monochlorobiphenyl (1)	0	3	0.01061	0.01501			0.00625	0.01061 UJ	0.01501 UJ	0.0119 UJ
4-Chlorobiphenyl (3)	0	3	0.0116	0.01449			0.00665	0.0116 UJ	0.01449 UJ	0.01382 UJ
2,2'-Dichlorobiphenyl (4)	1	3	0.03373	0.03585	0.05477	0.05477	0.02985	0.03373 UJ	0.05477 J	0.03585 UJ
2,3-Dichlorobiphenyl (5)	0	3	0.00214	0.00999			0.00239	0.00999 UJ	0.00222 UJ	0.00214 UJ
2,3'-Dichlorobiphenyl (6)	0	3	0.01402	0.01626			0.00758	0.01402 UJ	0.01522 UJ	0.01626 UJ
2,4-Dichlorobiphenyl (7)	0	3	0.00352	0.0062			0.00243	0.00352 UJ	0.00485 UJ	0.0062 UJ
2,4'-Dichlorobiphenyl (8)	0	3	0.07111	0.08704			0.03864	0.07111 UJ	0.07367 UJ	0.08704 UJ
2,5-Dichlorobiphenyl (9)	0	3	0.00502	0.00695			0.00315	0.00502 UJ	0.00692 UJ	0.00695 UJ
2,6-Dichlorobiphenyl (10)	3	3			0.00175	0.0023	0.00204	0.0023 J	0.00206 J	0.00175 J
3,4-Dichlorobiphenyl (12)	0	3	0.00916	0.0165			0.00654	0.00916 UJ	0.0165 UJ	0.01358 UJ
2,2',3'-Trichlorobiphenyl (16)	0	3	0.03667	0.06634			0.02417	0.03667 UJ	0.06634 UJ	0.04198 UJ
2,2',4-Trichlorobiphenyl (17)	1	3	0.04095	0.05015	0.07725	0.07725	0.04093	0.04095 UJ	0.07725 J	0.05015 UJ

Table A-15
Summary Statistics and Analytical Results for American Eel - Allendale

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2,2',5-Trichlorobiphenyl (18)	2	3	0.1212	0.1212	0.14918	0.2759	0.16189	0.1212 UJ	0.2759 J	0.14918 J
2,2',6-Trichlorobiphenyl (19)	3	3			0.01808	0.03684	0.02719	0.01808 J	0.03684 J	0.02664 J
2,3,3'-Trichlorobiphenyl (20)	3	3			1.0754	4.51384	2.54773	1.0754 J	4.51384 J	2.05396 J
2,3,4'-Trichlorobiphenyl (22)	3	3			0.12909	0.32507	0.24255	0.12909 J	0.32507 J	0.27349 J
2,3,6-Trichlorobiphenyl (24)	2	3	0.0129	0.0129	0.01506	0.03114	0.01755	0.0129 UJ	0.03114 J	0.01506 J
2,3',4-Trichlorobiphenyl (25)	2	3	0.01345	0.01345	0.02809	0.03786	0.02423	0.01345 UJ	0.03786 J	0.02809 J
2,3',5-Trichlorobiphenyl (26)	3	3			0.1249	0.50686	0.28547	0.1249 J	0.50686 J	0.22466 J
2,4',5-Trichlorobiphenyl (31)	3	3			0.53872	1.97938	1.14903	0.53872 J	1.97938 J	0.929 J
2,4',6-Trichlorobiphenyl (32)	3	3			0.06656	0.17737	0.11496	0.06656 J	0.17737 J	0.10094 J
2,2',3,3'-Tetrachlorobiphenyl (40)	3	3			0.0792	0.20826	0.15175	0.0792 J	0.20826 J	0.16779 J
2,2',3,4'-Tetrachlorobiphenyl (42)	3	3			0.49435	1.46931	1.00633	0.49435 J	1.46931 J	1.05532 J
2,2',3,5-Tetrachlorobiphenyl (43)	3	3			16.74573	47.28633	34.17321	16.74573 J	47.28633 J	38.48757 J
2,2',3,5'-Tetrachlorobiphenyl (44)	3	3			3.21243	11.84715	7.53655	3.21243 J	11.84715 J	7.55007 J
2,2',3,6-Tetrachlorobiphenyl (45)	3	3			0.07316	0.29294	0.16811	0.07316 J	0.29294 J	0.13824 J
2,2',3,6'-Tetrachlorobiphenyl (46)	3	3			0.01636	0.0424	0.02964	0.01636 J	0.0424 J	0.03017 J
2,2',4,5-Tetrachlorobiphenyl (48)	1	3	0.0262	0.04084	0.09497	0.09497	0.04283	0.0262 UJ	0.09497 J	0.04084 UJ
2,2',4,5'-Tetrachlorobiphenyl (49)	3	3			1.21338	3.8119	2.74363	1.21338 J	3.8119 J	3.2056 J
2,2',4,6-Tetrachlorobiphenyl (50)	3	3			0.07506	0.34124	0.19317	0.07506 J	0.34124 J	0.1632 J
2,3,3',4'-Tetrachlorobiphenyl (56)	1	3	0.03984	0.0687	0.24446	0.24446	0.09958	0.0687 UJ	0.03984 UJ	0.24446 J
2,3,3',6-Tetrachlorobiphenyl (59)	3	3			2.33334	5.94804	4.40070	2.33334 J	5.94804 J	4.92072 J
2,3,4,4'-Tetrachlorobiphenyl (60)	3	3			0.62382	1.36268	0.92385	0.62382 J	1.36268 J	0.78504 J
2,3,4,5-Tetrachlorobiphenyl (61)	3	3			2.00672	8.08904	5.08189	2.00672 J	8.08904 J	5.14992 J
2,3,4',5-Tetrachlorobiphenyl (63)	3	3			0.1043	0.36308	0.23505	0.1043 J	0.36308 J	0.23776 J
2,3,4',6-Tetrachlorobiphenyl (64)	3	3			4.08494	14.17297	8.77107	4.08494 J	14.17297 J	8.05529 J
2,3',4,4'-Tetrachlorobiphenyl (66)	3	3			3.48906	21.72241	13.06816	3.48906 J	21.72241 J	13.99302 J
3,3',4,4'-Tetrachlorobiphenyl (77)	3	3			0.02316	0.0801	0.05190	0.02316 J	0.05243 J	0.0801 J
3,4,4',5-Tetrachlorobiphenyl (81)	0	3	0.09959	0.09995			0.04991	0.09995 UJ	0.09959 UJ	0.09993 UJ
2,2',3,3',4-Pentachlorobiphenyl (82)	3	3			0.55838	3.23522	2.34209	0.55838 J	3.23522 J	3.23268 J
2,2',3,3',5-Pentachlorobiphenyl (83)	3	3			21.58828	58.88034	44.41984	21.58828 J	58.88034 J	52.7909 J
2,2',3,3',6-Pentachlorobiphenyl (84)	3	3			1.4581	9.89024	6.49384	1.4581 J	9.89024 J	8.13317 J
2,2',3,4,4'-Pentachlorobiphenyl (85)	3	3			8.39232	24.55848	17.59026	8.39232 J	24.55848 J	19.81998 J
2,2',3,4,5-Pentachlorobiphenyl (86)	3	3			6.6777	36.21222	24.33284	6.6777 J	36.21222 J	30.1086 J
2,2',3,4,6-Pentachlorobiphenyl (88)	3	3			1.27484	6.92126	4.96181	1.27484 J	6.68932 J	6.92126 J
2,2',3,4,6'-Pentachlorobiphenyl (89)	3	3			0.00617	0.01645	0.01200	0.00617 J	0.01645 J	0.01339 J
2,2',3,4',5-Pentachlorobiphenyl (90)	2	3	0.19919	0.19919	14.9307	64.0341	26.35480	14.9307 J	0.19919 UJ	64.0341 J
2,2',3,5,5'-Pentachlorobiphenyl (92)	3	3			4.93167	29.7467	19.59123	4.93167 J	29.7467 J	24.09531 J
2,2',3,5,6-Pentachlorobiphenyl (93)	3	3			4.88625	34.4837	24.50975	4.88625 J	34.1593 J	34.4837 J
2,3,3',4,4'-Pentachlorobiphenyl (105)	3	3			8.6516	32.93143	19.20014	8.6516 J	32.93143 J	16.01738 J
2,3,3',4,5-Pentachlorobiphenyl (106)	3	3			0.72966	3.98376	2.54914	0.72966 J	3.98376 J	2.934 J

Table A-15
Summary Statistics and Analytical Results for American Eel - Allendale

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2,3,3',4',5'-Pentachlorobiphenyl (108)	3	3			0.21428	0.89592	0.63359	0.21428 J	0.89592 J	0.79056 J
2,3,3',4',6-Pentachlorobiphenyl (110)	3	3			31.61692	90.8878	60.44795	31.61692 J	58.83914 J	90.8878 J
2,3,4,4',5-Pentachlorobiphenyl (114)	3	3			0.47424	1.38881	0.98030	0.47424 J	1.38881 J	1.07785 J
2,3',4,4',5-Pentachlorobiphenyl (118)	3	3			38.15123	77.93649	59.30778	38.15123 J	61.83562 J	77.93649 J
3,3',4,4',5-Pentachlorobiphenyl (126)	3	3			0.18562	0.26193	0.21530	0.19836 J	0.18562 J	0.26193 J
2,2',3,3',4,4'-Hexachlorobiphenyl (128)	3	3			10.73276	40.96492	26.03015	10.73276 J	40.96492 J	26.39278 J
2,2',3,3',4,5-Hexachlorobiphenyl (129)	2	3	0.09959	0.09959	81.81936	198.53288	93.46735	81.81936 J	0.09959 UJ	198.53288 J
2,2',3,3',4,5'-Hexachlorobiphenyl (130)	3	3			4.50121	13.57866	9.82927	4.50121 J	13.57866 J	11.40795 J
2,2',3,3',4,6-Hexachlorobiphenyl (131)	3	3			0.05741	0.558	0.32602	0.05741 J	0.558 J	0.36265 J
2,2',3,3',4,6'-Hexachlorobiphenyl (132)	3	3			2.37057	26.31192	15.69301	2.37057 J	26.31192 J	18.39653 J
2,2',3,3',5,6-Hexachlorobiphenyl (134)	3	3			1.31356	6.19102	4.32394	1.31356 J	6.19102 J	5.46724 J
2,2',3,3',5,6'-Hexachlorobiphenyl (135)	3	3			2.13474	15.77205	9.87112	2.13474 J	11.70657 J	15.77205 J
2,2',3,3',6,6'-Hexachlorobiphenyl (136)	3	3			0.41494	2.9647	1.97741	0.41494 J	2.9647 J	2.55259 J
2,2',3,4,4',5-Hexachlorobiphenyl (137)	3	3			4.97642	21.35934	15.21126	4.97642 J	19.29802 J	21.35934 J
2,2',3,4,5,5'-Hexachlorobiphenyl (141)	3	3			4.8536	17.31979	12.05997	4.8536 J	17.31979 J	14.00651 J
2,2',3,4,5',6-Hexachlorobiphenyl (144)	1	3	0.09959	0.09995	0.10486	0.10486	0.06821	0.09995 UJ	0.09959 UJ	0.10486 J
2,2',3,4',5,5'-Hexachlorobiphenyl (146)	3	3			9.89756	24.76886	19.63271	9.89756 J	24.2317 J	24.76886 J
2,2',3,4',5,6-Hexachlorobiphenyl (147)	3	3			26.53416	158.8132	93.79665	26.53416 J	96.0426 J	158.8132 J
2,2',4,4',5,5'-Hexachlorobiphenyl (153)	3	3			49.3737	92.0445	76.01673	49.3737 J	92.0445 J	86.632 J
2,3,3',4,4',5-Hexachlorobiphenyl (156)	3	3			4.2665	14.36836	9.34429	4.2665 J	14.36836 J	9.398 J
2,3,3',4,4',6-Hexachlorobiphenyl (158)	3	3			5.78747	18.14329	12.04495	5.78747 J	18.14329 J	12.20409 J
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	3	3			1.79768	6.52664	4.19429	1.79768 J	6.52664 J	4.25856 J
3,3',4,4',5,5'-Hexachlorobiphenyl (169)	1	3	0.09995	0.21475	0.1249	0.1249	0.09408	0.09995 UJ	0.1249 J	0.21475 UJ
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	3	3			5.8596	20.50263	13.50558	5.8596 J	20.50263 J	14.1545 J
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)	3	3			1.8289	6.16718	4.08168	1.8289 J	6.16718 J	4.24896 J
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)	3	3			1.17437	3.02973	2.18125	1.17437 J	3.02973 J	2.33964 J
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)	3	3			1.58702	7.129	5.16478	1.58702 J	7.129 J	6.77832 J
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)	3	3			0.09935	0.32172	0.19926	0.09935 J	0.32172 J	0.1767 J
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)	3	3			0.03743	0.35797	0.18325	0.03743 J	0.35797 J	0.15436 J
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)	3	3			4.01781	11.92712	8.54284	4.01781 J	11.92712 J	9.6836 J
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)	3	3			1.7053	3.47069	2.73884	1.7053 J	3.47069 J	3.04053 J
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)	3	3			9.58516	29.05826	18.78534	9.58516 J	29.05826 J	17.7126 J
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)	0	3	0.19919	0.1999			0.09982	0.1999 UJ	0.19919 UJ	0.19985 UJ
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)	3	3			2.36863	5.27826	3.60914	2.36863 J	5.27826 J	3.18054 J
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)	3	3			0.01095	0.02223	0.01573	0.01095 J	0.02223 J	0.01401 J
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)	3	3			0.07786	0.36328	0.24105	0.07786 J	0.36328 J	0.28202 J
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	3	3			25.83873	57.86682	43.28915	25.83873 J	46.1619 J	57.86682 J
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	3	3			0.17875	0.49632	0.34137	0.17875 J	0.49632 J	0.34905 J
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)	3	3			2.07324	5.42516	3.68571	2.07324 J	5.42516 J	3.55873 J

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2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	3	3			0.18794	0.62282	0.39144	0.18794 J	0.62282 J	0.36355 J
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	3	3			1.58798	4.88722	2.98242	1.58798 J	4.88722 J	2.47206 J
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	3	3			0.72547	1.97857	1.25091	0.72547 J	1.97857 J	1.04869 J
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)	3	3			0.84563	2.57743	1.47447	0.84563 J	2.57743 J	1.00034 J
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)	3	3			0.06455	0.14054	0.08988	0.06455 J	0.14054 J	0.06455 J
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)	3	3			12.24624	27.8624	22.43299	12.24624 J	27.8624 J	27.19034 J
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (200)	3	3			0.03147	0.16105	0.09741	0.03147 J	0.16105 J	0.0997 J
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)	3	3			0.24237	0.62736	0.37926	0.24237 J	0.62736 J	0.26804 J
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)	3	3			2.81398	7.35651	4.60995	2.81398 J	7.35651 J	3.65937 J
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	3	3			0.10035	0.24909	0.16263	0.10035 J	0.24909 J	0.13846 J
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	3	3			5.69203	16.07881	10.72211	5.69203 J	16.07881 J	10.39548 J
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	3	3			0.38422	1.10777	0.67121	0.38422 J	1.10777 J	0.52163 J
Decachlorobiphenyl (209)	3	3			2.81527	9.26879	5.82671	2.81527 J	9.26879 J	5.39606 J
PCB Congeners, Total	3	3			476.283	1308.19488	958.68511	476.283 J	1091.57746 J	1308.19488 J
Toxicity Equivalency (PCB)	3	3			0.0269	0.0409	0.0350	0.0269	0.0373	0.0409
Other (%)										
Lipid_percent	11	11			7.33	17.7	13.1	7.33	15.8	10.7

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* 106(12):775-792.

Samples ending with:
W - whole body

Table A-15
Summary Statistics and Analytical Results for American Eel - Allendale

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Semivolatile Organics (ug/Kg)								
1,1'-Biphenyl	0.57 J	0.63 J	1.26 U			1.29 U	0.59 J	0.64 J
2-Methylnaphthalene	2.66	3.25	2.85			2.45	3.06	4.45
Acenaphthene	4.23	5.6	2.34			3.56	4.13	5.44
Acenaphthylene	1.09 J	1.83	0.77 J			0.98 J	0.9 J	1.75
Anthracene	1.39	2.16	1.04 J			0.97 J	1.24 J	1.92
Benzo(a)anthracene	1.27 U	1.86 U	1.26 U			1.29 U	1.31 U	1.31 U
Benzo(a)pyrene	1.27 U	1.66 U	1.26 U			1.29 U	1.31 U	1.32 U
Benzo(b)fluoranthene	1.27 U	2.86 U	1.27 U			1.29 U	1.31 U	2.14 U
Benzo(g,h,i)perylene	1.27 U	1.65 U	1.26 U			1.29 U	1.31 U	1.35 U
Benzo(k)fluoranthene	1.3 U	2.58 U	1.26 U			1.29 U	1.31 U	1.86 U
Chrysene	1.73 U	3.81 U	1.57 U			1.29 U	1.31 U	2.6 U
Dibenzo(a,h)anthracene	1.27 U	1.29 U	1.26 U			1.29 U	1.31 U	1.31 U
Dibenzofuran	1.15 J	1.21 J	0.84 J			0.93 J	0.96 J	1.33
Fluoranthene	8.77	12.53	5.66			6.63	7.4	9.97
Fluorene	1.79	1.99	1.33			1.26 J	1.58	2.24
Indeno(1,2,3-cd)pyrene	1.27 U	1.62 U	1.26 U			1.29 U	1.31 U	1.44 U
Naphthalene	3.64	4.7	3.37			3.82	4.23	5.1
Phenanthrene	9.5	10.63	6.26			6.08	7.54	9.83
Pyrene	4.2 U	6.65	2.92 U			2.7 U	2.29 U	4.8 U
Total PAH	34.79	51.18	24.47			26.68	31.63	42.68
Pesticides/PCBs (ug/Kg)								
4,4'-DDD	10.01	12	11.06	42.05	10.3	9.1	7.15	10.99
4,4'-DDE	21.47	20.83	11.36 J	3.52	22.61	19.12	25.26	33.05
4,4'-DDT	2.45	4.46	3.52	11.06	1.32 U	3.56	4.74	2.05
Aldrin	1.27 U	1.29 U	1.26 UJ	0.59 U	1.32 U	1.29 U	1.31 U	1.31 U
alpha-BHC	1.27 U	1.29 U	1.26 UJ	0.59 U	1.32 U	1.29 U	1.31 U	1.32 U
alpha-Chlordane	12.83	14.24	5.79 J	25.31	71.2	63.27	11.49	10.12
Aroclor, Total	600.52	692.01	360.24 J	1233.23 J	132.07 U	128.57 U	130.63 U	1031.08
Aroclor-1016	15.86 U	16.14 U	15.73 UJ	7.42 U	16.51 U	16.07 U	16.33 U	16.39 U
Aroclor-1221	15.86 U	16.14 U	15.73 UJ	7.42 U	16.51 U	16.07 U	16.33 U	16.39 U
Aroclor-1232	15.86 U	16.14 U	15.73 UJ	7.42 U	16.51 U	16.07 U	16.33 U	16.39 U
Aroclor-1242	15.86 U	16.14 U	15.73 UJ	7.42 U	16.51 U	16.07 U	16.33 U	16.39 U
Aroclor-1248	15.86 U	16.14 U	15.73 UJ	7.42 U	16.51 U	16.07 U	16.33 U	16.39 U
Aroclor-1254	600.52	692.01	360.24 J	1155.76	16.51 U	16.07 U	16.33 U	1031.08
Aroclor-1260	15.86 U	16.14 U	15.73 UJ	7.42 U	16.51 U	16.07 U	16.33 U	16.39 U
Aroclor-1268	15.86 U	16.14 U	15.73 UJ	77.47 J	16.51 U	16.07 U	16.33 U	16.39 U
beta-BHC	0.72 J	1.29 U	1.26 UJ	0.59 U	1.32 U	1.29 U	1.31 U	1.31 U
delta-BHC	1.27 U	1.29 U	1.26 UJ	0.59 UJ	1.32 U	1.29 U	1.31 U	1.32 U

Table A-15
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Dieldrin	4.86	6.5	2.97 J	0.59 U	3.52	3.13	3.92	14.48
Endosulfan I	1.27 U	1.29 U	1.26 UJ	0.59 U	1.32 U	1.29 U	1.31 U	1.31 U
Endosulfan II	1.27 U	1.29 U	1.26 UJ	0.59 U	1.32 U	1.29 U	1.31 U	1.31 U
Endosulfan Sulfate	1.27 U	1.29 U	1.26 UJ	9.99	1.32 U	1.29 U	1.31 U	1.31 U
Endrin	1.27 U	1.29 U	1.26 UJ	0.59 U	1.32 U	1.29 U	1.31 U	1.31 U
Endrin Aldehyde	1.27 UJ	1.29 UJ	1.26 UJ	0.8	1.32 U	1.29 UJ	1.31 UJ	1.31 UJ
Endrin Ketone	1.27 U	1.29 U	1.26 UJ	0.59 U	1.32 U	1.29 U	1.31 U	1.31 U
gamma-BHC	1.27 U	0.7 J	0.08 J	0.59 UJ	0.41 J	0.5 J	0.72 J	0.54 J
gamma-Chlordane	5.09	5.69	2.14 J	8.98	25.49	22.96	4.31	4.2
Heptachlor	1.27 U	1.29 U	1.26 UJ	0.59 U	1.32 U	1.29	1.31 U	1.31 U
Heptachlor Epoxide	1.42	1.57	0.74 J	0.59 U	4.83	4.46	1.42	0.93 J
Methoxychlor	1.27 UJ	1.29 UJ	1.26 UJ	0.59 U	1.32 U	1.29 UJ	1.31 UJ	1.32 UJ
Technical Chlordane	173.41	180.63	88.24 J	321.69	885.69	762.53	183.39	256.09
Toxaphene	31.73 U	32.28 U	31.46 UJ	7.42 U	33.02 U	32.14 U	32.66 U	32.79 U
Inorganics (mg/Kg)								
Aluminum	5.95 J	15.7 J	19.5 J			2.01 J	2.57 J	13.1 J
Antimony	0.034 U	0.034 U	0.034 U			0.034 U	0.034 U	0.034 U
Arsenic	0.11 U	0.0919 U	0.0924 U			0.0718 U	0.0565 U	0.0824 U
Barium	0.24 J	0.364 J	0.604 J			0.681 J	0.263 J	0.457 J
Beryllium	0.004 U	0.004 U	0.004 U			0.004 U	0.004 U	0.004 U
Cadmium	0.0696 J	0.0665 J	0.0756 J			0.0295 J	0.08 J	0.248
Chromium	0.0417 J	0.123 J	0.0779 J			0.0346 J	0.0681 J	0.107 J
Cobalt	0.0591 J	0.0563 J	0.0617 J			0.138 J	0.0587 J	0.0818 J
Copper	0.766 J	0.652 J	0.657 J			1.03 J	0.714 J	0.76 J
Iron	27.9	33.8	31.3			31	22.3	39.3
Lead	0.229 J	0.251 J	0.279 J			0.952 J	0.12 U	0.596 J
Manganese	2.53 J	1.62 J	4.16 J			4.05 J	7.7 J	2.57 J
Mercury	0.148	0.0635	0.145			0.24	0.216	0.0435
Mercury (methyl)	0.139	0.0638	0.116			0.226	0.471	0.0483
Molybdenum	0.115 J	0.32 U	0.32 U			0.32 U	0.32 U	0.32 U
Nickel	0.131 J	0.0888 J	0.0799 J			0.214 J	0.0856 J	0.147 J
Selenium	0.339 J	0.401 J	0.347 J			0.307 J	0.393 J	0.317 J
Silver	0.06 U	0.06 U	0.06 U			0.06 U	0.06 U	0.06 U
Thallium	0.022 U	0.022 U	0.022 U			0.022 U	0.022 U	0.022 U
Vanadium	0.179 U	0.109 J	0.179 U			0.179 U	0.179 U	0.179 U
Zinc	34.6 J	29.2 J	24.9 J			26.8 J	34.3 J	24.4 J
Dioxins/Furans (ug/Kg)								
HCX	0.07239 J	0.10904 J	0.08916 J			0.01998 UJ	0.00774 J	0.07011 J
TCX	R	R	R			R	R	R

Table A-15
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2,3,7,8-TCDD	0.07649 J	0.22532 J	0.30691 J			0.00928 J	0.02649 J	0.09259 J
1,2,3,7,8-PeCDD	0.00023 UJ	0.0006 UJ	0.00059 UJ			0.00019 UJ	0.00048 UJ	0.00061 UJ
1,2,3,4,7,8-HxCDD	0.00018 J	0.00021 UJ	0.00025 J			0.00009 UJ	0.00049 J	0.00032 J
1,2,3,6,7,8-HxCDD	0.00057 J	0.00168 J	0.00116 J			0.00047 J	0.00175 J	0.00128 J
1,2,3,7,8,9-HxCDD	0.00018 UJ	0.00017 J	0.00034 UJ			0.00015 J	0.00043 J	0.00019 J
1,2,3,4,6,7,8-HpCDD	0.00071 UJ	0.00172 J	0.00168 J			0.00089 UJ	0.00241 J	0.00187 J
OCDD	0.00114 UJ	0.00278 UJ	0.00281 UJ			0.00155 UJ	0.00239 UJ	0.00786 UJ
2,3,7,8-TCDF	0.00022 UJ	0.00015 UJ	0.00032 UJ			0.0002 UJ	0.00008 J	0.00006 J
1,2,3,7,8-PeCDF	0.00033 UJ	0.00026 UJ	0.00028 UJ			0.00023 UJ	0.00008 J	0.00025 UJ
2,3,4,7,8-PeCDF	0.00032 UJ	0.00025 UJ	0.00028 UJ			0.00015 J	0.00031 J	0.00019 UJ
1,2,3,4,7,8-HxCDF	0.00013 UJ	0.00019 UJ	0.00024 UJ			0.00014 UJ	0.00036 UJ	0.00018 UJ
1,2,3,6,7,8-HxCDF	0.00016 J	0.00022 J	0.00014 J			0.00013 J	0.00033 J	0.00024 UJ
2,3,4,6,7,8-HxCDF	0.00012 UJ	0.00013 UJ	0.0001 UJ			0.00011 UJ	0.00026 UJ	0.00011 UJ
1,2,3,7,8,9-HxCDF	0.00015 UJ	0.00012 UJ	0.00028 UJ			0.00002 J	0.00011 UJ	0.00028 UJ
1,2,3,4,6,7,8-HpCDF	0.0003 UJ	0.00076 J	0.0006 UJ			0.00022 UJ	0.00087 J	0.00064 UJ
1,2,3,4,7,8,9-HpCDF	0.00025 UJ	0.00015 UJ	0.00017 UJ			0.00014 UJ	0.00019 UJ	0.00014 UJ
OCDF	0.00008 UJ	0.00028 UJ	0.00027 UJ			0.00009 UJ	0.00023 UJ	0.00054 UJ
Total TCDD	0.07649 J	0.22532 J	0.30691 J			0.00928 J	0.02649 J	0.09259 J
Total PeCDD	0.00023 UJ	0.0006 UJ	0.00069 UJ			0.00019 UJ	0.00048 UJ	0.00061 UJ
Total HxCDD	0.00075 J	0.00185 J	0.00141 J			0.00108 J	0.00312 J	0.00211 J
Total HpCDD	0.00083 UJ	0.00193 UJ	0.00195 UJ			0.00089 UJ	0.00251 UJ	0.00227 UJ
Total TCDF	0.00022 UJ	0.00012 J	0.00023 J			0.0002 UJ	0.00008 J	0.00006 J
Total PeCDF	0.00033 UJ	0.00026 UJ	0.00083 J			0.00015 J	0.00066 J	0.00059 J
Total HxCDF	0.00038 UJ	0.00063 UJ	0.00039 UJ			0.0004 UJ	0.00104 UJ	0.0003 UJ
Total HpCDF	0.00057 UJ	0.00109 UJ	0.00068 UJ			0.00022 UJ	0.00097 UJ	0.00199 UJ
Toxicity Equivalency (Dioxins, Furans, HCX)	0.0766	0.226	0.307			0.00943	0.027	0.0928
PCB Congeners (ug/Kg)								
2-Monochlorobiphenyl (1)								
4-Chlorobiphenyl (3)								
2,2'-Dichlorobiphenyl (4)								
2,3-Dichlorobiphenyl (5)								
2,3'-Dichlorobiphenyl (6)								
2,4-Dichlorobiphenyl (7)								
2,4'-Dichlorobiphenyl (8)								
2,5-Dichlorobiphenyl (9)								
2,6-Dichlorobiphenyl (10)								
3,4-Dichlorobiphenyl (12)								
2,2',3'-Trichlorobiphenyl (16)								
2,2',4-Trichlorobiphenyl (17)								

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2,2',5-Trichlorobiphenyl (18)								
2,2',6-Trichlorobiphenyl (19)								
2,3,3'-Trichlorobiphenyl (20)								
2,3,4'-Trichlorobiphenyl (22)								
2,3,6-Trichlorobiphenyl (24)								
2,3',4-Trichlorobiphenyl (25)								
2,3',5-Trichlorobiphenyl (26)								
2,4',5-Trichlorobiphenyl (31)								
2,4',6-Trichlorobiphenyl (32)								
2,2',3,3'-Tetrachlorobiphenyl (40)								
2,2',3,4'-Tetrachlorobiphenyl (42)								
2,2',3,5-Tetrachlorobiphenyl (43)								
2,2',3,5'-Tetrachlorobiphenyl (44)								
2,2',3,6-Tetrachlorobiphenyl (45)								
2,2',3,6'-Tetrachlorobiphenyl (46)								
2,2',4,5-Tetrachlorobiphenyl (48)								
2,2',4,5'-Tetrachlorobiphenyl (49)								
2,2',4,6-Tetrachlorobiphenyl (50)								
2,3,3',4'-Tetrachlorobiphenyl (56)								
2,3,3',6-Tetrachlorobiphenyl (59)								
2,3,4,4'-Tetrachlorobiphenyl (60)								
2,3,4,5-Tetrachlorobiphenyl (61)								
2,3,4',5-Tetrachlorobiphenyl (63)								
2,3,4',6-Tetrachlorobiphenyl (64)								
2,3',4,4'-Tetrachlorobiphenyl (66)								
3,3',4,4'-Tetrachlorobiphenyl (77)								
3,4,4',5-Tetrachlorobiphenyl (81)								
2,2',3,3',4-Pentachlorobiphenyl (82)								
2,2',3,3',5-Pentachlorobiphenyl (83)								
2,2',3,3',6-Pentachlorobiphenyl (84)								
2,2',3,4,4'-Pentachlorobiphenyl (85)								
2,2',3,4,5-Pentachlorobiphenyl (86)								
2,2',3,4,6-Pentachlorobiphenyl (88)								
2,2',3,4,6'-Pentachlorobiphenyl (89)								
2,2',3,4',5-Pentachlorobiphenyl (90)								
2,2',3,5,5'-Pentachlorobiphenyl (92)								
2,2',3,5,6-Pentachlorobiphenyl (93)								
2,3,3',4,4'-Pentachlorobiphenyl (105)								
2,3,3',4,5-Pentachlorobiphenyl (106)								

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2,3,3',4',5'-Pentachlorobiphenyl (108)								
2,3,3',4',6-Pentachlorobiphenyl (110)								
2,3,4,4',5-Pentachlorobiphenyl (114)								
2,3',4,4',5-Pentachlorobiphenyl (118)								
3,3',4,4',5-Pentachlorobiphenyl (126)								
2,2',3,3',4,4'-Hexachlorobiphenyl (128)								
2,2',3,3',4,5-Hexachlorobiphenyl (129)								
2,2',3,3',4,5'-Hexachlorobiphenyl (130)								
2,2',3,3',4,6-Hexachlorobiphenyl (131)								
2,2',3,3',4,6'-Hexachlorobiphenyl (132)								
2,2',3,3',5,6-Hexachlorobiphenyl (134)								
2,2',3,3',5,6'-Hexachlorobiphenyl (135)								
2,2',3,3',6,6'-Hexachlorobiphenyl (136)								
2,2',3,4,4',5-Hexachlorobiphenyl (137)								
2,2',3,4,5,5'-Hexachlorobiphenyl (141)								
2,2',3,4,5',6-Hexachlorobiphenyl (144)								
2,2',3,4',5,5'-Hexachlorobiphenyl (146)								
2,2',3,4',5,6-Hexachlorobiphenyl (147)								
2,2',4,4',5,5'-Hexachlorobiphenyl (153)								
2,3,3',4,4',5-Hexachlorobiphenyl (156)								
2,3,3',4,4',6-Hexachlorobiphenyl (158)								
2,3',4,4',5,5'-Hexachlorobiphenyl (167)								
3,3',4,4',5,5'-Hexachlorobiphenyl (169)								
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)								
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)								
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)								
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)								
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)								
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)								
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)								
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)								
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)								
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)								
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)								
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)								
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)								
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)								
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)								
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)								

Table A-15
Summary Statistics and Analytical Results for American Eel - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	APC-AE-4004-0000-01-W 6/20/2001	APC-AE-4005-0000-01-W 6/20/2001	APC-AE-4006-0000-01-W 6/20/2001	APC-AE-4006-0000-01-W 6/20/2001 REEXTRACTED	APC-AE-4007-0000-01-W 6/20/2001 DUPLICATE	APC-AE-4007-0000-01-W 6/20/2001	APC-AE-4008-0000-01-W 6/20/2001	APC-AE-4009-0000-01-W 6/20/2001
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)								
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)								
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)								
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)								
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)								
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)								
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (200)								
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)								
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)								
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)								
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl								
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl								
Decachlorobiphenyl (209)								
PCB Congeners, Total								
Toxicity Equivalency (PCB)								
Other (%)								
Lipid_percent	14.3	17.7	13.4		13.4	12.8	17.2	11

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* **106**(12):775-792.

Samples ending with:
W - whole body

Table A-15
Summary Statistics and Analytical Results for American Eel - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	APC-AE-4010-0000-01-W 6/20/2001	APC-DU-062001-0000-B-W 6/20/2001 REPLICATE
Semivolatile Organics (ug/Kg)		
1,1'-Biphenyl	0.55 J	
2-Methylnaphthalene	2.46	
Acenaphthene	4.18	
Acenaphthylene	1.64	
Anthracene	2.09	
Benzo(a)anthracene	1.29 U	
Benzo(a)pyrene	1.29 U	
Benzo(b)fluoranthene	1.29 U	
Benzo(g,h,i)perylene	1.29 U	
Benzo(k)fluoranthene	1.29 U	
Chrysene	1.29 U	
Dibenzo(a,h)anthracene	1.29 U	
Dibenzofuran	1.16 J	
Fluoranthene	7.3	
Fluorene	1.72	
Indeno(1,2,3-cd)pyrene	1.29 U	
Naphthalene	3.32	
Phenanthrene	8.4	
Pyrene	3.53 U	
Total PAH	32.81	
Pesticides/PCBs (ug/Kg)		
4,4'-DDD	11.79	
4,4'-DDE	27.68	
4,4'-DDT	1.29 U	
Aldrin	1.29 U	
alpha-BHC	1.29 U	
alpha-Chlordane	13.14	
Aroclor, Total	1007.84	
Aroclor-1016	16.11 U	
Aroclor-1221	16.11 U	
Aroclor-1232	16.11 U	
Aroclor-1242	16.11 U	
Aroclor-1248	16.11 U	
Aroclor-1254	1007.84	
Aroclor-1260	16.11 U	
Aroclor-1268	16.11 U	
beta-BHC	1.29 U	
delta-BHC	1.29 U	

Table A-15
Summary Statistics and Analytical Results for American Eel - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	APC-AE-4010-0000-01-W 6/20/2001	APC-DU-062001-0000-B-W 6/20/2001 REPLICATE
Dieldrin	12.62	
Endosulfan I	1.29 U	
Endosulfan II	1.29 U	
Endosulfan Sulfate	1.29 U	
Endrin	1.29 U	
Endrin Aldehyde	1.29 UJ	
Endrin Ketone	1.29 U	
gamma-BHC	0.26 J	
gamma-Chlordane	4.68	
Heptachlor	1.29 U	
Heptachlor Epoxide	1.07 J	
Methoxychlor	1.29 U	
Technical Chlordane	227.01	
Toxaphene	32.22 U	
Inorganics (mg/Kg)		
Aluminum	1.16 J	5.61 J
Antimony	0.034 U	0.034 U
Arsenic	0.0464 U	0.0891 U
Barium	0.609 J	0.189 J
Beryllium	0.004 U	0.004 U
Cadmium	0.0871 J	0.07 J
Chromium	0.0281 J	0.259 J
Cobalt	0.104 J	0.0533 J
Copper	0.519 J	0.83 J
Iron	14.3	29.6
Lead	0.535 J	0.206 J
Manganese	5.44 J	2 J
Mercury	0.051	0.134
Mercury (methyl)	0.0621	0.133
Molybdenum	0.32 U	0.32 U
Nickel	0.164 J	0.116 J
Selenium	0.334 J	0.318 J
Silver	0.06 U	0.06 U
Thallium	0.022 U	0.022 U
Vanadium	0.179 U	0.179 U
Zinc	29.4 J	30.3 J
Dioxins/Furans (ug/Kg)		
HCX	0.0495 J	
TCX	R	

Table A-15
Summary Statistics and Analytical Results for American Eel - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	APC-AE-4010-0000-01-W 6/20/2001	APC-DU-062001-0000-B-W 6/20/2001 REPLICATE
2,3,7,8-TCDD	0.09312 J	
1,2,3,7,8-PeCDD	0.00048 UJ	
1,2,3,4,7,8-HxCDD	0.0002 J	
1,2,3,6,7,8-HxCDD	0.00103 J	
1,2,3,7,8,9-HxCDD	0.00015 J	
1,2,3,4,6,7,8-HpCDD	0.00096 J	
OCDD	0.00137 UJ	
2,3,7,8-TCDF	0.00016 UJ	
1,2,3,7,8-PeCDF	0.0001 UJ	
2,3,4,7,8-PeCDF	0.00012 J	
1,2,3,4,7,8-HxCDF	0.00015 UJ	
1,2,3,6,7,8-HxCDF	0.00012 UJ	
2,3,4,6,7,8-HxCDF	0.00007 UJ	
1,2,3,7,8,9-HxCDF	0.0001 UJ	
1,2,3,4,6,7,8-HpCDF	0.00042 J	
1,2,3,4,7,8,9-HpCDF	0.00013 UJ	
OCDF	0.00012 UJ	
Total TCDD	0.09312 J	
Total PeCDD	0.00048 UJ	
Total HxCDD	0.00139 J	
Total HpCDD	0.00096 UJ	
Total TCDF	0.00006 UJ	
Total PeCDF	0.00044 UJ	
Total HxCDF	0.00034 UJ	
Total HpCDF	0.00049 UJ	
Toxicity Equivalency (Dioxins, Furans, HCX)	0.0933	
PCB Congeners (ug/Kg)		
2-Monochlorobiphenyl (1)		
4-Chlorobiphenyl (3)		
2,2'-Dichlorobiphenyl (4)		
2,3-Dichlorobiphenyl (5)		
2,3'-Dichlorobiphenyl (6)		
2,4-Dichlorobiphenyl (7)		
2,4'-Dichlorobiphenyl (8)		
2,5-Dichlorobiphenyl (9)		
2,6-Dichlorobiphenyl (10)		
3,4-Dichlorobiphenyl (12)		
2,2',3'-Trichlorobiphenyl (16)		
2,2',4-Trichlorobiphenyl (17)		

Table A-15
Summary Statistics and Analytical Results for American Eel - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	APC-AE-4010-0000-01-W 6/20/2001	APC-DU-062001-0000-B-W 6/20/2001 REPLICATE
2,2',5-Trichlorobiphenyl (18)		
2,2',6-Trichlorobiphenyl (19)		
2,3,3'-Trichlorobiphenyl (20)		
2,3,4'-Trichlorobiphenyl (22)		
2,3,6-Trichlorobiphenyl (24)		
2,3',4-Trichlorobiphenyl (25)		
2,3',5-Trichlorobiphenyl (26)		
2,4',5-Trichlorobiphenyl (31)		
2,4',6-Trichlorobiphenyl (32)		
2,2',3,3'-Tetrachlorobiphenyl (40)		
2,2',3,4'-Tetrachlorobiphenyl (42)		
2,2',3,5-Tetrachlorobiphenyl (43)		
2,2',3,5'-Tetrachlorobiphenyl (44)		
2,2',3,6-Tetrachlorobiphenyl (45)		
2,2',3,6'-Tetrachlorobiphenyl (46)		
2,2',4,5-Tetrachlorobiphenyl (48)		
2,2',4,5'-Tetrachlorobiphenyl (49)		
2,2',4,6-Tetrachlorobiphenyl (50)		
2,3,3',4'-Tetrachlorobiphenyl (56)		
2,3,3',6-Tetrachlorobiphenyl (59)		
2,3,4,4'-Tetrachlorobiphenyl (60)		
2,3,4,5-Tetrachlorobiphenyl (61)		
2,3,4',5-Tetrachlorobiphenyl (63)		
2,3,4',6-Tetrachlorobiphenyl (64)		
2,3',4,4'-Tetrachlorobiphenyl (66)		
3,3',4,4'-Tetrachlorobiphenyl (77)		
3,4,4',5-Tetrachlorobiphenyl (81)		
2,2',3,3',4-Pentachlorobiphenyl (82)		
2,2',3,3',5-Pentachlorobiphenyl (83)		
2,2',3,3',6-Pentachlorobiphenyl (84)		
2,2',3,4,4'-Pentachlorobiphenyl (85)		
2,2',3,4,5-Pentachlorobiphenyl (86)		
2,2',3,4,6-Pentachlorobiphenyl (88)		
2,2',3,4,6'-Pentachlorobiphenyl (89)		
2,2',3,4',5-Pentachlorobiphenyl (90)		
2,2',3,5,5'-Pentachlorobiphenyl (92)		
2,2',3,5,6-Pentachlorobiphenyl (93)		
2,3,3',4,4'-Pentachlorobiphenyl (105)		
2,3,3',4,5-Pentachlorobiphenyl (106)		

Table A-15
Summary Statistics and Analytical Results for American Eel - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	APC-AE-4010-0000-01-W 6/20/2001	APC-DU-062001-0000-B-W 6/20/2001 REPLICATE
2,3,3',4',5'-Pentachlorobiphenyl (108)		
2,3,3',4',6-Pentachlorobiphenyl (110)		
2,3,4,4',5-Pentachlorobiphenyl (114)		
2,3',4,4',5-Pentachlorobiphenyl (118)		
3,3',4,4',5-Pentachlorobiphenyl (126)		
2,2',3,3',4,4'-Hexachlorobiphenyl (128)		
2,2',3,3',4,5-Hexachlorobiphenyl (129)		
2,2',3,3',4,5'-Hexachlorobiphenyl (130)		
2,2',3,3',4,6-Hexachlorobiphenyl (131)		
2,2',3,3',4,6'-Hexachlorobiphenyl (132)		
2,2',3,3',5,6-Hexachlorobiphenyl (134)		
2,2',3,3',5,6'-Hexachlorobiphenyl (135)		
2,2',3,3',6,6'-Hexachlorobiphenyl (136)		
2,2',3,4,4',5-Hexachlorobiphenyl (137)		
2,2',3,4,5,5'-Hexachlorobiphenyl (141)		
2,2',3,4,5',6-Hexachlorobiphenyl (144)		
2,2',3,4',5,5'-Hexachlorobiphenyl (146)		
2,2',3,4',5,6-Hexachlorobiphenyl (147)		
2,2',4,4',5,5'-Hexachlorobiphenyl (153)		
2,3,3',4,4',5-Hexachlorobiphenyl (156)		
2,3,3',4,4',6-Hexachlorobiphenyl (158)		
2,3',4,4',5,5'-Hexachlorobiphenyl (167)		
3,3',4,4',5,5'-Hexachlorobiphenyl (169)		
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)		
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)		
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)		
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)		
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)		
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)		
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)		
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)		
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)		
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)		
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)		
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)		
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)		
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)		
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)		
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)		

Table A-15
Summary Statistics and Analytical Results for American Eel - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	APC-AE-4010-0000-01-W 6/20/2001	APC-DU-062001-0000-B-W 6/20/2001 REPLICATE
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)		
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)		
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)		
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)		
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)		
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)		
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (200)		
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)		
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)		
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)		
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl		
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl		
Decachlorobiphenyl (209)		
PCB Congeners, Total		
Toxicity Equivalency (PCB)		
Other (%)		
Lipid_percent	10.8	

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* 106(12):775-792.

Samples ending with:
W - whole body

Table A-16
Summary Statistics and Analytical Results for White Sucker and Fall Fish - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	AP-CC-06 4/10/2001	AP-SC-01, AP-SC-02, AP-SC-03 4/10/2001	AP-SC-04, AP-SC-05 4/10/2001
Semivolatile Organics (ug/Kg)										
1,1'-Biphenyl	10	10			0.78	1.42	0.99			
2-Methylnaphthalene	10	10			3.09	5.51	3.83			
Acenaphthene	10	10			2.74	4.9	3.50			
Acenaphthylene	10	10			1.36	3.87	2.15			
Anthracene	10	10			1.54	4.06	2.71			
Benzo(a)anthracene	10	10			0.37	3.01	1.28			
Benzo(a)pyrene	10	10			0.13	2.79	0.95			
Benzo(b)fluoranthene	10	10			0.25	4.01	1.21			
Benzo(g,h,i)perylene	2	10	0.66	0.75	1.15	2.43	0.63			
Benzo(k)fluoranthene	10	10			0.27	3.38	1.06			
Chrysene	10	10			0.72	4.53	1.94			
Dibenzo(a,h)anthracene	10	10			0.13	0.69	0.27			
Dibenzofuran	10	10			1.89	3.37	2.48			
Fluoranthene	10	10			5.17	13.85	8.26			
Fluorene	10	10			2.84	5.6	4.07			
Indeno(1,2,3-cd)pyrene	10	10			0.24	2.67	0.79			
Naphthalene	10	10			2.24	4.09	2.84			
Phenanthrene	10	10			5.69	14.51	9.58			
Pyrene	10	10			1.18	3.89	2.29			
Total PAH	10	10			34.02	73.92	50.54			
Pesticides/PCBs (ug/Kg)										
4,4'-DDD	10	10			6.18	34.98	12.61			
4,4'-DDE	10	10			10.89	53.83	28.69			
4,4'-DDT	10	10			2.31	24.62	6.86			
Aldrin	0	10	0.6	1.23			0.34			
alpha-BHC	0	10	0.6	1.23			0.34			
alpha-Chlordane	10	10			8.37	35.11	16.80			
Aroclor, Total	10	10			444.66	3274.19	1612.71			
Aroclor-1016	0	10	7.52	15.31			4.20			
Aroclor-1221	0	10	7.52	15.31			4.20			
Aroclor-1232	0	10	7.52	15.31			4.20			
Aroclor-1242	0	10	7.52	15.31			4.20			
Aroclor-1248	0	10	7.52	15.31			4.20			
Aroclor-1254	10	10			426.43	3243.44	1583.22			
Aroclor-1260	0	10	7.52	15.31			4.20			
Aroclor-1268	10	10			18.23	52.74	29.49			
beta-BHC	0	10	0.6	1.23			0.34			
delta-BHC	0	10	0.6	1.23			0.34			

Table A-16
Summary Statistics and Analytical Results for White Sucker and Fall Fish - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	AP-CC-06 4/10/2001	AP-SC-01, AP-SC-02, AP-SC-03 4/10/2001	AP-SC-04, AP-SC-05 4/10/2001
Dieldrin	10	10			1.66	9.9	5.37			
Endosulfan I	0	10	0.6	1.23			0.34			
Endosulfan II	0	10	0.6	1.23			0.34			
Endosulfan Sulfate	0	10	0.6	1.23			0.34			
Endrin	0	10	0.6	1.23			0.34			
Endrin Aldehyde	0	10	0.6	1.23			0.34			
Endrin Ketone	0	10	0.6	1.23			0.34			
gamma-BHC	9	10	1.23	1.23	0.07	0.25	0.19			
gamma-Chlordane	10	10			5.1	24.7	8.93			
Heptachlor	0	10	0.6	1.23			0.34			
Heptachlor Epoxide	10	10			0.32	0.83	0.61			
Methoxychlor	0	10	0.6	1.23			0.34			
Technical Chlordane	10	10			99.9	1247.42	346.24			
Toxaphene	0	10	15.05	30.62			8.40			
Inorganics (mg/Kg)										
Aluminum	10	10			1.06	25.8	8.02			
Antimony	0	10	0.034	0.034			0.0170			
Arsenic	0	10	0.0397	0.08			0.0295			
Barium	10	10			0.4	1.45	0.744			
Beryllium	0	10	0.004	0.00509			0.00215			
Cadmium	10	10			0.0156	0.0484	0.0241			
Chromium	8	10	0.139	0.269	0.0669	0.229	0.112			
Cobalt	10	10			0.0663	0.127	0.0889			
Copper	10	10			0.581	2.23	0.872			
Iron	10	10			14.1	46.4	23.8			
Lead	6	10	0.0513	0.135	0.14	0.349	0.158			
Manganese	10	10			3.83	12.3	6.78			
Mercury	10	10			0.0808	0.216	0.136			
Mercury (methyl)	10	10			0.0847	0.225	0.147			
Molybdenum	3	10	0.32	0.32	0.0298	0.0939	0.130			
Nickel	10	10			0.114	0.221	0.147			
Selenium	10	10			0.215	0.349	0.285			
Silver	0	10	0.06	0.06			0.0300			
Thallium	0	10	0.022	0.022			0.0110			
Vanadium	4	10	0.179	0.179	0.071	0.154	0.0966			
Zinc	10	10			14.6	26.3	20.9			
Dioxins/Furans (ug/Kg)										
HCX	9	13	0.0007	0.01987	0.01474	0.08931	0.03643	0.0007 U	0.00075 U	0.00115 U
TCX	0	12	0.00065	0.099			0.02501	0.00065 U	0.00072 U	0.00194 U

Table A-16
Summary Statistics and Analytical Results for White Sucker and Fall Fish - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	AP-CC-06 4/10/2001	AP-SC-01, AP-SC-02, AP-SC-03 4/10/2001	AP-SC-04, AP-SC-05 4/10/2001
2,3,7,8-TCDD	13	13			0.07943	0.80121	0.33299	0.29958	0.29209	0.28497
1,2,3,7,8-PeCDD	3	13	0.00021	0.0008	0.00039	0.0007	0.00033	0.00075 U	0.00079 U	0.00066 U
1,2,3,4,7,8-HxCDD	4	13	0.00013	0.00122	0.00007	0.00028	0.00024	0.00063 UJ	0.00071 UJ	0.00122 UJ
1,2,3,6,7,8-HxCDD	7	13	0.00054	0.00128	0.00014	0.00048	0.00034	0.00067 U	0.0007 U	0.00128 U
1,2,3,7,8,9-HxCDD	0	13	0.00013	0.0012			0.00021	0.00047 U	0.00051 U	0.0012 U
1,2,3,4,6,7,8-HpCDD	3	13	0.00016	0.00127	0.00089	0.00488	0.00075	0.00089	0.00088 U	0.00488
OCDD	0	13	0.00073	0.00333			0.00082	0.00254 U	0.00103 U	0.00332 U
2,3,7,8-TCDF	11	13	0.00044	0.00048	0.00054	0.00272	0.00152	0.00044 UJ	0.00131 J	0.00244 J
1,2,3,7,8-PeCDF	4	13	0.00023	0.00129	0.00012	0.00021	0.00025	0.00056 U	0.0006 U	0.00129 U
2,3,4,7,8-PeCDF	5	13	0.00018	0.00838	0.00021	0.0005	0.00059	0.00061 U	0.00066 U	0.00838 U
1,2,3,4,7,8-HxCDF	0	13	0.00011	0.00148			0.00026	0.00138 U	0.00146 U	0.00148 U
1,2,3,6,7,8-HxCDF	0	13	0.00006	0.00148			0.00026	0.00139 U	0.00147 U	0.00148 U
2,3,4,6,7,8-HxCDF	3	13	0.00016	0.00129	0.00002	0.00008	0.00019	0.00037 U	0.0004 U	0.00129 U
1,2,3,7,8,9-HxCDF	0	13	0.0001	0.00115			0.00022	0.0007 UJ	0.00075 UJ	0.00115 UJ
1,2,3,4,6,7,8-HpCDF	0	13	0.0001	0.00146			0.00025	0.00074 U	0.00081 U	0.00124 U
1,2,3,4,7,8,9-HpCDF	0	13	0.00014	0.00158			0.00028	0.00081 UJ	0.00088 UJ	0.00132 U
OCDF	1	13	0.0001	0.0008	0.00308	0.00308	0.00041	0.00067 U	0.00069 U	0.00308
Total TCDD	13	13			0.07943	0.80121	0.33299	0.29958 J	0.29209 J	0.28497 J
Total PeCDD	1	13	0.00021	0.0016	0.0007	0.0007	0.00036	0.00151 UJ	0.0016 UJ	0.00066 UJ
Total HxCDD	2	13	0.0002	0.00117	0.00014	0.00473	0.00064	0.00088 UJ	0.00095 UJ	0.00473 J
Total HpCDD	2	13	0.00016	0.00127	0.00141	0.00804	0.00102	0.00141 J	0.00087 UJ	0.00804 J
Total TCDF	11	13	0.00048	0.00082	0.00064	0.00244	0.00132	0.00082 UJ	0.00131 J	0.00244 J
Total PeCDF	10	13	0.00049	0.00702	0.0003	0.00224	0.00109	0.00042 J	0.00121 UJ	0.00702 UJ
Total HxCDF	2	13	0.00037	0.00856	0.00014	0.0003	0.00060	0.0003 J	0.00081 UJ	0.00856 UJ
Total HpCDF	3	13	0.0001	0.00152	0.00034	0.00145	0.00037	0.00073 J	0.00034 J	0.00145 J
Toxicity Equivalency (Dioxins, Furans, HCX)	13	13			0.0798	0.802	0.333	0.3	0.292	0.285
PCB Congeners (ug/Kg)										
2-Monochlorobiphenyl (1)	2	3	0.03194	0.03194	0.05019	0.09519	0.05378			
4-Chlorobiphenyl (3)	0	3	0.0146	0.02093			0.00845			
2,2'-Dichlorobiphenyl (4)	3	3			0.20592	0.30534	0.24311			
2,3-Dichlorobiphenyl (5)	2	3	0.00993	0.00993	0.01065	0.0135	0.00971			
2,3'-Dichlorobiphenyl (6)	3	3			0.1639	0.30499	0.21889			
2,4-Dichlorobiphenyl (7)	3	3			0.02269	0.0505	0.03480			
2,4'-Dichlorobiphenyl (8)	3	3			0.73317	1.26453	0.95498			
2,5-Dichlorobiphenyl (9)	3	3			0.05429	0.11595	0.07925			
2,6-Dichlorobiphenyl (10)	3	3			0.01327	0.02999	0.01926			
3,4-Dichlorobiphenyl (12)	3	3			0.01	0.0111	0.01055			
2,2',3'-Trichlorobiphenyl (16)	3	3			0.51934	0.91054	0.71649			
2,2',4-Trichlorobiphenyl (17)	3	3			1.02463	1.3163	1.16918			

Table A-16
Summary Statistics and Analytical Results for White Sucker and Fall Fish - Allendale

Data Evaluation Report
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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	AP-CC-06 4/10/2001	AP-SC-01, AP-SC-02, AP-SC-03 4/10/2001	AP-SC-04, AP-SC-05 4/10/2001
2,2',5-Trichlorobiphenyl (18)	3	3			1.33064	1.66914	1.54447			
2,2',6-Trichlorobiphenyl (19)	3	3			0.16578	0.26643	0.21623			
2,3,3'-Trichlorobiphenyl (20)	3	3			8.42256	10.98232	9.44373			
2,3,4'-Trichlorobiphenyl (22)	3	3			1.56512	1.90573	1.70516			
2,3,6-Trichlorobiphenyl (24)	3	3			0.18964	0.25232	0.21333			
2,3',4-Trichlorobiphenyl (25)	3	3			0.13621	0.16971	0.14828			
2,3',5-Trichlorobiphenyl (26)	3	3			0.5954	0.7398	0.67321			
2,4',5-Trichlorobiphenyl (31)	3	3			3.26415	3.59507	3.43852			
2,4',6-Trichlorobiphenyl (32)	3	3			0.60048	1.07513	0.81614			
2,2',3,3'-Tetrachlorobiphenyl (40)	3	3			3.00303	4.77789	4.12480			
2,2',3,4'-Tetrachlorobiphenyl (42)	3	3			1.99019	3.89529	3.02134			
2,2',3,5-Tetrachlorobiphenyl (43)	3	3			4.50357	11.11485	7.93113			
2,2',3,5'-Tetrachlorobiphenyl (44)	3	3			5.81669	12.62706	8.65001			
2,2',3,6-Tetrachlorobiphenyl (45)	3	3			0.84224	1.3327	1.13369			
2,2',3,6'-Tetrachlorobiphenyl (46)	3	3			0.25885	0.41525	0.35059			
2,2',4,5-Tetrachlorobiphenyl (48)	3	3			1.11699	2.01385	1.52387			
2,2',4,5'-Tetrachlorobiphenyl (49)	3	3			6.03226	11.93142	9.20030			
2,2',4,6-Tetrachlorobiphenyl (50)	3	3			0.75486	1.34684	0.99234			
2,3,3',4'-Tetrachlorobiphenyl (56)	3	3			1.95151	3.34801	2.66171			
2,3,3',6-Tetrachlorobiphenyl (59)	3	3			0.66747	10.41663	4.04030			
2,3,4,4'-Tetrachlorobiphenyl (60)	3	3			1.11938	2.52264	1.79643			
2,3,4,5-Tetrachlorobiphenyl (61)	3	3			12.19988	22.02172	17.23369			
2,3,4',5-Tetrachlorobiphenyl (63)	3	3			0.29882	0.70151	0.47240			
2,3,4',6-Tetrachlorobiphenyl (64)	3	3			3.49232	6.92708	5.29564			
2,3',4,4'-Tetrachlorobiphenyl (66)	3	3			10.35864	18.24741	14.18310			
3,3',4,4'-Tetrachlorobiphenyl (77)	6	6			0.10004	0.7196	0.35246	0.13646	0.63985	0.7196
3,4,4',5-Tetrachlorobiphenyl (81)	1	6	0.09914	0.23923	0.643	0.643	0.18351	0.23923 U	0.23914 U	0.23921 U
2,2',3,3',4-Pentachlorobiphenyl (82)	3	3			2.65321	4.839	3.95365			
2,2',3,3',5-Pentachlorobiphenyl (83)	3	3			18.78558	36.20996	25.94581			
2,2',3,3',6-Pentachlorobiphenyl (84)	3	3			3.84393	8.16888	6.11028			
2,2',3,4,4'-Pentachlorobiphenyl (85)	3	3			4.97585	8.56608	6.97353			
2,2',3,4,5-Pentachlorobiphenyl (86)	3	3			22.2261	37.11396	30.36814			
2,2',3,4,6-Pentachlorobiphenyl (88)	3	3			3.74088	7.99262	5.99042			
2,2',3,4,6'-Pentachlorobiphenyl (89)	2	3	0.09934	0.09934	0.14995	0.27197	0.15720			
2,2',3,4',5-Pentachlorobiphenyl (90)	3	3			24.65643	46.02189	36.44186			
2,2',3,5,5'-Pentachlorobiphenyl (92)	3	3			3.46561	8.24751	6.34271			
2,2',3,5,6-Pentachlorobiphenyl (93)	3	3			15.31725	40.6324	27.11413			
2,3,3',4,4'-Pentachlorobiphenyl (105)	6	6			9.89039	19.06357	13.61365	11.20119	18.55609	19.06357
2,3,3',4,5-Pentachlorobiphenyl (106)	3	3			4.172	5.85288	4.79318			

Table A-16
Summary Statistics and Analytical Results for White Sucker and Fall Fish - Allendale

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North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	AP-CC-06 4/10/2001	AP-SC-01, AP-SC-02, AP-SC-03 4/10/2001	AP-SC-04, AP-SC-05 4/10/2001
2,3,3',4',5'-Pentachlorobiphenyl (108)	3	3			1.12482	1.54362	1.33755			
2,3,3',4',6-Pentachlorobiphenyl (110)	3	3			36.07698	76.2935	52.23814			
2,3,4,4',5-Pentachlorobiphenyl (114)	6	6			0.59239	1.12987	0.85726	0.67122	0.97675	1.12987
2,3',4,4',5-Pentachlorobiphenyl (118)	6	6			41.97209	85.63549	59.18938	49.01091 J	83.79915 J	85.63549 J
2,3',4,4',5'-Pentachlorobiphenyl (123)	3	3			0.78466	1.41265	1.17771	0.78466	1.41265	1.33581
3,3',4,4',5-Pentachlorobiphenyl (126)	6	6			0.08331	0.76594	0.36260	0.35315	0.76594	0.75767
2,2',3,3',4,4'-Hexachlorobiphenyl (128)	3	3			10.10296	12.67886	11.75553			
2,2',3,3',4,5-Hexachlorobiphenyl (129)	3	3			66.1754	108.14568	87.61493			
2,2',3,3',4,5'-Hexachlorobiphenyl (130)	3	3			3.06563	5.12676	3.93065			
2,2',3,3',4,6-Hexachlorobiphenyl (131)	2	3	0.09934	0.09934	0.67898	0.95916	0.56260			
2,2',3,3',4,6'-Hexachlorobiphenyl (132)	3	3			13.6052	23.49928	16.94694			
2,2',3,3',5,6-Hexachlorobiphenyl (134)	3	3			0.98638	3.43574	1.89693			
2,2',3,3',5,6'-Hexachlorobiphenyl (135)	3	3			8.07048	20.88405	12.64180			
2,2',3,3',6,6'-Hexachlorobiphenyl (136)	3	3			1.8061	3.98017	2.59867			
2,2',3,4,4',5-Hexachlorobiphenyl (137)	3	3			7.25844	11.488	8.76486			
2,2',3,4,5,5'-Hexachlorobiphenyl (141)	3	3			4.36236	5.96641	5.39798			
2,2',3,4,5',6-Hexachlorobiphenyl (144)	3	3			1.02537	1.22366	1.12401			
2,2',3,4',5,5'-Hexachlorobiphenyl (146)	3	3			6.81686	7.63278	7.24980			
2,2',3,4',5,6-Hexachlorobiphenyl (147)	3	3			31.3895	107.77742	61.16152			
2,2',4,4',5,5'-Hexachlorobiphenyl (153)	3	3			34.5166	46.69464	40.25410			
2,3,3',4,4',5-Hexachlorobiphenyl (156)	6	6			2.75391	5.81774	4.87089	2.75391 J	4.973 J	4.88117 J
2,3,3',4,4',5'-Hexachlorobiphenyl (157)	3	3			2.75391	4.973	4.20269	2.75391 J	4.973 J	4.88117 J
2,3,3',4,4',6-Hexachlorobiphenyl (158)	3	3			6.23661	6.49345	6.34452			
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	6	6			2.0818	3.97455	2.79334	2.15209	3.97455	3.87024
3,3',4,4',5,5'-Hexachlorobiphenyl (169)	2	6	0.09934	0.23923	0.06501	0.07635	0.09164	0.23923 U	0.23914 U	0.23921 U
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	3	3			6.24752	8.59226	7.69761			
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)	3	3			1.77074	2.65482	2.33861			
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)	3	3			1.18213	1.33246	1.24077			
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)	3	3			2.79992	7.61061	4.72033			
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)	3	3			0.15677	0.17642	0.16905			
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)	3	3			0.3438	0.60453	0.47939			
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)	3	3			2.45517	5.31597	3.62101			
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)	3	3			1.03538	1.68073	1.32503			
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)	3	3			10.07784	11.82032	11.02877			
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)	0	3	0.19828	0.19867			0.09926			
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)	3	3			2.19836	2.67618	2.47722			
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)	3	3			0.01465	0.01525	0.01491			
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)	3	3			0.38996	0.4954	0.43380			
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	3	3			8.99726	23.16662	16.05190			

Table A-16
Summary Statistics and Analytical Results for White Sucker and Fall Fish - Allendale

Data Evaluation Report
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North Providence, RI

PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	AP-CC-06 4/10/2001	AP-SC-01, AP-SC-02, AP-SC-03 4/10/2001	AP-SC-04, AP-SC-05 4/10/2001
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	6	6			0.16243	0.30668	0.23036	0.16243 J	0.30668	0.29643
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)	3	3			1.524	2.12202	1.85509			
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	3	3			0.20144	0.2382	0.22047			
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	3	3			1.47303	2.08656	1.76465			
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	3	3			0.42654	0.75748	0.63704			
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)	3	3			0.93248	1.07068	0.97928			
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)	2	3	0.19858	0.19858	0.05949	0.07347	0.07742			
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)	3	3			7.66826	14.4197	11.89843			
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (200)	3	3			0.12975	0.25176	0.18122			
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)	3	3			0.3285	0.4419	0.40158			
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)	3	3			2.63972	3.52699	3.21107			
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	3	3			0.08999	0.12493	0.11321			
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	3	3			6.88279	10.33108	8.79097			
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	3	3			0.49141	0.67806	0.59264			
Decachlorobiphenyl (209)	3	3			3.55472	5.37883	4.43590			
PCB Congeners, Total	3	3			622.46203	878.96671	732.88815			
Toxicity Equivalency (PCB)	6	6			0.0182	0.0926	0.0479	0.0446	0.0926	0.092
Other (%)										
Lipid_percent	13	13			1.3	8.72	5.07	1.83	1.62	1.3

NOTES:
SQL - Sample Quantitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* 106(12):775-792.

Samples ending with:
W - whole body

Table A-16
Summary Statistics and Analytical Results for White Sucker and Fall Fish - Allendale

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PARAMETER	APC-DU-062001-0000-A-W 6/20/2001	APC-WS-4001-0000-01-W 6/20/2001	APC-WS-4002-0000-01-W 6/20/2001	APC-WS-4003-0000-01-W 6/20/2001	APC-WS-4004-0000-01-W 6/20/2001	APC-WS-4005-0000-01-W 6/20/2001	APC-WS-4006-0000-01-W 6/20/2001	APC-WS-4007-0000-01-W 6/20/2001
Semivolatile Organics (ug/Kg)								
1,1'-Biphenyl		0.8	0.95	0.81	1.1	1.04	1.42	0.94
2-Methylnaphthalene		3.49	3.64	3.11	3.86	3.68	5.51	3.78
Acenaphthene		3.17	2.74	2.84	3.61	3.28	4.9	4.29
Acenaphthylene		1.61	1.36	1.97	1.45	2.62	3.87	2.26
Anthracene		2.18	1.54	2.41	2.6	2.92	4.06	3.64
Benzo(a)anthracene		0.79	0.37 J	0.72	0.69	1.24	1.53	2.31
Benzo(a)pyrene		0.69	0.13 J	0.28 J	0.54 J	0.63 J	0.63 J	2.13
Benzo(b)fluoranthene		0.95	0.25 J	0.41 J	0.68	0.71	0.91	2.45
Benzo(g,h,i)perylene		0.71 U	0.67 U	0.67 U	0.68 U	0.66 U	0.75 U	1.15
Benzo(k)fluoranthene		0.69	0.27 J	0.42 J	0.53 J	0.71	0.85	2.09
Chrysene		1.76	0.72	1.06	1.47	1.4	1.74	3.47
Dibenzo(a,h)anthracene		0.2 J	0.13 J	0.14 J	0.14 J	0.33 J	0.32 J	0.33 J
Dibenzofuran		2.44	1.89	1.96	2.67	2.12	3.37	3.12
Fluoranthene		8	5.32	5.81	7.63	6.08	9.4	13.85
Fluorene		4.3	3.2	3.09	4.64	3.53	5.14	5.6
Indeno(1,2,3-cd)pyrene		0.59 J	0.24 J	0.37 J	0.47 J	0.56 J	0.67	1.25
Naphthalene		2.46	2.52	2.24	2.64	2.83	4.09	2.86
Phenanthrene		10.02	7.32	6.06	14.51	6.41	10.84	14.51
Pyrene		3.05	1.43	2.22	1.87	1.18	2.34	3.89
Total PAH		47.17	34.02	35.92	51.08	41.27	61.59	73.92
Pesticides/PCBs (ug/Kg)								
4,4'-DDD		14.79 J	8.01 J	6.18 J	6.21 J	14.92 J	34.98 J	9.01 J
4,4'-DDE		16.97 J	10.89 J	11.21 J	13.5 J	28.51 J	46.69 J	44.11 J
4,4'-DDT		24.62 J	3.01 J	2.31 J	4.71 J	4.04 J	6.4 J	7.38 J
Aldrin		0.62 UJ	0.61 UJ	1.23 UJ	0.62 UJ	0.6 UJ	0.6 UJ	0.61 UJ
alpha-BHC		0.62 UJ	0.61 UJ	1.23 UJ	0.62 UJ	0.61 UJ	0.6 UJ	0.61 UJ
alpha-Chlordane		15.34 J	21.2 J	9.15 J	11.13 J	21.87 J	35.11 J	11.64 J
Aroclor, Total		1282.23 J	766.58 J	670.26 J	444.66 J	3274.19 J	3269.06 J	1657.23 J
Aroclor-1016		7.68 UJ	7.61 UJ	15.31 UJ	7.68 UJ	7.55 UJ	7.52 UJ	7.61 UJ
Aroclor-1221		7.68 UJ	7.61 UJ	15.31 UJ	7.68 UJ	7.55 UJ	7.52 UJ	7.61 UJ
Aroclor-1232		7.68 UJ	7.61 UJ	15.31 UJ	7.68 UJ	7.55 UJ	7.52 UJ	7.61 UJ
Aroclor-1242		7.68 UJ	7.61 UJ	15.31 UJ	7.68 UJ	7.55 UJ	7.52 UJ	7.61 UJ
Aroclor-1248		7.68 UJ	7.61 UJ	15.31 UJ	7.68 UJ	7.55 UJ	7.52 UJ	7.61 UJ
Aroclor-1254		1257.52 J	748.08 J	648 J	426.43 J	3243.44 J	3224.16 J	1604.49 J
Aroclor-1260		7.68 UJ	7.61 UJ	15.31 UJ	7.68 UJ	7.55 UJ	7.52 UJ	7.61 UJ
Aroclor-1268		24.71 J	18.5 J	22.26 J	18.23 J	30.74 J	44.9 J	52.74 J
beta-BHC		0.62 UJ	0.61 UJ	1.23 UJ	0.62 UJ	0.61 UJ	0.6 UJ	0.61 UJ
delta-BHC		0.62 UJ	0.61 UJ	1.23 UJ	0.62 UJ	0.61 UJ	0.6 UJ	0.61 UJ

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Dieldrin		4.93 J	3.87 J	2.58 J	3.04 J	9.9 J	8.6 J	5.63 J
Endosulfan I		0.62 UJ	0.61 UJ	1.23 UJ	0.62 UJ	0.61 UJ	0.6 UJ	0.61 UJ
Endosulfan II		0.62 UJ	0.61 UJ	1.23 UJ	0.61 UJ	0.6 UJ	0.6 UJ	0.61 UJ
Endosulfan Sulfate		0.62 UJ	0.61 UJ	1.23 UJ	0.62 UJ	0.6 UJ	0.6 UJ	0.61 UJ
Endrin		0.62 UJ	0.61 UJ	1.23 UJ	0.62 UJ	0.61 UJ	0.6 UJ	0.61 UJ
Endrin Aldehyde		0.62 UJ	0.61 UJ	1.23 UJ	0.62 UJ	0.61 UJ	0.6 UJ	0.61 UJ
Endrin Ketone		0.62 UJ	0.61 UJ	1.23 UJ	0.62 UJ	0.61 UJ	0.6 UJ	0.61 UJ
gamma-BHC		0.2 J	0.16 J	1.23 UJ	0.1 J	0.07 J	0.14 J	0.25 J
gamma-Chlordane		5.39 J	14.04 J	5.1 J	5.99 J	7.13 J	24.7 J	5.37 J
Heptachlor		0.62 UJ	0.61 UJ	1.23 UJ	0.62 UJ	0.6 UJ	0.6 UJ	0.61 UJ
Heptachlor Epoxide		0.57 J	0.83 J	0.32 J	0.68 J	0.48 J	0.8 J	0.54 J
Methoxychlor		0.62 UJ	0.61 UJ	1.23 UJ	0.62 UJ	0.61 UJ	0.6 UJ	0.61 UJ
Technical Chlordane		116.33 J	155.6 J	99.9 J	155.05 J	354.82 J	1247.42 J	354.51 J
Toxaphene		15.36 UJ	15.23 UJ	30.62 UJ	15.35 UJ	15.1 UJ	15.05 UJ	15.22 UJ
Inorganics (mg/Kg)								
Aluminum	25.4 J	4.56 J	1.06 J	3.53 J	7.4 J	3.22 J	9.73 J	8.31 J
Antimony	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U
Arsenic	0.0792 U	0.0507 U	0.0584 U	0.0507 U	0.0649 U	0.0589 U	0.07 U	0.08 U
Barium	1.12 J	0.945 J	0.4 J	0.433 J	0.466 J	1 J	0.713	0.578 J
Beryllium	0.0057 U	0.00461 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.00494 U
Cadmium	0.04 J	0.0273 J	0.0285 J	0.016 J	0.0156 J	0.0158 J	0.0167 J	0.0337 J
Chromium	0.214 J	0.11 J	0.0812 J	0.0669 J	0.111 J	0.11 J	0.0989 J	0.106 J
Cobalt	0.0858 J	0.115 J	0.0663 J	0.0817 J	0.0842 J	0.127 J	0.0816 J	0.0717 J
Copper	0.89 J	0.724 J	0.581 J	0.696 J	0.785 J	0.718 J	0.606 J	0.689 J
Iron	41.5	19.8	14.1	20.7	21	23.2	21.8	21.1
Lead	0.507 J	0.215 J	0.0513 U	0.105 U	0.119 U	0.249 J	0.26 J	0.135 U
Manganese	8.61 J	8.86 J	4.48 J	4.25 J	4.31 J	7.79 J	6.44 J	3.83 J
Mercury	0.2	0.113	0.184	0.0808	0.0935	0.0923	0.118	0.216
Mercury (methyl)	0.199	0.127	0.186	0.0847	0.169	0.115	0.125	0.225
Molybdenum	0.0769 J	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
Nickel	0.169 J	0.161 J	0.126 J	0.126 J	0.125 J	0.205 J	0.135 J	0.114 J
Selenium	0.337 J	0.226 J	0.281 J	0.288 J	0.324 J	0.296 J	0.297 J	0.292 J
Silver	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Thallium	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U
Vanadium	0.0971 J	0.0869 J	0.179 U	0.179 U	0.071 J	0.179 U	0.179 U	0.179 U
Zinc	19.7 J	23.6 J	14.6 J	16.3 J	20.2 J	26.3 J	18.6 J	21.9 J
Dioxins/Furans (ug/Kg)								
HCX		0.02349	0.01474 J	0.08931 J	0.06395 J	0.04549 J	0.06004 J	0.05164 J
TCX		0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.099 UJ

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2,3,7,8-TCDD		0.32604 J	0.07943 J	0.80121 J	0.07989 J	0.51083 J	0.68022 J	0.10112 J
1,2,3,7,8-PeCDD		0.00029 UJ	0.00032 UJ	0.00052 J	0.00021 UJ	0.00039 J	0.0007 J	0.00063 UJ
1,2,3,4,7,8-HxCDD		0.0001 J	0.00018 J	0.00023 UJ	0.00007 J	0.00013 UJ	0.00028 J	0.00055 UJ
1,2,3,6,7,8-HxCDD		0.00024 J	0.0003 J	0.00037 J	0.00025 J	0.00019 J	0.00048 J	0.00059 UJ
1,2,3,7,8,9-HxCDD		0.00021 UJ	0.00019 UJ	0.00022 UJ	0.00017 UJ	0.00013 UJ	0.00026 UJ	0.00054 UJ
1,2,3,4,6,7,8-HpCDD		0.00047 UJ	0.00044 UJ	0.0006 UJ	0.00051 UJ	0.00039 UJ	0.00089 J	0.00127 UJ
OCDD		0.00118 UJ	0.00113 UJ	0.00113 UJ	0.00124 UJ	0.00099 UJ	0.00177 UJ	0.00138 UJ
2,3,7,8-TCDF		0.00174 J#	0.00167 J#	0.00222 J#	0.0025 J#	0.00168 J#	0.00272 J#	0.00054 J
1,2,3,7,8-PeCDF		0.00012 J	0.00018 J	0.00021 J	0.0003 UJ	0.00031 UJ	0.0002 J	0.00061 UJ
2,3,4,7,8-PeCDF		0.00018 UJ	0.00026 J	0.00045 J	0.00031 UJ	0.0003 J	0.0005 J	0.00057 UJ
1,2,3,4,7,8-HxCDF		0.00012 UJ	0.00014 UJ	0.00017 UJ	0.00015 UJ	0.00011 UJ	0.00017 UJ	0.00061 UJ
1,2,3,6,7,8-HxCDF		0.00006 UJ	0.00009 UJ	0.00015 UJ	0.00015 UJ	0.00007 UJ	0.00017 UJ	0.00062 UJ
2,3,4,6,7,8-HxCDF		0.00028 UJ	0.00008 J	0.00016 UJ	0.00016 UJ	0.00016 UJ	0.00008 J	0.00064 UJ
1,2,3,7,8,9-HxCDF		0.00031 UJ	0.0001 UJ	0.00018 UJ	0.00016 UJ	0.00017 UJ	0.0002 UJ	0.0007 UJ
1,2,3,4,6,7,8-HpCDF		0.00017 UJ	0.00017 UJ	0.00022 UJ	0.00018 UJ	0.00013 UJ	0.00028 UJ	0.00084 UJ
1,2,3,4,7,8,9-HpCDF		0.00023 UJ	0.0002 UJ	0.00019 UJ	0.00018 UJ	0.00014 UJ	0.00024 UJ	0.00091 UJ
OCDF		0.00021 UJ	0.00025 UJ	0.00016 UJ	0.0001 UJ	0.00012 UJ	0.00019 UJ	0.00036 UJ
Total TCDD		0.32604 J	0.07943 J	0.80121 J	0.07989 J	0.51083 J	0.68022 J	0.10112 J
Total PeCDD		0.00029 UJ	0.00032 UJ	0.00052 UJ	0.00021 UJ	0.00039 UJ	0.0007 J	0.00063 UJ
Total HxCDD		0.00051 UJ	0.00051 UJ	0.00037 UJ	0.00032 UJ	0.00051 UJ	0.00117 UJ	0.0002 UJ
Total HpCDD		0.00047 UJ	0.00044 UJ	0.00077 UJ	0.00073 UJ	0.00053 UJ	0.00089 UJ	0.00127 UJ
Total TCDF		0.00177 J	0.00178 J	0.0023 J	0.00079 J	0.00142 J	0.00219 J	0.00064 J
Total PeCDF		0.00161 J	0.0011 J	0.00224 J	0.0008 J	0.00068 J	0.00185 J	0.0003 J
Total HxCDF		0.0006 UJ	0.00057 UJ	0.0007 UJ	0.00049 UJ	0.00056 UJ	0.00078 UJ	0.00064 UJ
Total HpCDF		0.0003 UJ	0.00032 UJ	0.00026 UJ	0.0006 UJ	0.00013 UJ	0.00033 UJ	0.00088 UJ
Toxicity Equivalency (Dioxins, Furans, HCX)		0.326	0.0798	0.802	0.0802	0.512	0.682	0.101
PCB Congeners (ug/Kg)								
2-Monochlorobiphenyl (1)								0.09519 J
4-Chlorobiphenyl (3)								0.02093 UJ
2,2'-Dichlorobiphenyl (4)								0.21808 J
2,3-Dichlorobiphenyl (5)								0.0135 J
2,3'-Dichlorobiphenyl (6)								0.18777 J
2,4-Dichlorobiphenyl (7)								0.0312 J
2,4'-Dichlorobiphenyl (8)								0.86724 J
2,5-Dichlorobiphenyl (9)								0.06752 J
2,6-Dichlorobiphenyl (10)								0.01451 J
3,4-Dichlorobiphenyl (12)								0.01056 J
2,2',3'-Trichlorobiphenyl (16)								0.71958 J
2,2',4-Trichlorobiphenyl (17)								1.02463 J

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2,2',5-Trichlorobiphenyl (18)								1.33064 J
2,2',6-Trichlorobiphenyl (19)								0.16578 J
2,3,3'-Trichlorobiphenyl (20)								8.92632 J
2,3,4'-Trichlorobiphenyl (22)								1.64463 J
2,3,6-Trichlorobiphenyl (24)								0.18964 J
2,3',4-Trichlorobiphenyl (25)								0.16971 J
2,3',5-Trichlorobiphenyl (26)								0.7398 J
2,4',5-Trichlorobiphenyl (31)								3.59507 J
2,4',6-Trichlorobiphenyl (32)								0.77281 J
2,2',3,3'-Tetrachlorobiphenyl (40)								3.00303 J
2,2',3,4'-Tetrachlorobiphenyl (42)								1.99019 J
2,2',3,5-Tetrachlorobiphenyl (43)								4.50357 J
2,2',3,5'-Tetrachlorobiphenyl (44)								7.70628 J
2,2',3,6-Tetrachlorobiphenyl (45)								0.84224 J
2,2',3,6'-Tetrachlorobiphenyl (46)								0.25885 J
2,2',4,5-Tetrachlorobiphenyl (48)								1.11699 J
2,2',4,5'-Tetrachlorobiphenyl (49)								6.03226 J
2,2',4,6-Tetrachlorobiphenyl (50)								0.75486 J
2,3,3',4'-Tetrachlorobiphenyl (56)								1.95151 J
2,3,3',6-Tetrachlorobiphenyl (59)								0.66747 J
2,3,4,4'-Tetrachlorobiphenyl (60)								1.11938 J
2,3,4,5-Tetrachlorobiphenyl (61)								12.19988 J
2,3,4',5-Tetrachlorobiphenyl (63)								0.29882 J
2,3,4',6-Tetrachlorobiphenyl (64)								3.49232 J
2,3',4,4'-Tetrachlorobiphenyl (66)								10.35864 J
3,3',4,4'-Tetrachlorobiphenyl (77)								0.10004 J
3,4,4',5-Tetrachlorobiphenyl (81)								0.643 J
2,2',3,3',4-Pentachlorobiphenyl (82)								2.65321 J
2,2',3,3',5-Pentachlorobiphenyl (83)								18.78558 J
2,2',3,3',6-Pentachlorobiphenyl (84)								3.84393 J
2,2',3,4,4'-Pentachlorobiphenyl (85)								7.37865 J
2,2',3,4,5-Pentachlorobiphenyl (86)								22.2261 J
2,2',3,4,6-Pentachlorobiphenyl (88)								3.74088 J
2,2',3,4,6'-Pentachlorobiphenyl (89)								0.14995 J
2,2',3,4',5-Pentachlorobiphenyl (90)								24.65643 J
2,2',3,5,5'-Pentachlorobiphenyl (92)								3.46561 J
2,2',3,5,6-Pentachlorobiphenyl (93)								15.31725 J
2,3,3',4,4'-Pentachlorobiphenyl (105)								9.89039 J
2,3,3',4,5-Pentachlorobiphenyl (106)								4.172 J

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2,3,3',4',5'-Pentachlorobiphenyl (108)								1.12482 J
2,3,3',4',6-Pentachlorobiphenyl (110)								44.34394 J
2,3,4,4',5-Pentachlorobiphenyl (114)								0.59239 J
2,3',4,4',5-Pentachlorobiphenyl (118)								41.97209 J
2,3',4,4',5'-Pentachlorobiphenyl (123)								
3,3',4,4',5-Pentachlorobiphenyl (126)								0.09068 J
2,2',3,3',4,4'-Hexachlorobiphenyl (128)								12.48476 J
2,2',3,3',4,5-Hexachlorobiphenyl (129)								88.52372 J
2,2',3,3',4,5'-Hexachlorobiphenyl (130)								3.06563 J
2,2',3,3',4,6-Hexachlorobiphenyl (131)								0.67898 J
2,2',3,3',4,6'-Hexachlorobiphenyl (132)								13.6052 J
2,2',3,3',5,6-Hexachlorobiphenyl (134)								0.98638 J
2,2',3,3',5,6'-Hexachlorobiphenyl (135)								8.07048 J
2,2',3,3',6,6'-Hexachlorobiphenyl (136)								1.8061 J
2,2',3,4,4',5-Hexachlorobiphenyl (137)								7.54814 J
2,2',3,4,5,5'-Hexachlorobiphenyl (141)								4.36236 J
2,2',3,4,5',6-Hexachlorobiphenyl (144)								1.02537 J
2,2',3,4',5,5'-Hexachlorobiphenyl (146)								6.81686 J
2,2',3,4',5,6-Hexachlorobiphenyl (147)								44.31764 J
2,2',4,4',5,5'-Hexachlorobiphenyl (153)								39.55106 J
2,3,3',4,4',5-Hexachlorobiphenyl (156)								5.62522 J
2,3,3',4,4',5'-Hexachlorobiphenyl (157)								
2,3,3',4,4',6-Hexachlorobiphenyl (158)								6.49345 J
2,3',4,4',5,5'-Hexachlorobiphenyl (167)								2.42847 J
3,3',4,4',5,5'-Hexachlorobiphenyl (169)								0.07635 J
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)								8.59226 J
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)								2.59026 J
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)								1.33246 J
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)								3.75047 J
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)								0.17395 J
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)								0.48984 J
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)								3.09189 J
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)								1.25897 J
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)								11.82032 J
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)								0.19858 UJ
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)								2.55713 J
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)								0.01525 J
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)								0.41604 J
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)								15.99182 J

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2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)								0.22207 J
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)								2.12202 J
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)								0.2382 J
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)								2.08656 J
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)								0.75748 J
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)								1.07068 J
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)								0.19858 UJ
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)								13.60734 J
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (200)								0.16215 J
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)								0.4419 J
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)								3.46649 J
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)								0.12493 J
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl								10.33108 J
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl								0.67806 J
Decachlorobiphenyl (209)								5.37883 J
PCB Congeners, Total								622.46203 J
Toxicity Equivalency (PCB)								0.0182
Other (%)								
Lipid_percent		5.42	6.75	5.24	5.2	5.91	8.72	6

NOTES:
SQL - Sample Quantitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* **106**(12):775-792.

Samples ending with:
W - whole body

Table A-16
Summary Statistics and Analytical Results for White Sucker and Fall Fish - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	APC-WS-4008-0000-01-W 6/20/2001 DUPLICATE	APC-WS-4008-0000-01-W 6/20/2001	APC-WS-4009-0000-01-W 6/20/2001	APC-WS-4010-0000-01-W 6/20/2001
Semivolatile Organics (ug/Kg)				
1,1'-Biphenyl		0.87	1.14	0.78
2-Methylnaphthalene		3.84	4.31	3.09
Acenaphthene		3.3	4.11	2.78
Acenaphthylene		2.19	1.74	2.44
Anthracene		2.57	2.45	2.71
Benzo(a)anthracene		3.01	1.11	0.99
Benzo(a)pyrene		2.79	0.89	0.82
Benzo(b)fluoranthene		4.01	1.02	0.74
Benzo(g,h,i)perylene		2.43	0.67 U	0.67 U
Benzo(k)fluoranthene		3.38	1	0.61 J
Chrysene		4.53	2.03	1.23
Dibenzo(a,h)anthracene		0.69	0.21 J	0.16 J
Dibenzofuran		2.08	3.13	1.97
Fluoranthene		12.68	8.65	5.17
Fluorene		3.8	4.6	2.84
Indeno(1,2,3-cd)pyrene		2.67	0.62 J	0.49 J
Naphthalene		2.85	3.39	2.47
Phenanthrene		10.65	9.78	5.69
Pyrene		3.62 J	1.76	1.51
Total PAH		71.96	51.97	36.48
Pesticides/PCBs (ug/Kg)				
4,4'-DDD		12.15 J	6.56 J	13.31 J
4,4'-DDE		38.61 J	22.53 J	53.83 J
4,4'-DDT		7.76 J	5.3 J	3.1 J
Aldrin		0.62 UJ	0.61 UJ	0.61 UJ
alpha-BHC		0.62 UJ	0.61 UJ	0.61 UJ
alpha-Chlordane		13.69 J	8.37 J	20.54 J
Aroclor, Total		1546.97 J	1043.86 J	2172.1 J
Aroclor-1016		7.71 UJ	7.64 UJ	7.64 UJ
Aroclor-1221		7.71 UJ	7.64 UJ	7.64 UJ
Aroclor-1232		7.71 UJ	7.64 UJ	7.64 UJ
Aroclor-1242		7.71 UJ	7.64 UJ	7.64 UJ
Aroclor-1248		7.71 UJ	7.64 UJ	7.64 UJ
Aroclor-1254		1509.72 J	1024.04 J	2146.35 J
Aroclor-1260		7.71 UJ	7.64 UJ	7.64 UJ
Aroclor-1268		37.25 J	19.82 J	25.76 J
beta-BHC		0.62 UJ	0.61 UJ	0.61 UJ
delta-BHC		0.62 UJ	0.61 UJ	0.61 UJ

Table A-18
Summary Statistics and Analytical Results for White Sucker and Fall Fish - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	APC-WS-4008-0000-01-W 6/20/2001 DUPLICATE	APC-WS-4008-0000-01-W 6/20/2001	APC-WS-4009-0000-01-W 6/20/2001	APC-WS-4010-0000-01-W 6/20/2001
Dieldrin		5.88 J	7.58 J	1.66 J
Endosulfan I		0.62 UJ	0.61 UJ	0.61 UJ
Endosulfan II		0.62 UJ	0.61 UJ	0.61 UJ
Endosulfan Sulfate		0.62 UJ	0.61 UJ	0.61 UJ
Endrin		0.62 UJ	0.61 UJ	0.61 UJ
Endrin Aldehyde		0.62 UJ	0.61 UJ	0.61 UJ
Endrin Ketone		0.62 UJ	0.61 UJ	0.61 UJ
gamma-BHC		0.16 J	0.08 J	0.16 J
gamma-Chlordane		7 J	5.44 J	9.16 J
Heptachlor		0.62 UJ	0.61 UJ	0.61 UJ
Heptachlor Epoxide		0.6 J	0.75 J	0.53 J
Methoxychlor		0.62 UJ	0.61 UJ	0.61 UJ
Technical Chlordane		425.78 J	274.49 J	278.5 J
Toxaphene		15.43 UJ	15.28 UJ	15.29 UJ
Inorganics (mg/Kg)				
Aluminum		25.8 J	9.68	6.93
Antimony		0.034 U	0.034 U	0.034 U
Arsenic		0.0749 U	0.0397 U	0.042 U
Barium		1.45 J	0.835	0.619
Beryllium		0.00509 U	0.004 U	0.00443 U
Cadmium		0.0484 J	0.0178 J	0.0209 J
Chromium		0.229 J	0.269 U	0.139 U
Cobalt		0.107 J	0.0793 J	0.0753 J
Copper		0.981	0.71	2.23
Iron		46.4	24	26
Lead		0.349	0.14 J	0.158 J
Manganese		12.3 J	9.09	6.48
Mercury		0.205	0.106	0.149
Mercury (methyl)		0.219	0.0938	0.129
Molybdenum		0.0939 J	0.0524 J	0.0298 J
Nickel		0.221 J	0.141 J	0.114 J
Selenium		0.349 J	0.215 J	0.281 J
Silver		0.06 U	0.06 U	0.06 U
Thallium		0.022 U	0.022 U	0.022 U
Vanadium		0.154 J	0.179 U	0.117 J
Zinc		20.6	22.1	24.3
Dioxins/Furans (ug/Kg)				
HCX		0.0492 J	0.06445 J	0.01987 UJ
TCX		0.099 UJ	0.099 UJ	R

Table A-16
Summary Statistics and Analytical Results for White Sucker and Fall Fish - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	APC-WS-4008-0000-01-W 6/20/2001 DUPLICATE	APC-WS-4008-0000-01-W 6/20/2001	APC-WS-4009-0000-01-W 6/20/2001	APC-WS-4010-0000-01-W 6/20/2001
2,3,7,8-TCDD		0.40982 J	0.22011 J	0.24351 J
1,2,3,7,8-PeCDD		0.00067 UJ	0.0008 UJ	0.00023 UJ
1,2,3,4,7,8-HxCDD		0.00092 UJ	0.00053 UJ	0.00018 UJ
1,2,3,6,7,8-HxCDD		0.00099 UJ	0.00054 UJ	0.00014 J
1,2,3,7,8,9-HxCDD		0.0009 UJ	0.0005 UJ	0.00018 UJ
1,2,3,4,6,7,8-HpCDD		0.00083 UJ	0.00057 UJ	0.00016 UJ
OCDD		0.00333 UJ	0.00144 UJ	0.00073 UJ
2,3,7,8-TCDF		0.00048 UJ	0.00142 J#	0.00107 J#
1,2,3,7,8-PeCDF		0.00052 UJ	0.00075 UJ	0.00023 UJ
2,3,4,7,8-PeCDF		0.00047 UJ	0.00071 UJ	0.00021 J
1,2,3,4,7,8-HxCDF		0.00054 UJ	0.00042 UJ	0.00011 UJ
1,2,3,6,7,8-HxCDF		0.00054 UJ	0.00042 UJ	0.00011 UJ
2,3,4,6,7,8-HxCDF		0.00058 UJ	0.00044 UJ	0.00002 J
1,2,3,7,8,9-HxCDF		0.00065 UJ	0.0005 UJ	0.00014 UJ
1,2,3,4,6,7,8-HpCDF		0.00148 UJ	0.00022 UJ	0.0001 UJ
1,2,3,4,7,8,9-HpCDF		0.00158 UJ	0.00056 UJ	0.00015 UJ
OCDF		0.00069 UJ	0.0008 UJ	0.00011 UJ
Total TCDD		0.40982 J	0.22011 J	0.24351 J
Total PeCDD		0.00067 UJ	0.0008 UJ	0.00028 UJ
Total HxCDD		0.00093 UJ	0.00052 UJ	0.00014 J
Total HpCDD		0.00083 UJ	0.00057 UJ	0.00016 UJ
Total TCDF		0.00048 UJ	0.001 J	0.00084 J
Total PeCDF		0.00049 UJ	0.00047 J	0.0004 J
Total HxCDF		0.00057 UJ	0.00037 UJ	0.00014 J
Total HpCDF		0.00152 UJ	0.00022 UJ	0.0001 UJ
Toxicity Equivalency (Dioxins, Furans, HCX)		0.41	0.22	0.244
PCB Congeners (ug/Kg)				
2-Monochlorobiphenyl (1)		0.03194 UJ	0.05019 J	
4-Chlorobiphenyl (3)		0.01514 UJ	0.0146 UJ	
2,2'-Dichlorobiphenyl (4)		0.20592 J	0.30534 J	
2,3-Dichlorobiphenyl (5)		0.01065 J	0.00993 UJ	
2,3'-Dichlorobiphenyl (6)		0.1639 J	0.30499 J	
2,4-Dichlorobiphenyl (7)		0.02269 J	0.0505 J	
2,4'-Dichlorobiphenyl (8)		0.73317 J	1.26453 J	
2,5-Dichlorobiphenyl (9)		0.05429 J	0.11595 J	
2,6-Dichlorobiphenyl (10)		0.01327 J	0.02999 J	
3,4-Dichlorobiphenyl (12)		0.0111 J	0.01 J	
2,2',3'-Trichlorobiphenyl (16)		0.91054 J	0.51934 J	
2,2',4-Trichlorobiphenyl (17)		1.3163 J	1.16661 J	

Table A-16
Summary Statistics and Analytical Results for White Sucker and Fall Fish - Allendale

Data Evaluation Report
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PARAMETER	APC-WS-4008-0000-01-W 6/20/2001 DUPLICATE	APC-WS-4008-0000-01-W 6/20/2001	APC-WS-4009-0000-01-W 6/20/2001	APC-WS-4010-0000-01-W 6/20/2001
2,2',5-Trichlorobiphenyl (18)		1.63362 J	1.66914 J	
2,2',6-Trichlorobiphenyl (19)		0.21648 J	0.26643 J	
2,3,3'-Trichlorobiphenyl (20)		10.98232 J	8.42256 J	
2,3,4'-Trichlorobiphenyl (22)		1.90573 J	1.56512 J	
2,3,6-Trichlorobiphenyl (24)		0.25232 J	0.19802 J	
2,3',4-Trichlorobiphenyl (25)		0.13621 J	0.13892 J	
2,3',5-Trichlorobiphenyl (26)		0.68444 J	0.5954 J	
2,4',5-Trichlorobiphenyl (31)		3.28415 J	3.45633 J	
2,4',6-Trichlorobiphenyl (32)		1.07513 J	0.60048 J	
2,2',3,3'-Tetrachlorobiphenyl (40)		4.59348 J	4.77789 J	
2,2',3,4'-Tetrachlorobiphenyl (42)		3.17854 J	3.89529 J	
2,2',3,5-Tetrachlorobiphenyl (43)		8.17497 J	11.11485 J	
2,2',3,5'-Tetrachlorobiphenyl (44)		12.62706 J	5.61669 J	
2,2',3,6-Tetrachlorobiphenyl (45)		1.3327 J	1.22612 J	
2,2',3,6'-Tetrachlorobiphenyl (46)		0.41525 J	0.37767 J	
2,2',4,5-Tetrachlorobiphenyl (48)		1.44076 J	2.01385 J	
2,2',4,5'-Tetrachlorobiphenyl (49)		9.63722 J	11.93142 J	
2,2',4,6-Tetrachlorobiphenyl (50)		1.34684 J	0.87532 J	
2,3,3',4'-Tetrachlorobiphenyl (56)		3.34801 J	2.6856 J	
2,3,3',6-Tetrachlorobiphenyl (59)		1.0368 J	10.41663 J	
2,3,4,4'-Tetrachlorobiphenyl (60)		1.74726 J	2.52264 J	
2,3,4,5-Tetrachlorobiphenyl (61)		17.47948 J	22.02172 J	
2,3,4',5-Tetrachlorobiphenyl (63)		0.41686 J	0.70151 J	
2,3,4',6-Tetrachlorobiphenyl (64)		5.46751 J	6.92708 J	
2,3',4,4'-Tetrachlorobiphenyl (66)		13.94324 J	18.24741 J	
3,3',4,4'-Tetrachlorobiphenyl (77)		0.18153 J	0.33726 J	
3,4,4',5-Tetrachlorobiphenyl (81)		0.09914 UJ	0.09934 UJ	
2,2',3,3',4-Pentachlorobiphenyl (82)		4.36874 J	4.839 J	
2,2',3,3',5-Pentachlorobiphenyl (83)		22.8419 J	36.20996 J	
2,2',3,3',6-Pentachlorobiphenyl (84)		8.16888 J	6.31802 J	
2,2',3,4,4'-Pentachlorobiphenyl (85)		8.56608 J	4.97585 J	
2,2',3,4,5-Pentachlorobiphenyl (86)		31.76436 J	37.11396 J	
2,2',3,4,6-Pentachlorobiphenyl (88)		7.99262 J	6.23776 J	
2,2',3,4,6'-Pentachlorobiphenyl (89)		0.27197 J	0.09934 UJ	
2,2',3,4',5-Pentachlorobiphenyl (90)		38.54726 J	46.02189 J	
2,2',3,5,5'-Pentachlorobiphenyl (92)		7.315 J	8.24751 J	
2,2',3,5,6-Pentachlorobiphenyl (93)		40.6324 J	25.39275 J	
2,3,3',4,4'-Pentachlorobiphenyl (105)		10.661 J	12.30964 J	
2,3,3',4,5-Pentachlorobiphenyl (106)		4.35465 J	5.85288 J	

Table A-18
Summary Statistics and Analytical Results for White Sucker and Fall Fish - Allendale

Data Evaluation Report
Centredale Manor Restoration Project Superfund Site
North Providence, RI

PARAMETER	APC-WS-4008-0000-01-W 6/20/2001 DUPLICATE	APC-WS-4008-0000-01-W 6/20/2001	APC-WS-4009-0000-01-W 6/20/2001	APC-WS-4010-0000-01-W 6/20/2001
2,3,3',4',5'-Pentachlorobiphenyl (108)		1.34422 J	1.54362 J	
2,3,3',4',6-Pentachlorobiphenyl (110)		76.2935 J	36.07698 J	
2,3,4,4',5-Pentachlorobiphenyl (114)		0.74167 J	1.03166 J	
2,3',4,4',5-Pentachlorobiphenyl (118)		43.09462 J	51.62399 J	
2,3',4,4',5'-Pentachlorobiphenyl (123)				
3,3',4,4',5-Pentachlorobiphenyl (126)		0.12482 J	0.08331 J	
2,2',3,3',4,4'-Hexachlorobiphenyl (128)		12.67886 J	10.10296 J	
2,2',3,3',4,5-Hexachlorobiphenyl (129)		108.14568 J	66.1754 J	
2,2',3,3',4,5'-Hexachlorobiphenyl (130)		5.12676 J	3.59957 J	
2,2',3,3',4,6-Hexachlorobiphenyl (131)		0.95916 J	0.09934 UJ	
2,2',3,3',4,6'-Hexachlorobiphenyl (132)		23.49928 J	13.73634 J	
2,2',3,3',5,6-Hexachlorobiphenyl (134)		3.43574 J	1.26868 J	
2,2',3,3',5,6'-Hexachlorobiphenyl (135)		20.86405 J	8.97087 J	
2,2',3,3',6,6'-Hexachlorobiphenyl (136)		3.98017 J	2.00973 J	
2,2',3,4,4',5-Hexachlorobiphenyl (137)		11.488 J	7.25844 J	
2,2',3,4,5,5'-Hexachlorobiphenyl (141)		5.86518 J	5.96641 J	
2,2',3,4,5',6-Hexachlorobiphenyl (144)		1.22366 J	1.12299 J	
2,2',3,4',5,5'-Hexachlorobiphenyl (146)		7.63278 J	7.29976 J	
2,2',3,4',5,6-Hexachlorobiphenyl (147)		107.77742 J	31.3895 J	
2,2',4,4',5,5'-Hexachlorobiphenyl (153)		34.5166 J	46.69464 J	
2,3,3',4,4',5-Hexachlorobiphenyl (156)		5.17428 J	5.81774 J	
2,3,3',4,4',5'-Hexachlorobiphenyl (157)				
2,3,3',4,4',6-Hexachlorobiphenyl (158)		6.30349 J	6.23661 J	
2,3',4,4',5,5'-Hexachlorobiphenyl (167)		2.0818 J	2.25287 J	
3,3',4,4',5,5'-Hexachlorobiphenyl (169)		0.06501 J	0.09934 UJ	
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)		8.25304 J	6.24752 J	
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)		2.65482 J	1.77074 J	
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)		1.18213 J	1.20771 J	
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)		7.61061 J	2.79992 J	
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)		0.15677 J	0.17642 J	
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)		0.60453 J	0.3438 J	
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)		5.31597 J	2.45517 J	
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)		1.68073 J	1.03538 J	
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)		10.07784 J	11.18814 J	
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)		0.19828 UJ	0.19867 UJ	
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)		2.19836 J	2.67618 J	
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)		0.01465 J	0.01483 J	
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)		0.4954 J	0.38996 J	
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)		23.16662 J	8.99726 J	

Table A-16
Summary Statistics and Analytical Results for White Sucker and Fall Fish - Allendale

Data Evaluation Report
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North Providence, RI

PARAMETER	APC-WS-4008-0000-01-W 6/20/2001 DUPLICATE	APC-WS-4008-0000-01-W 6/20/2001	APC-WS-4009-0000-01-W 6/20/2001	APC-WS-4010-0000-01-W 6/20/2001
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)		0.20853 J	0.18604 J	
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)		1.91926 J	1.524 J	
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)		0.20144 J	0.22177 J	
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)		1.73437 J	1.47303 J	
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)		0.72711 J	0.42654 J	
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)		0.93467 J	0.93248 J	
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)		0.05949 J	0.07347 J	
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)		14.4197 J	7.66826 J	
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (200)		0.25176 J	0.12975 J	
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)		0.3285 J	0.43434 J	
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)		2.63972 J	3.52699 J	
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)		0.12472 J	0.08999 J	
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl		9.15905 J	6.88279 J	
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl		0.49141 J	0.60845 J	
Decachlorobiphenyl (209)		4.37416 J	3.55472 J	
PCB Congeners, Total		878.96671 J	697.23571 J	
Toxicity Equivalency (PCB)		0.0215	0.0182	
Other (%)				
Lipid_percent	NA	5.36	6.82	5.74

NOTES:
SQL - Sample Quantitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* **106**(12):775-792.

Samples ending with:
W - whole body

Table A-17
Summary Statistics and Analytical Results for American Eel - Lyman Mill

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Centredale Manor Restoration Project Superfund Site
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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	LPX-AE-4001-0000-01-W 6/21/2001	LPX-AE-4002-0000-01-W 6/21/2001	LPX-AE-4003-0000-01-W 6/21/2001
Semivolatile Organics (ug/Kg)										
1,1'-Biphenyl	10	10			0.6	1.28	0.84	0.6 J	0.79 J	0.82 J
2-Methylnaphthalene	10	10			2.81	5.34	3.92	2.81	3.7	3.1
Acenaphthene	10	10			4.86	8.2	6.89	4.86	8.2	7.82
Acenaphthylene	10	10			1.08	2.94	1.93	1.51	1.39	1.08 J
Anthracene	10	10			1.78	3.79	2.67	2.3	2.52	2.69
Benzo(a)anthracene	1	10	1.26	1.7	3.45	3.45	0.95	1.28 U	1.32 U	1.26 U
Benzo(a)pyrene	1	10	1.26	1.32	3.82	3.82	0.96	1.28 U	1.32 U	1.26 U
Benzo(b)fluoranthene	1	10	1.26	2.01	5.77	5.77	1.19	1.28 U	1.32 U	1.26 U
Benzo(g,h,i)perylene	0	10	1.26	1.32			0.64	1.28 U	1.32 U	1.26 U
Benzo(k)fluoranthene	1	10	1.26	2.02	5.11	5.11	1.13	1.28 U	1.32 U	1.26 U
Chrysene	1	10	1.26	3.23	7.38	7.38	1.46	1.28 U	1.69 U	1.26 U
Dibenzo(a,h)anthracene	2	10	1.26	1.32	0.61	0.75	0.65	1.28 U	1.32 U	1.26 U
Dibenzofuran	10	10			1.32	2.31	1.63	1.38	2.17	2.31
Fluoranthene	10	10			9.55	23.09	13.68	9.64	21.46	14.3
Fluorene	10	10			2.5	5.11	3.37	2.92	5.02	5.11
Indeno(1,2,3-cd)pyrene	1	10	1.26	1.32	3.38	3.38	0.92	1.28 U	1.32 U	1.26 U
Naphthalene	10	10			4.01	6.66	5.53	4.01	5.34	4.71
Phenanthrene	10	10			10.27	27.17	15.54	11.99	27.17	25.32
Pyrene	3	10	3.23	5.02	5.96	11.65	3.85	3.23 U	5.96	4.48 U
Total PAH	10	10			42.03	110.9	61.41	42.03	83.74	67.26
Pesticides/PCBs (ug/Kg)										
4,4'-DDD	10	10			12.41	20.72	14.69	16.06 J	12.41	14.74
4,4'-DDE	10	10			27.78	78.91	44.51	53.84	27.78	36.27
4,4'-DDT	6	10	1.27	1.32	2.37	5.66	2.38	1.28 U	1.32 U	1.27 U
Aldrin	0	10	1.27	1.32			0.65	1.28 UJ	1.32 U	1.27 U
alpha-BHC	0	10	1.27	1.32			0.65	1.28 UJ	1.32 U	1.27 U
alpha-Chlordane	10	10			14.07	42.72	20.07	18.58	18.11	42.72
Aroclor, Total	10	10			306.63	1177.73	703.16	1004.31	381.95	306.63
Aroclor-1016	0	10	15.81	16.44			8.06	15.95 U	16.44 U	15.81 U
Aroclor-1221	0	10	15.81	16.44			8.06	15.95 U	16.44 U	15.81 U
Aroclor-1232	0	10	15.81	16.44			8.06	15.95 U	16.44 U	15.81 U
Aroclor-1242	0	10	15.81	16.44			8.06	15.95 U	16.44 U	15.81 U
Aroclor-1248	0	10	15.81	16.44			8.06	15.95 U	16.44 U	15.81 U
Aroclor-1254	10	10			306.63	1177.73	703.16	1004.31	381.95	306.63
Aroclor-1260	0	10	15.81	16.44			8.06	15.95 U	16.44 U	15.81 U
Aroclor-1268	0	10	15.81	16.44			8.06	15.95 U	16.44 U	15.81 U
beta-BHC	9	10	1.28	1.28	0.61	2.55	1.25	1.28 UJ	1.6	0.82 J
delta-BHC	0	10	1.27	1.32			0.65	1.28 UJ	1.32 U	1.27 U
Dieldrin	10	10			6.62	11.15	7.89	6.76 J	7.89	8.37

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	LPX-AE-4001-0000-01-W 6/21/2001	LPX-AE-4002-0000-01-W 6/21/2001	LPX-AE-4003-0000-01-W 6/21/2001
Endosulfan I	0	10	1.27	1.32			0.65	1.28 UJ	1.32 U	1.27 U
Endosulfan II	0	10	1.27	1.32			0.65	1.28 UJ	1.32 U	1.27 U
Endosulfan Sulfate	0	10	1.27	1.32			0.65	1.28 U	1.32 U	1.27 U
Endrin	0	10	1.27	1.32			0.65	1.28 UJ	1.32 U	1.27 U
Endrin Aldehyde	0	10	1.27	1.32			0.65	1.28 UJ	1.32 UJ	1.27 UJ
Endrin Ketone	0	10	1.27	1.32			0.65	1.28 UJ	1.32 U	1.27 U
gamma-BHC	9	10	1.29	1.29	0.51	1.4	1.07	0.51 J	1.18 J	0.85 J
gamma-Chlordane	10	10			6.12	16.05	8.59	6.56 J	8.12	16.05
Heptachlor	0	10	1.27	1.32			0.65	1.28 UJ	1.32 U	1.27 U
Heptachlor Epoxide	10	10			1.53	5.59	2.27	1.53 J	3.14	5.59
Methoxychlor	0	10	1.27	1.32			0.65	1.28 UJ	1.32 U	1.27 U
Technical Chlordane	10	10			293.95	765.77	447.22	293.95	473.89	765.77
Toxaphene	0	10	31.62	32.89			16.12	31.9 U	32.89 U	31.62 U
Inorganics (mg/Kg)										
Aluminum	10	10			1.86	41.6	9.48	3.5	1.86	2.43
Antimony	1	10	0.034	0.034	0.00643	0.00643	0.0159	0.034 U	0.034 U	0.034 U
Arsenic	0	10	0.034	0.0731			0.0240	0.0577 U	0.043 U	0.0376 U
Barium	10	10			0.2	0.781	0.353	0.279	0.247	0.234
Beryllium	0	10	0.004	0.00525			0.00211	0.004 U	0.004 U	0.004 U
Cadmium	10	10			0.011	0.0425	0.0262	0.0117 J	0.0408 J	0.0311 J
Chromium	2	10	0.269	0.269	0.0468	0.187	0.131	0.269 U	0.269 U	0.0468 J
Cobalt	10	10			0.0427	0.0688	0.0539	0.0523 J	0.048 J	0.0504 J
Copper	10	10			0.532	0.793	0.659	0.632	0.61	0.719
Iron	10	10			18.7	53.2	29.7	24.8	28	19.9
Lead	10	10			0.11	0.473	0.266	0.174 J	0.249 J	0.204 J
Manganese	10	10			1.69	7.65	3.50	3.99	1.95	1.69
Mercury	6	10	0.0202	0.0646	0.0297	0.0756	0.0349	0.0443	0.0462	0.0297
Mercury (methyl)	10	10			0.0164	0.0673	0.0367	0.0443	0.0408	0.0319
Molybdenum	2	10	0.32	0.32	0.0135	0.019	0.131	0.32 U	0.32 U	0.32 U
Nickel	10	10			0.0653	0.124	0.0906	0.0864 J	0.0834 J	0.0749 J
Selenium	9	10	0.448	0.448	0.273	0.432	0.341	0.326 J	0.344 J	0.432 J
Silver	3	10	0.06	0.06	0.000324	0.0238	0.0247	0.06 U	0.0238 J	0.0132 J
Thallium	4	10	0.022	0.022	0.00444	0.00815	0.00886	0.022 U	0.022 U	0.022 U
Vanadium	2	10	0.179	0.179	0.0681	0.108	0.0892	0.108 J	0.179 U	0.179 U
Zinc	10	10			18.2	29.3	23.9	29.3	23.9	25.5
Dioxins/Furans (ug/Kg)										
HCX	10	10			0.02418	0.10774	0.05712	0.10774 J	0.02418 J	0.03929 J
TCX	0	0						R	R	R
2,3,7,8-TCDD	10	10			0.02515	0.24673	0.14015	0.13352 J	0.05374 J	0.02515 J
1,2,3,7,8-PeCDD	1	10	0.00065	0.00146	0.00087	0.00087	0.00054	0.00103 UJ	0.00138 UJ	0.00069 UJ

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1,2,3,4,7,8-HxCDD	9	10	0.00025	0.00025	0.00041	0.00093	0.00061	0.00025 UJ	0.00093 J	0.00041 J
1,2,3,6,7,8-HxCDD	10	10			0.00179	0.00432	0.00302	0.00262 J	0.00432 J	0.00179 J
1,2,3,7,8,9-HxCDD	8	10	0.00019	0.00039	0.00022	0.00047	0.00029	0.00037 J	0.00019 UJ	0.00039 UJ
1,2,3,4,6,7,8-HpCDD	8	10	0.00181	0.00214	0.00209	0.00486	0.00284	0.00214 UJ	0.00486 J	0.00181 UJ
OCDD	0	10	0.0023	0.00886			0.00194	0.00248 UJ	0.00505 UJ	0.00293 UJ
2,3,7,8-TCDF	1	10	0.00013	0.00036	0.00006	0.00006	0.00011	0.00033 UJ	0.00034 UJ	0.00036 UJ
1,2,3,7,8-PeCDF	0	10	0.00012	0.00051			0.00014	0.00044 UJ	0.00032 UJ	0.00051 UJ
2,3,4,7,8-PeCDF	4	10	0.00016	0.00052	0.00016	0.00025	0.00018	0.00042 UJ	0.00031 UJ	0.00052 UJ
1,2,3,4,7,8-HxCDF	0	10	0.00007	0.00033			0.00010	0.00025 UJ	0.00018 UJ	0.00021 UJ
1,2,3,6,7,8-HxCDF	6	10	0.00009	0.00024	0.00018	0.00032	0.00019	0.00024 UJ	0.00017 UJ	0.00032 J
2,3,4,6,7,8-HxCDF	0	10	0.00012	0.00033			0.00009	0.00026 UJ	0.00018 UJ	0.00033 UJ
1,2,3,7,8,9-HxCDF	0	10	0.00008	0.00035			0.00009	0.00027 UJ	0.00018 UJ	0.00035 UJ
1,2,3,4,6,7,8-HpCDF	4	10	0.00049	0.00113	0.00076	0.0016	0.00060	0.0005 UJ	0.00113 UJ	0.00051 UJ
1,2,3,4,7,8,9-HpCDF	0	10	0.00006	0.00052			0.00011	0.00034 UJ	0.00052 UJ	0.00032 UJ
OCDF	0	10	0.00023	0.00146			0.00024	0.00037 UJ	0.00038 UJ	0.0004 UJ
Total TCDD	10	10			0.02515	0.24673	0.14015	0.13352 J	0.05374 J	0.02515 J
Total PeCDD	0	10	0.00065	0.00155			0.00051	0.00103 UJ	0.00155 UJ	0.00069 UJ
Total HxCDD	10	10			0.00219	0.0062	0.00397	0.00299 J	0.00524 J	0.00219 J
Total HpCDD	3	10	0.002	0.00498	0.00372	0.00426	0.00221	0.00232 UJ	0.00498 UJ	0.002 UJ
Total TCDF	6	10	0.00014	0.00034	0.00001	0.00023	0.00008	0.00006 J	0.00034 UJ	0.00001 J
Total PeCDF	5	10	0.00016	0.00051	0.00016	0.00133	0.00035	0.00043 UJ	0.00031 UJ	0.00051 UJ
Total HxCDF	0	10	0.00012	0.00095			0.00023	0.00036 UJ	0.00018 UJ	0.00053 UJ
Total HpCDF	2	10	0.00083	0.00202	0.00103	0.00263	0.00091	0.00171 UJ	0.00129 UJ	0.00202 UJ
Toxicity Equivalency (Dioxins, Furans, HCX)	10	10			0.0254	0.248	0.141	0.134	0.0543	0.0254
PCB Congeners (ug/Kg)										
2-Monochlorobiphenyl (1)	0	3	0.00871	0.02056			0.00709	0.01329 UJ	0.02056 UJ	0.00871 UJ
4-Chlorobiphenyl (3)	0	3	0.01322	0.01585			0.00714	0.01376 UJ	0.01585 UJ	0.01322 UJ
2,2'-Dichlorobiphenyl (4)	0	3	0.02283	0.0449			0.01793	0.0449 UJ	0.03982 UJ	0.02283 UJ
2,3-Dichlorobiphenyl (5)	0	3	0.00412	0.00995			0.00400	0.00412 UJ	0.00995 UJ	0.00994 UJ
2,3'-Dichlorobiphenyl (6)	1	3	0.01139	0.01912	0.02189	0.02189	0.01238	0.01912 UJ	0.02189 J	0.01139 UJ
2,4-Dichlorobiphenyl (7)	0	3	0.00409	0.00995			0.00374	0.00839 UJ	0.00995 UJ	0.00409 UJ
2,4'-Dichlorobiphenyl (8)	0	3	0.05579	0.08393			0.03688	0.08393 UJ	0.08157 UJ	0.05579 UJ
2,5-Dichlorobiphenyl (9)	0	3	0.00409	0.00995			0.00387	0.00916 UJ	0.00995 UJ	0.00409 UJ
2,6-Dichlorobiphenyl (10)	1	3	0.00994	0.00995	0.0021	0.0021	0.00402	0.0021 J	0.00995 UJ	0.00994 UJ
3,4-Dichlorobiphenyl (12)	1	3	0.01486	0.01648	0.02846	0.02846	0.01471	0.01648 UJ	0.02846 J	0.01486 UJ
2,2',3'-Trichlorobiphenyl (16)	1	3	0.04138	0.05502	0.07763	0.07763	0.04194	0.07763 J	0.05502 UJ	0.04138 UJ
2,2',4-Trichlorobiphenyl (17)	1	3	0.03881	0.05691	0.07162	0.07162	0.03983	0.07162 J	0.05691 UJ	0.03881 UJ
2,2',5-Trichlorobiphenyl (18)	2	3	0.08424	0.08424	0.16352	0.2553	0.15365	0.2553 J	0.16352 J	0.08424 UJ
2,2',6-Trichlorobiphenyl (19)	3	3			0.01198	0.03037	0.02182	0.03037 J	0.0231 J	0.01198 J
2,3,3'-Trichlorobiphenyl (20)	3	3			1.7214	5.1426	3.34709	5.1426 J	3.17728 J	1.7214 J

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2,3,4'-Trichlorobiphenyl (22)	3	3			0.13628	0.28248	0.18848	0.28248 J	0.14669 J	0.13628 J
2,3,6-Trichlorobiphenyl (24)	2	3	0.0091	0.0091	0.01794	0.02904	0.01718	0.02904 J	0.01794 J	0.0091 UJ
2,3',4-Trichlorobiphenyl (25)	2	3	0.01993	0.01993	0.02142	0.03856	0.02332	0.03856 J	0.02142 J	0.01993 UJ
2,3',5-Trichlorobiphenyl (26)	3	3			0.15456	0.48324	0.31765	0.48324 J	0.31514 J	0.15456 J
2,4',5-Trichlorobiphenyl (31)	3	3			0.63207	1.85299	1.23161	1.85299 J	1.20976 J	0.63207 J
2,4',6-Trichlorobiphenyl (32)	3	3			0.064	0.1743	0.10778	0.1743 J	0.08503 J	0.064 J
2,2',3,3'-Tetrachlorobiphenyl (40)	3	3			0.08688	0.46152	0.22635	0.46152 J	0.13065 J	0.08688 J
2,2',3,4'-Tetrachlorobiphenyl (42)	3	3			0.31472	2.19151	1.07720	2.19151 J	0.72536 J	0.31472 J
2,2',3,5-Tetrachlorobiphenyl (43)	3	3			21.21426	94.94631	48.87256	94.94631 J	30.45711 J	21.21426 J
2,2',3,5'-Tetrachlorobiphenyl (44)	3	3			3.35106	22.07328	10.18434	22.07328 J	5.12868 J	3.35106 J
2,2',3,6-Tetrachlorobiphenyl (45)	3	3			0.06558	0.24834	0.13312	0.24834 J	0.08544 J	0.06558 J
2,2',3,6'-Tetrachlorobiphenyl (46)	3	3			0.01319	0.04794	0.02836	0.04794 J	0.02396 J	0.01319 J
2,2',4,5-Tetrachlorobiphenyl (48)	2	3	0.0205	0.0205	0.10534	0.14127	0.08562	0.14127 J	0.10534 J	0.0205 UJ
2,2',4,5'-Tetrachlorobiphenyl (49)	3	3			1.52574	4.57948	2.58071	4.57948 J	1.52574 J	1.57692 J
2,2',4,6-Tetrachlorobiphenyl (50)	3	3			0.11	0.41486	0.21819	0.41486 J	0.11 J	0.1297 J
2,3,3',4'-Tetrachlorobiphenyl (56)	2	3	0.07804	0.07804	0.12455	0.14757	0.10371	0.14757 J	0.07804 UJ	0.12455 J
2,3,3',6-Tetrachlorobiphenyl (59)	3	3			2.36577	8.8371	4.59125	8.8371 J	2.57088 J	2.36577 J
2,3,4,4'-Tetrachlorobiphenyl (60)	3	3			0.34589	1.47536	0.90868	1.47536 J	0.9048 J	0.34589 J
2,3,4,5-Tetrachlorobiphenyl (61)	3	3			2.31944	9.0022	5.32628	9.0022 J	4.6572 J	2.31944 J
2,3,4',5-Tetrachlorobiphenyl (63)	3	3			0.1104	0.58372	0.33531	0.58372 J	0.31182 J	0.1104 J
2,3,4',6-Tetrachlorobiphenyl (64)	3	3			3.52202	22.55194	10.98139	22.55194 J	6.87021 J	3.52202 J
2,3',4,4'-Tetrachlorobiphenyl (66)	3	3			6.61755	32.53625	15.99655	32.53625 J	8.83585 J	6.61755 J
3,3',4,4'-Tetrachlorobiphenyl (77)	3	3			0.01809	0.07311	0.03933	0.07311 J	0.01809 J	0.02678 J
3,4,4',5-Tetrachlorobiphenyl (81)	1	3	0.09954	0.0997	0.05796	0.05796	0.05253	0.0997 UJ	0.09954 UJ	0.05796 J
2,2',3,3',4-Pentachlorobiphenyl (82)	3	3			0.89481	6.35672	2.89074	6.35672 J	0.89481 J	1.42068 J
2,2',3,3',5-Pentachlorobiphenyl (83)	3	3			27.00962	146.61278	67.45325	146.61278 J	28.73734 J	27.00962 J
2,2',3,3',6-Pentachlorobiphenyl (84)	3	3			2.6914	12.06892	5.87240	12.06892 J	2.6914 J	2.85687 J
2,2',3,4,4'-Pentachlorobiphenyl (85)	3	3			7.88352	43.10832	20.08909	43.10832 J	9.27543 J	7.88352 J
2,2',3,4,5-Pentachlorobiphenyl (86)	3	3			10.45764	62.01954	28.52220	62.01954 J	10.45764 J	13.08942 J
2,2',3,4,6-Pentachlorobiphenyl (88)	3	3			1.7845	10.66698	4.89983	10.66698 J	1.7845 J	2.248 J
2,2',3,4,6'-Pentachlorobiphenyl (89)	2	3	0.09954	0.09954	0.00821	0.02325	0.02708	0.02325 J	0.09954 UJ	0.00821 J
2,2',3,4',5-Pentachlorobiphenyl (90)	3	3			29.08842	125.35764	61.85345	125.35764 J	29.08842 J	31.11429 J
2,2',3,5,5'-Pentachlorobiphenyl (92)	3	3			7.45899	50.99518	23.32095	50.99518 J	11.50869 J	7.45899 J
2,2',3,5,6-Pentachlorobiphenyl (93)	3	3			10.1288	46.776	22.59830	46.776 J	10.1288 J	10.8901 J
2,3,3',4,4'-Pentachlorobiphenyl (105)	3	3			9.747	39.25978	21.15363	39.25978 J	14.45411 J	9.747 J
2,3,3',4,5-Pentachlorobiphenyl (106)	3	3			1.36947	4.39251	2.44992	4.39251 J	1.58778 J	1.36947 J
2,3,3',4',5'-Pentachlorobiphenyl (108)	3	3			0.2976	0.94038	0.53777	0.94038 J	0.2976 J	0.37534 J
2,3,3',4',6-Pentachlorobiphenyl (110)	3	3			51.44472	337.41246	149.08021	337.41246 J	51.44472 J	58.38346 J
2,3,4,4',5-Pentachlorobiphenyl (114)	3	3			0.54496	2.36006	1.16576	2.36006 J	0.59226 J	0.54496 J
2,3',4,4',5-Pentachlorobiphenyl (118)	3	3			45.30813	207.7078	104.32554	207.7078 J	59.96069 J	45.30813 J

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PARAMETER	Frequency of Detection		Minimum SQL	Maximum SQL	Minimum Detect	Maximum Detect	Average	LPX-AE-4001-0000-01-W 6/21/2001	LPX-AE-4002-0000-01-W 6/21/2001	LPX-AE-4003-0000-01-W 6/21/2001
3,3',4,4',5-Pentachlorobiphenyl (126)	3	3			0.06586	0.21718	0.12308	0.21718 J	0.08621 J	0.06586 J
2,2',3,3',4,4'-Hexachlorobiphenyl (128)	3	3			9.5995	49.69804	25.93390	49.69804 J	18.50416 J	9.5995 J
2,2',3,3',4,5-Hexachlorobiphenyl (129)	3	3			89.11776	468.8138	229.97936	468.8138 J	132.00652 J	89.11776 J
2,2',3,3',4,5'-Hexachlorobiphenyl (130)	3	3			3.64415	20.68318	10.63832	20.68318 J	7.58764 J	3.64415 J
2,2',3,3',4,6-Hexachlorobiphenyl (131)	3	3			0.10523	0.47465	0.25575	0.47465 J	0.18737 J	0.10523 J
2,2',3,3',4,6'-Hexachlorobiphenyl (132)	3	3			3.8733	36.61489	16.06132	36.61489 J	7.69577 J	3.8733 J
2,2',3,3',5,6-Hexachlorobiphenyl (134)	3	3			1.33252	10.60782	4.87535	10.60782 J	2.68572 J	1.33252 J
2,2',3,3',5,6'-Hexachlorobiphenyl (135)	3	3			2.98707	30.26892	13.03646	30.26892 J	5.85339 J	2.98707 J
2,2',3,3',6,6'-Hexachlorobiphenyl (136)	3	3			0.69249	3.89434	1.84474	3.89434 J	0.94739 J	0.69249 J
2,2',3,4,4',5-Hexachlorobiphenyl (137)	3	3			5.41884	30.83694	15.44031	30.83694 J	10.06514 J	5.41884 J
2,2',3,4,5,5'-Hexachlorobiphenyl (141)	3	3			4.72461	25.83505	14.06990	25.83505 J	11.65003 J	4.72461 J
2,2',3,4,5',6-Hexachlorobiphenyl (144)	0	3	0.09944	0.0997			0.04978	0.0997 UJ	0.09954 UJ	0.09944 UJ
2,2',3,4',5,5'-Hexachlorobiphenyl (146)	3	3			9.25822	37.06244	21.00209	37.06244 J	16.6856 J	9.25822 J
2,2',3,4',5,6-Hexachlorobiphenyl (147)	3	3			37.89422	240.69742	106.79941	240.69742 J	41.8066 J	37.89422 J
2,2',4,4',5,5'-Hexachlorobiphenyl (153)	3	3			49.10966	224.97482	122.10743	224.97482 J	92.23782 J	49.10966 J
2,3,3',4,4',5-Hexachlorobiphenyl (156)	3	3			4.54002	20.7077	10.65481	20.7077 J	6.71672 J	4.54002 J
2,3,3',4,4',6-Hexachlorobiphenyl (158)	3	3			5.63	22.22589	12.87031	22.22589 J	10.75504 J	5.63 J
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	3	3			2.19901	8.53938	4.53287	8.53938 J	2.86021 J	2.19901 J
3,3',4,4',5,5'-Hexachlorobiphenyl (169)	3	3			0.07443	0.22618	0.14452	0.22618 J	0.13294 J	0.07443 J
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	3	3			5.2444	27.621	13.29659	27.621 J	7.02436 J	5.2444 J
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)	3	3			1.45456	8.43314	3.92229	8.43314 J	1.87916 J	1.45456 J
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)	3	3			1.00634	4.3722	2.29821	4.3722 J	1.51608 J	1.00634 J
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)	3	3			1.09217	12.42297	5.16550	12.42297 J	1.98135 J	1.09217 J
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)	3	3			0.08497	0.45648	0.23367	0.45648 J	0.15956 J	0.08497 J
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)	2	3	0.00492	0.00492	0.03529	0.25443	0.09739	0.25443 J	0.03529 J	0.00492 UJ
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)	3	3			2.71064	17.44082	7.90983	17.44082 J	3.57804 J	2.71064 J
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)	3	3			1.02277	5.23876	2.51111	5.23876 J	1.2718 J	1.02277 J
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)	3	3			8.55126	35.91006	19.17611	35.91006 J	13.067 J	8.55126 J
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)	0	3	0.19888	0.19941			0.09956	0.19941 UJ	0.19908 UJ	0.19888 UJ
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)	3	3			1.56187	7.44783	3.93416	7.44783 J	2.79277 J	1.56187 J
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)	3	3			0.00825	0.0316	0.01688	0.0316 J	0.01079 J	0.00825 J
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)	3	3			0.06458	0.47036	0.21876	0.47036 J	0.12134 J	0.06458 J
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	3	3			14.03705	70.05311	32.74379	70.05311 J	14.14121 J	14.03705 J
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	3	3			0.17222	0.7062	0.38936	0.7062 J	0.28965 J	0.17222 J
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)	3	3			1.7304	7.58653	3.78687	7.58653 J	2.04369 J	1.7304 J
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	3	3			0.18857	0.6882	0.38312	0.6882 J	0.27259 J	0.18857 J
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	3	3			1.63433	6.76815	3.67319	6.76815 J	2.61708 J	1.63433 J
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	3	3			0.51945	2.81942	1.34873	2.81942 J	0.70731 J	0.51945 J
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)	3	3			0.80155	3.34361	1.75556	3.34361 J	1.12151 J	0.80155 J
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)	3	3			0.0507	0.19903	0.10984	0.19903 J	0.0798 J	0.0507 J

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2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)	3	3			9.44118	47.1084	22.06739	47.1084 J	9.44118 J	9.65258 J
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (200)	3	3			0.03105	0.27166	0.11337	0.27166 J	0.03741 J	0.03105 J
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)	3	3			0.18727	1.00344	0.51347	1.00344 J	0.34971 J	0.18727 J
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)	3	3			3.12008	10.69282	5.96319	10.69282 J	4.07666 J	3.12008 J
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	3	3			0.08458	0.3543	0.19534	0.3543 J	0.14713 J	0.08458 J
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	3	3			5.95456	23.82844	12.26355	23.82844 J	7.00765 J	5.95456 J
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	3	3			0.41108	1.47746	0.83073	1.47746 J	0.60366 J	0.41108 J
Decachlorobiphenyl (209)	3	3			3.13481	16.52843	7.66151	16.52843 J	3.32128 J	3.13481 J
PCB Congeners, Total	3	3			559.45	2850.7178	1386.30089	2850.7178 J	748.73488 J	559.45 J
Toxicity Equivalency (PCB)	3	3			0.0154	0.0604	0.0323	0.0604	0.0211	0.0154
Other (%)										
Lipid_percent	10	10			15.9	22.1	18.7	17.8	17.1	19.8

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* 106(12):775-792.

Samples ending with:
W - whole body

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Semivolatile Organics (ug/Kg)								
1,1'-Biphenyl	0.77 J	0.72 J	1.28 J	1.05 J	0.79 J	0.77 J	0.78 J	
2-Methylnaphthalene	4	3.23	5.34	3.87	4.6	4.52	4.02	
Acenaphthene	7.8	6.12	6.39	8.15	5.93	7.16	6.51	
Acenaphthylene	1.65	1.3	1.9	2.54	2.16	2.94	2.79	
Anthracene	2.45	1.78	2.46	2.84	2.68	3.79	3.22	
Benzo(a)anthracene	3.45	1.3 U	1.28 U	1.3 U	1.3 U	1.7 U	1.27 U	
Benzo(a)pyrene	3.82	1.3 U	1.28 U	1.3 U	1.3 U	1.29 U	1.27 U	
Benzo(b)fluoranthene	5.77	1.3 U	1.28 U	1.3 U	1.3 U	2.01 U	1.27 U	
Benzo(g,h,i)perylene	1.29 U	1.3 U	1.28 U	1.3 U	1.3 U	1.29 U	1.27 U	
Benzo(k)fluoranthene	5.11	1.3 U	1.28 U	1.3 U	1.3 U	2.02 U	1.27 U	
Chrysene	7.38	1.46 U	1.28 U	1.3 U	1.34 U	3.23 U	1.65 U	
Dibenzo(a,h)anthracene	0.75 J	1.3 U	1.28 U	1.3 U	1.3 U	0.61 J	1.27 U	
Dibenzofuran	1.6	1.41	1.32	1.75	1.4	1.67	1.32	
Fluoranthene	23.09	9.55	10.91	11.44	10.17	14.28	11.92	
Fluorene	3.08	2.81	2.5	3.18	2.75	3.53	2.75	
Indeno(1,2,3-cd)pyrene	3.38	1.3 U	1.28 U	1.3 U	1.3 U	1.29 U	1.27 U	
Naphthalene	5.23	4.43	6.57	6.11	6.23	6.66	5.98	
Phenanthrene	19.93	11.01	10.27	11.83	10.93	15.45	11.5	
Pyrene	11.65	3.76 U	4.27 U	4.31 U	4.05 U	6.32	5.02 U	
Total PAH	110.9	42.34	48.95	52.77	47.65	67.68	50.8	
Pesticides/PCBs (ug/Kg)								
4,4'-DDD	13.17 J	13.62 J	13.83	15.35	14.27	20.72 J	12.69 J	
4,4'-DDE	47.33 J	37.17 J	38.98	46.5	37.22	78.91 J	41.05 J	
4,4'-DDT	1.3 U	5.66 J	3.26	2.37	2.73	3.65 J	3.59 J	
Aldrin	1.3 U	1.3 U	1.28 U	1.3 U	1.31 U	1.29 U	1.28 U	
alpha-BHC	1.3 U	1.3 U	1.28 U	1.3 U	1.31 U	1.29 U	1.28 U	
alpha-Chlordane	18.07 J	15.97 J	18.11	14.07	18.37	19.5 J	17.16 J	
Aroclor, Total	652.27 J	633.66 J	678.34	673.14	785.81	1177.73 J	737.8 J	
Aroclor-1016	16.17 U	16.25 U	16.01 U	16.23 U	16.3 U	16.07 U	15.92 U	
Aroclor-1221	16.17 U	16.25 U	16.01 U	16.23 U	16.3 U	16.07 U	15.92 U	
Aroclor-1232	16.17 U	16.25 U	16.01 U	16.23 U	16.3 U	16.07 U	15.92 U	
Aroclor-1242	16.17 U	16.25 U	16.01 U	16.23 U	16.3 U	16.07 U	15.92 U	
Aroclor-1248	16.17 U	16.25 U	16.01 U	16.23 U	16.3 U	16.07 U	15.92 U	
Aroclor-1254	652.27 J	633.66 J	678.34	673.14	785.81	1177.73 J	737.8 J	
Aroclor-1260	16.17 U	16.25 U	16.01 U	16.23 U	16.3 U	16.07 U	15.92 U	
Aroclor-1268	16.17 U	16.25 U	16.01 U	16.23 U	16.3 U	16.07 U	15.92 U	
beta-BHC	1.91 J	2.55 J	1.35	0.73 J	0.61 J	1.17 J	1.07 J	
delta-BHC	1.3 U	1.3 U	1.28 U	1.3 U	1.31 UJ	1.29 UJ	1.28 UJ	
Dieldrin	6.62 J	7.81 J	6.73	6.65	7.42 J	11.15 J	9.45 J	

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Endosulfan I	1.3 U	1.3 U	1.28 U	1.3 U	1.31 U	1.29 U	1.28 U	
Endosulfan II	1.3 U	1.3 U	1.28 U	1.3 U	1.31 U	1.29 U	1.28 U	
Endosulfan Sulfate	1.3 U	1.3 U	1.28 U	1.3 U	1.31 U	1.29 U	1.28 U	
Endrin	1.3 U	1.3 U	1.28 U	1.3 U	1.31 U	1.29 U	1.28 U	
Endrin Aldehyde	1.3 UJ	1.3 UJ	1.28 UJ	1.3 UJ	1.31 UJ	1.29 UJ	1.28 UJ	
Endrin Ketone	1.3 U	1.3 U	1.28 U	1.3 U	1.31 U	1.29 U	1.28 U	
gamma-BHC	1.37 J	1.4 J	1.12 J	0.97 J	1.24 J	1.29 UJ	1.37 J	
gamma-Chlordane	6.12 J	7.55 J	7.65	7	9.43	9.31 J	8.06 J	
Heptachlor	1.3 U	1.3 U	1.28 U	1.3 U	1.31 UJ	1.29 UJ	1.28 UJ	
Heptachlor Epoxide	1.82 J	1.78 J	1.75	1.64	1.66	1.93 J	1.85 J	
Methoxychlor	1.3 U	1.3 U	1.28 U	1.3 U	1.31 U	1.29 U	1.28 U	
Technical Chlordane	319.18 J	336.13 J	360.47	340.93	344.26	600.57 J	637.02 J	
Toxaphene	32.34 U	32.51 U	32.02 U	32.47 U	32.59 U	32.15 U	31.83 U	
Inorganics (mg/Kg)								
Aluminum	41.6	2.92	3.38	5.1	5.65	23	5.38	2.84
Antimony	0.00643 J	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U
Arsenic	0.0425 U	0.0486 U	0.034 U	0.0531 U	0.0492 U	0.0417 U	0.0731 U	0.0404 U
Barium	0.781	0.234	0.2	0.248	0.353	0.601	0.357	0.217
Beryllium	0.00485 U	0.004 U	0.004 U	0.004 U	0.004 U	0.00525 U	0.004 U	0.004 U
Cadmium	0.0247 J	0.0425 J	0.027 J	0.0139 J	0.0293 J	0.011 J	0.0303 J	0.0411 J
Chromium	0.187 J	0.269 U	0.269 U	0.269 U	0.269 U	0.269 U	0.269 U	0.269 U
Cobalt	0.0624 J	0.0688 J	0.0454 J	0.0427 J	0.0495 J	0.0643 J	0.055 J	0.0593 J
Copper	0.728	0.756	0.542	0.664 J	0.609 J	0.532 J	0.793	0.979
Iron	53.2	22	18.7	28 J	31.3 J	42.9 J	27.7 J	24.3
Lead	0.473 J	0.312 J	0.164 J	0.11 J	0.203 J	0.44 J	0.334 J	0.268 J
Manganese	7.65	4.14	1.76	3.52	3.74	3.61	2.96	3.75
Mercury	0.0356	0.0756	0.0321	0.0424 U	0.0646 U	0.0202 U	0.0433 U	0.0721
Mercury (methyl)	0.0428	0.0673	0.0337	0.0247	0.0289	0.0164	0.0359	0.0735
Molybdenum	0.0135 J	0.019 J	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
Nickel	0.119 J	0.107 J	0.0757 J	0.0653 J	0.0862 J	0.124 J	0.0844 J	0.0983 J
Selenium	0.273 J	0.31 J	0.366 J	0.448 U	0.385 J	0.35 J	0.402 J	0.31 J
Silver	0.06 U	0.000324 J	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Thallium	0.022 U	0.022 U	0.022 U	0.00815 J	0.00444 J	0.00467 J	0.00534 J	0.022 U
Vanadium	0.179 U	0.179 U	0.179 U	0.179 U	0.179 U	0.179 U	0.0681 J	0.179 U
Zinc	19.8	28.3	25.7	18.2 J	22.5 J	21.3 J	24.4 J	30.2
Dioxins/Furans (ug/Kg)								
HCX	0.03535 J	0.05672 J	0.06196 J	0.05206 J	0.05707 J	0.09623 J	0.04055 J	
TCX	R	R	R	R	R	R	R	
2,3,7,8-TCDD	0.08475 J	0.18052 J	0.13602 J	0.17748 J	0.20919 J	0.24673 J	0.15437 J	
1,2,3,7,8-PeCDD	0.00065 UJ	0.00097 UJ	0.00084 UJ	0.00106 UJ	0.00105 UJ	0.00146 UJ	0.00087 J	

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1,2,3,4,7,8-HxCDD	0.00048 J	0.00064 J	0.00044 J	0.00064 J	0.00086 J	0.00084 J	0.00076 J	
1,2,3,6,7,8-HxCDD	0.00179 J	0.00291 J	0.00231 J	0.00285 J	0.0037 J	0.0043 J	0.00362 J	
1,2,3,7,8,9-HxCDD	0.00047 J	0.00027 J	0.00023 J	0.00022 J	0.00037 J	0.00041 J	0.0003 J	
1,2,3,4,6,7,8-HpCDD	0.00355 J	0.00256 J	0.00209 J	0.00248 J	0.00329 J	0.0039 J	0.00372 J	
OCDD	0.00886 UJ	0.00262 UJ	0.0023 UJ	0.00244 UJ	0.00343 UJ	0.00554 UJ	0.0032 UJ	
2,3,7,8-TCDF	0.00015 UJ	0.00013 UJ	0.0002 UJ	0.00017 UJ	0.00022 UJ	0.00006 J	0.00014 UJ	
1,2,3,7,8-PeCDF	0.00016 UJ	0.00027 UJ	0.00028 UJ	0.0002 UJ	0.00032 UJ	0.00018 UJ	0.00012 UJ	
2,3,4,7,8-PeCDF	0.00016 UJ	0.00025 UJ	0.00027 UJ	0.00016 J	0.00019 J	0.00025 J	0.0002 J	
1,2,3,4,7,8-HxCDF	0.00033 UJ	0.00024 UJ	0.0002 UJ	0.00007 UJ	0.00009 UJ	0.00024 UJ	0.00023 UJ	
1,2,3,6,7,8-HxCDF	0.00025 J	0.00021 J	0.0002 UJ	0.00018 J	0.00009 UJ	0.00032 J	0.00025 J	
2,3,4,6,7,8-HxCDF	0.00015 UJ	0.00013 UJ	0.00012 UJ	0.00013 UJ	0.00018 UJ	0.00022 UJ	0.00016 UJ	
1,2,3,7,8,9-HxCDF	0.00023 UJ	0.00009 UJ	0.00022 UJ	0.00008 UJ	0.0001 UJ	0.00018 UJ	0.00011 UJ	
1,2,3,4,6,7,8-HpCDF	0.0016 J	0.0006 UJ	0.00049 UJ	0.00062 UJ	0.00083 J	0.00084 J	0.00076 J	
1,2,3,4,7,8,9-HpCDF	0.00016 UJ	0.00006 UJ	0.00011 UJ	0.00009 UJ	0.00012 UJ	0.00027 UJ	0.00017 UJ	
OCDF	0.00146 UJ	0.00023 UJ	0.00033 UJ	0.00025 UJ	0.00036 UJ	0.00069 UJ	0.0003 UJ	
Total TCDD	0.08475 J	0.18052 J	0.13602 J	0.17748 J	0.20919 J	0.24673 J	0.15437 J	
Total PeCDD	0.00065 UJ	0.00097 UJ	0.00084 UJ	0.00106 UJ	0.00105 UJ	0.00146 UJ	0.00087 UJ	
Total HxCDD	0.00293 J	0.00384 J	0.00299 J	0.00371 J	0.00493 J	0.0062 J	0.00468 J	
Total HpCDD	0.00423 J	0.00256 UJ	0.00209 UJ	0.00248 UJ	0.0034 UJ	0.00426 J	0.00372 J	
Total TCDF	0.00002 J	0.00002 J	0.0002 UJ	0.00001 J	0.00022 UJ	0.00023 J	0.00014 UJ	
Total PeCDF	0.00016 UJ	0.00037 J	0.00019 J	0.00016 J	0.00056 J	0.00133 J	0.00032 UJ	
Total HxCDF	0.00095 UJ	0.0006 UJ	0.00012 UJ	0.00033 UJ	0.0002 UJ	0.00078 UJ	0.00064 UJ	
Total HpCDF	0.00263 J	0.00083 UJ	0.001 UJ	0.00103 UJ	0.00164 UJ	0.0014 UJ	0.00103 J	
Toxicity Equivalency (Dioxins, Furans, HCX)	0.0851	0.181	0.136	0.178	0.21	0.248	0.156	
PCB Congeners (ug/Kg)								
2-Monochlorobiphenyl (1)								
4-Chlorobiphenyl (3)								
2,2'-Dichlorobiphenyl (4)								
2,3-Dichlorobiphenyl (5)								
2,3'-Dichlorobiphenyl (6)								
2,4-Dichlorobiphenyl (7)								
2,4'-Dichlorobiphenyl (8)								
2,5-Dichlorobiphenyl (9)								
2,6-Dichlorobiphenyl (10)								
3,4-Dichlorobiphenyl (12)								
2,2',3'-Trichlorobiphenyl (16)								
2,2',4-Trichlorobiphenyl (17)								
2,2',5-Trichlorobiphenyl (18)								
2,2',6-Trichlorobiphenyl (19)								
2,3,3'-Trichlorobiphenyl (20)								

Table A-17
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2,3,4'-Trichlorobiphenyl (22)								
2,3,6-Trichlorobiphenyl (24)								
2,3',4-Trichlorobiphenyl (25)								
2,3',5-Trichlorobiphenyl (26)								
2,4',5-Trichlorobiphenyl (31)								
2,4',6-Trichlorobiphenyl (32)								
2,2',3,3'-Tetrachlorobiphenyl (40)								
2,2',3,4'-Tetrachlorobiphenyl (42)								
2,2',3,5-Tetrachlorobiphenyl (43)								
2,2',3,5'-Tetrachlorobiphenyl (44)								
2,2',3,6-Tetrachlorobiphenyl (45)								
2,2',3,6'-Tetrachlorobiphenyl (46)								
2,2',4,5-Tetrachlorobiphenyl (48)								
2,2',4,5'-Tetrachlorobiphenyl (49)								
2,2',4,6-Tetrachlorobiphenyl (50)								
2,3,3',4'-Tetrachlorobiphenyl (56)								
2,3,3',6-Tetrachlorobiphenyl (59)								
2,3,4,4'-Tetrachlorobiphenyl (60)								
2,3,4,5-Tetrachlorobiphenyl (61)								
2,3,4',5-Tetrachlorobiphenyl (63)								
2,3,4',6-Tetrachlorobiphenyl (64)								
2,3',4,4'-Tetrachlorobiphenyl (66)								
3,3',4,4'-Tetrachlorobiphenyl (77)								
3,4,4',5-Tetrachlorobiphenyl (81)								
2,2',3,3',4-Pentachlorobiphenyl (82)								
2,2',3,3',5-Pentachlorobiphenyl (83)								
2,2',3,3',6-Pentachlorobiphenyl (84)								
2,2',3,4,4'-Pentachlorobiphenyl (85)								
2,2',3,4,5-Pentachlorobiphenyl (86)								
2,2',3,4,6-Pentachlorobiphenyl (88)								
2,2',3,4,6'-Pentachlorobiphenyl (89)								
2,2',3,4',5-Pentachlorobiphenyl (90)								
2,2',3,5,5'-Pentachlorobiphenyl (92)								
2,2',3,5,6-Pentachlorobiphenyl (93)								
2,3,3',4,4'-Pentachlorobiphenyl (105)								
2,3,3',4,5-Pentachlorobiphenyl (106)								
2,3,3',4',5'-Pentachlorobiphenyl (108)								
2,3,3',4',6-Pentachlorobiphenyl (110)								
2,3,4,4',5-Pentachlorobiphenyl (114)								
2,3',4,4',5-Pentachlorobiphenyl (118)								

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3,3',4,4',5-Pentachlorobiphenyl (126)								
2,2',3,3',4,4'-Hexachlorobiphenyl (128)								
2,2',3,3',4,5-Hexachlorobiphenyl (129)								
2,2',3,3',4,5'-Hexachlorobiphenyl (130)								
2,2',3,3',4,6-Hexachlorobiphenyl (131)								
2,2',3,3',4,6'-Hexachlorobiphenyl (132)								
2,2',3,3',5,6-Hexachlorobiphenyl (134)								
2,2',3,3',5,6'-Hexachlorobiphenyl (135)								
2,2',3,3',6,6'-Hexachlorobiphenyl (136)								
2,2',3,4,4',5-Hexachlorobiphenyl (137)								
2,2',3,4,5,5'-Hexachlorobiphenyl (141)								
2,2',3,4,5',6-Hexachlorobiphenyl (144)								
2,2',3,4',5,5'-Hexachlorobiphenyl (146)								
2,2',3,4',5,6-Hexachlorobiphenyl (147)								
2,2',4,4',5,5'-Hexachlorobiphenyl (153)								
2,3,3',4,4',5-Hexachlorobiphenyl (156)								
2,3,3',4,4',6-Hexachlorobiphenyl (158)								
2,3',4,4',5,5'-Hexachlorobiphenyl (167)								
3,3',4,4',5,5'-Hexachlorobiphenyl (169)								
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)								
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)								
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)								
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)								
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)								
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)								
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)								
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)								
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)								
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)								
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)								
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)								
2,2',3,4,5,5',6-Heptachlorobiphenyl (185)								
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)								
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)								
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)								
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)								
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)								
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)								
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)								
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)								

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2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)								
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (200)								
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)								
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)								
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)								
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl								
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl								
Decachlorobiphenyl (209)								
PCB Congeners, Total								
Toxicity Equivalency (PCB)								
Other (%)								
Lipid_percent	16.3	15.9	16.7	21.2	18.5	22.1	21.7	

NOTES:
SQL - Sample Quanitation Limit
HCX - 1,2,4,5,7,8-Hexachloroxanthene
TCX - 2,3,6,7-Tetrachloroxanthene
OCDD - Octachlorinated dibenzodioxin
OCDF - Octachlorinated dibenzofuran
Toxicity Equivalency (Dioxins, Furans, HCX) based on application of mammalian toxicity equivalency factors (Van den Berg, et al., 1998) to measured concentrations of dioxins, furans, and by application of USEPA HCX toxicity equivalency factor (0.0002) based on personal communication from USEPA, Chau Vu, May 22, 2002.
Toxicity Equivalency (PCB) based on application of mammalian toxicity equivalency factors to measured concentrations (Van den Berg, et al., 1998) of dioxin-like PCB congeners. Dioxin-like PCB congeners include PCBs 81, 77, 126, 169, 105, 114, 118, 123, 156, 157, 167, and 189.

Van den Berg, M., et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. *Environ. Health Persp.* 106(12):775-792.

Samples ending with:
W - whole body