SITE CHARACTERIZATION SUMMARY REPORT

STANDARD CHLORINE CHEMICAL CO. INC. SITE
KEARNY, NEW JERSEY

Prepared for:

Cooperating Parties Group
(Beazer East, Inc., Cooper Industries, LLC, and Tierra Solutions, Inc., on behalf of Occidental Chemical Corporation)

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EXECUTIVE SUMMARY

ES-1 INTRODUCTION

This Site Characterization Summary Report (SCSR) for the Standard Chlorine Chemical Co. Inc. (SCCC) Site (Site) located in Kearny, New Jersey has been prepared by Key Environmental, Inc., on behalf of the Cooperating Parties Group ("Group"). The Group is comprised of Beazer East, Inc. (Beazer, a former owner of a portion of the SCCC Site), Cooper Industries, LLC (a former owner of a portion of the SCCC Site), and Tierra Solutions, Inc., on behalf of Occidental Chemical Corporation (Tierra, the current owner of the adjacent Diamond Site). This SCSR has been prepared to address a specific requirement of a draft Remedial Investigation/Focused Feasibility Study (RI/FFS) Statement of Work (SOW) issued by the United States Environmental Protection Agency (USEPA) as an Appendix to a proposed Administrative Settlement Agreement and Order on Consent.

ES-2 SITE HISTORY

The Site consists of seven (7) different parcels of land located at 1025-1035 Belleville Turnpike, Kearny, Hudson County, New Jersey adjacent to the Hackensack River. Various forms of chemical manufacturing and/or processing have occurred on the different parcels of the Site since 1916. These activities included naphthalene refining and product formulation, dye-carrier production, dichlorobenzene refining and product formulation, and lead-acid battery manufacture. These activities were performed by multiple different corporate entities on different parcels of the Site.

In October 1989, the New Jersey Department of Environmental Protection (NJDEP) and SCCC entered into an Administrative Consent Order (ACO). This ACO required SCCC to plan and implement the following:

- Interim Remedial Measures to prevent potential contact with materials in the lagoon area and to secure damaged tanks and containers

- A Remedial Investigation and Feasibility Study
- Selected remedial alternative(s)

In December 2001, NJDEP referred the SCCC Site to the USEPA for proposed addition to the National Priorities List (NPL). On April 30, 2003, the USEPA proposed to add the Site to the NPL and the Site was subsequently listed on September 19, 2007. Work under the SCCC ACO continued through the period of Site Listing, and included the development of an NJDEP-approved Interim Response Action Workplan (IRAW). Upon Site listing, an Engineering Evaluation/Cost Analysis (EE/CA) corresponding to the response proposed in the NJDEP-approved IRAW was submitted to (and approved by) the USEPA. The USEPA designated NJDEP as the lead agency for implementation of the Interim Response Action (IRA) as described in the IRAW and EE/CA.

Over the last twenty-five to thirty years numerous investigative and response activities have been undertaken at the Site. Most of these activities were funded by SCCC, by the Peninsula Restoration Group (PRG), a group that consisted of Beazer, Tierra on behalf of Occidental Chemical Corporation (OCC), and SCCC, and most recently, by the Cooperating Parties Group. While the PRG and NJDEP were in the process of negotiating a scope of work for an Interim Response Action (IRA), activities such as multiple work plan submittals, an asbestos and lead paint survey, wetlands delineation, an aerial topographic survey, waste classification requests, offsite disposal of demolition debris, numerical groundwater model development, vault content sampling and analysis, and a request to use the Area of Contamination Policy were completed proactively by the PRG. Environmental investigations, dating back to the early 1980s, have also been completed for the Site, as follows:

1983-1984	Hydrogeologic Investigation	Roy F. Weston, Inc.
1985	Phase II Dioxin Investigation	E.C. Jordan, Inc.
1987	Stage 1Dioxin Investigation	Roy F. Weston, Inc.
1988	Stage 2 and 3 Dioxin Investigations	Roy F. Weston, Inc.
1991	Chromium Delineation	French & Parrello Associates
1990-1993	Remedial Investigation/Supplemental RI	Roy F. Weston, Inc.
1996-1997	Focused Remedial Investigation	ERM, Inc.

1997-1999	Supplemental Remedial Investigation	Key Environmental, Inc.
2000	Soil/Sediment Sampling and Analysis	Enviro-Sciences, Inc.
2000	Characterization of Containerized Materials	Enviro-Sciences, Inc.
2002	Surface Water and Sediment Sampling	EPA TAT
2008-2009	IRA Pre-Design Investigation	Key Environmental, Inc.
2008-2009	Phase II Supplemental RI	Key Environmental, Inc.

Multiple response actions have also been undertaken at the Site, consisting of Interim Remedial Measures, an Interim Response Action, a Removal Action, and other miscellaneous responses. Brief descriptions of these responses are as follows:

Interim Remedial Measures – Various Interim Remedial Measures (IRMs) have been implemented at the Site dating back to the early 1990s. These IRMs have been completed to preclude potential risks associated with exposure to chromium-impacted soils, to preclude access to impacted soils and the lagoon in the former process area, to control fugitive dust emissions, to provide protection of the lagoon area from flooding, and to control potential constituent migration via existing storm sewers. IRM activities were as follows:

- Installation of security fencing surrounding a former production area and lagoons to prevent unauthorized access (early 1990s);
- Addition of soil to the lagoon berm to increase its height and freeboard to prevent potential overflows (early 1990s);
- Placement of stabilizing geotextile and rip rap along the Hackensack River shoreline in the vicinity of the lagoon (early 1990s);
- Removal of the contents of five above-ground storage tanks and repackaging of asbestos-containing material removed from the former distillation building (early 1990s);
- Installation of an asphalt pavement overlay on traffic areas where existing asphalt pavement was present (1991);
- Installation of geotextile fabric/aggregate/asphalt cover in all remaining traffic areas with total chromium concentrations exceeding the NJDEP standard at the time, 75 mg/kg (1991);

- Geotextile/geomembrane liner/aggregate cover construction in non-traffic areas west of a railroad right-of-way (1991);
- Installation of a dust fence barrier along the railroad right-of-way and north fence line of the former northeast process area (1991);
- Improvements to existing stormwater sewer located between the SCCC Site and the adjacent Diamond Site to the north (2008).

Interim Response Action – An Interim Response Action (IRA) was completed in 2010 and 2011 and included significant construction components which have resulted in containment, control, and treatment of impacted media at the Site. The IRA was designed to address environmental conditions at both the Site and at the adjacent Diamond Site. The IRA was completed to eliminate the potential for subsurface discharge of constituents to the Hackensack River from the Site, to eliminate the potential for overland runoff of constituents to the Hackensack River from the Site, to remove DNAPL to the extent practicable as a source control measure, and to eliminate the potential for direct contact with constituents of interest at the Site. The IRA consisted of the following major components:

- Site Preparation Activities
- Physical Barrier Wall System
- Hydraulic Control System (consisting of groundwater extraction wells and treatment system)
- DNAPL Recovery System
- Lagoon Dewatering, Backfilling, and Surface Cover
- Near Shore Sediment Management
- South Ditch Sediment Management and Stormwater Management System Construction
- Consolidation Area Construction
- Wetland and Shoreline Mitigation
- Septic Tank Closure
- Transformer Pad Removal and Remediation
- Site Restoration
- Air Monitoring Activities

Implementation of the IRA was such that the Site is now fully enclosed by a slurry wall, is further protected along the Hackensack River by a steel sheet pile wall, is capped to prevent direct contact and overland runoff, has an upgraded infiltration-resistant stormwater management system, and has had multiple potential sources and impacted media removed or managed (i.e., PCB-impacted soil, lagoons, septic tanks, ditch sediments, and near shore river sediments). Reduction of toxicity, mobility, and volume has been achieved to date and is ongoing via the operation of groundwater and DNAPL recovery wells and a robust, permitted groundwater treatment plant with unit operations consisting of chromium reduction, metals precipitation, carbon adsorption, oil separation, and solids management.

Removal Action – A Removal Action (RA) was completed at the Site in 2010 which consisted of sealing existing structures that were perceived to be potential sources of wind-borne contamination. The RA was completed pursuant to an Administrative Settlement Agreement and Order on Consent for Removal Action entered into between the USEPA, SCCC, and Beazer dated June 7, 2010. An Administrative Order Notice of Completion was issued by the USEPA on January 20, 2011.

Additional Response Actions – Several additional responses have been completed at the Site and consisted of demolition of the majority of the Site structures and disposal of historical containerized materials associated with abatement operations and Site investigations. Demolition of all structures except historical structures associated with former activities of Thomas A. Edison Inc. at the Site (Buildings 1, 2, 3 and 4) has been completed. The demolition of the structures was completed in three separate phases designated as Track 1, Track 2, and Track 3. Track 1 demolition was completed prior to IRA implementation to facilitate construction and Track 2 and Track 3 demolition were conducted as the IRA neared completion. NJDEP-approved work plans which were also provided to USEPA for review, were prepared for each phase of the demolition. Upon completion, each phase of demolition was summarized in a Demolition Remedial Action Report that was submitted to the NJDEP. Various asbestos-abatement materials and investigation-derived waste had been previously containerized and stored at the SCCC Site in six SeaLand containers. These materials were appropriately

characterized and managed. A total of seven material shipments were made to an off-site disposal facility.

ES-3 PHYSICAL SETTING

The SCCC Site occupies an area of approximately 25 acres, consisting of six (6) upland land parcels referred to on the Tax Map of the Town of Kearny as Block 287, Lots 48, 49, 50, 51, 52, and 32.01, as well as one (1) riparian parcel located adjacent to Lot 52 that is referred to on the Tax Map as Block 287 Lot 52R. The Site is bounded by the Hackensack River to the northeast, Belleville Turnpike to the southwest, the Diamond Site to the north and northwest, and the Seaboard Site to the southeast. The SCCC Site is located along the tidal portion of the Hackensack River. Land use in the general vicinity is industrial, commercial, and/or used as transportation corridors. There are no nearby residential areas.

The Site is located in a former meadow that was filled in at the beginning of the 20th century. The tidal Hackensack River forms the eastern property boundary. The entire property lies within the 100-year floodplain of the Hackensack River. The Hackensack River adjacent to the SCCC Site is classified as SE2 (Saline Estuarine waters with specific uses as codified at N.J.A.C. 7:9B-1.12(e)). Various drainage ditches to the Hackensack River historically existed at the Site, most notably the South Ditch.

Hudson County lies within the Piedmont Province of New Jersey. It is mainly underlain by slightly folded and faulted sedimentary rocks of Triassic and Jurassic age (240 to 140 million years old) and igneous rocks of Jurassic age. Geology at the Site consists of upper fill materials ranging in thickness from 2 to 10 feet, an underlying peat layer locally referred to as the Meadow Mat, a deeper sand unit approximately 10 feet thick, and below these units, a massive low permeability varved clay unit. The varved clay is continuous beneath the areal extent of the Site, is at least 40 feet thick if not more, and is underlain by glacial till and bedrock.

Historically, surface water runoff at the Site was channeled into surface ditches that originated on the Site and flowed to the south into what was referred to as the South Ditch. In addition, an

underground storm sewer with catchment basins was located along the northern Site boundary between Lots 48 and 49 and the Diamond Site. Under current conditions, all surface flows at the Site are directed to one of the two enclosed culvert stormwater management systems.

Two separate shallow groundwater-bearing units have been the focus of the groundwater investigation activities performed at the Site: 1) the shallow fill unit; and 2) the deeper sand unit that underlies the Meadow Mat and overlies the varved clay. The water table at the Site occurs in the shallow fill material overlying the Meadow Mat. The Meadow Mat acts as a basal semi-confining unit that limits, but does not completely eliminate the hydraulic connection between the shallow fill materials and the underlying deeper sand unit.

Prior to construction of the Site barrier walls and stabilization/backfilling/covering of the lagoons and development of the consolidation area, groundwater flow in the shallow fill unit at the Site appeared to be influenced by recharge and discharge phenomena. At the current time, groundwater flow regimes are in a state of flux. The installation of the IRA slurry wall and subsequent operation of the hydraulic control groundwater collection network was intended to depress the water table to ensure inward hydraulic gradients and progress toward this objective is being accomplished. The Site was inundated during a recent storm (Hurricane Sandy). Given that the Site is currently largely paved or covered with other impervious surfaces, the majority of the stormwater associated with the hurricane ran off via the new storm sewer system. As a consequence of the storm, an increase in inward hydraulic gradients has recently been observed across the slurry well because water levels rose more on the outward side of the slurry wall. Piezometers located on either side of the subsurface barrier walls are being used to monitor the groundwater flow elevations and gradients at the Site.

ES-4 SUMMARY OF SITE CHARACTERIZATION DATA

As a result of extensive prior investigations of the Site, the nature and extent of contamination is well defined although final resolution of some issues remains. In general the findings of the investigations have been as follows:

Chromium-impacted soils exist in many areas of the Site. These areas have been capped with various types of cover materials as part of the NJDEP-approved IRMs and the IRA. The Meadow Mat at the Site serves to reduce hexavalent chromium to the insoluble trivalent form and consequently groundwater impacts associated with the chromium are essentially limited to the surficial fill materials. It does not appear that any significant migration of chromium to the Hackensack River has occurred via either surface or subsurface pathways.

Elevated concentrations of 2,3,7,8-TCDD toxicity equivalents (TCDD TEQ) were detected at the Site (primarily in the lagoon solids but also in DNAPL) and polychlorinated-dibenzofurans are the primary contributors to the TCDD TEQ. Limited or no evidence of TCDD TEQ impacts to the adjacent Hackensack River were identified despite multiple investigations.

Subsurface DNAPL at the site has migrated to offsite properties (the adjacent Diamond Site to the north and the Seaboard Site to the south). The DNAPL has been observed to contain chlorinated benzenes, naphthalene, polychlorinated biphenyls, and polychlorinated-dibenzodioxins/furans. Evidence of some limited migration of dissolved phase constituents (primarily naphthalene and chlorinated benzenes) to the Hackensack River was identified. Chlorinated aromatic hydrocarbon migration was demonstrated by the detection of these constituents in the deeper portion of the Hackensack River sediment bed (10 foot depth) but no evidence of impact on the biotic sediment zone was observed.

Other polycyclic aromatic hydrocarbons (PAHs) have been identified in Site media although no significant migration of such constituents was noted. Given the industrialized nature of the Hackensack River watershed, the detection of most PAHs in the former river sediments was likely associated with other sources.

ES-5 PRELIMINARY CONCEPTUAL SITE MODEL

Under existing Site conditions (i.e., as a result of the multiple, varied, robust response actions), potential exposures to Site-related constituents have been mitigated. Migration of these constituents from the Site under historical conditions appeared to be relatively minor with the

exception of migration of DNAPL to the adjacent Diamond and Seaboard properties. Implementation of the IRA and the IRMs has resulted in effective containment at the Site and is believed to have entirely eliminated the potential for exposures under existing Site conditions. Potential exposures are possible under certain hypothetical future land and water use scenarios. Such exposures could occur if Site disturbance associated with construction or utility work occurs or if groundwater is developed as a potable source (unlikely given the Site location and potential salinity issues). However, institutional and administrative controls are considered effective means to mitigate such hypothetical future exposures.

ES-6 SUMMARY OF DATA NEEDS

As a result of the many previous Site investigations and implementation of various Site response actions, most notably the IRMs and the IRA, additional data needs for the Site are considered to be limited in nature. The PRG previously prepared and submitted to the NJDEP a Phase II Supplemental Remedial Investigation (SRI) Work Plan (SRIWP) to address outstanding Site characterization needs identified by the NJDEP. The SRIWP was reviewed by the NJDEP Technical Coordinator and hydrogeologist, both of whom indicated that they had no further comments. The majority of the Phase II SRI activities proposed in the SRIWP were performed concurrently with the IRA pre-design investigation. Remaining data needs consist of an investigation of the varved clay to confirm the vertical extent of impacts and additional characterization efforts on Lot 50, which has not been investigated as extensively as has the remainder of the Site. In addition, an investigation of the horizontal extent of DNAPL around DNAPL delineation boring D-4 located on the western side of the Seaboard Site is also considered appropriate. A boring program to investigate the varved clay/vertical extent of impacts and the extent of any impacts on Lot 50 and in the vicinity of DNAPL boring D-4 will be proposed in an upcoming RI/FFS Work Plan

ES-7 SUMMARY AND CONCLUSIONS

The SCCC Site has been investigated since the early 1980s, including multiple Site investigations that were completed in response to an Administrative Consent Order with the

NJDEP. Under the conditions of the ACO, SCCC was required to implement interim remedial measures to prevent contact with materials in the lagoons, to conduct a remedial investigation and feasibility study, and to implement remedial alternative(s) as appropriate.

This widespread and detailed scope of investigations and remedial activities conducted to date, coupled with the data collected via the remaining minor field activities, have or will adequately define the nature and extent of impacts from the Site and minimize the potential for exposures to Site-related constituents either on-Site or off-Site. Continued operation and monitoring of the hydraulic control system and DNAPL removal, as well as maintenance of the cover materials on the property will minimize future potential risks associated with the Site.

In summary, existing data are considered adequate to characterize Site conditions although it is considered appropriate that limited additional investigation activities be completed for the Site in accordance with an approved RI work plan. Furthermore, a Focused Feasibility Study of Alternatives should be prepared to assess the efficacy of existing remedial measures and to identify the need for any additional remediation work for the Site.

1.0 INTRODUCTION

This Site Characterization Summary Report (SCSR) for the Standard Chlorine Chemical Co. Inc. (SCCC) Site (Site) located in Kearny, New Jersey has been prepared by Key Environmental, Inc., on behalf of the Cooperating Parties Group ("Group"). The Group is comprised of Beazer East, Inc. (Beazer, a former owner of a portion of the SCCC Site), Cooper Industries, LLC (a former owner of a portion of the SCCC Site), and Tierra Solutions, Inc. on behalf of Occidental Chemical Corporation (Tierra, the current owner of the adjacent Diamond Site).

This SCSR has been prepared to address a specific requirement of a draft Remedial Investigation/Focused Feasibility Study (RI/FFS) Statement of Work (SOW) issued by the United States Environmental Protection Agency (USEPA) as Appendix A of a proposed Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Focused Feasibility Study (Agreement) for the SCCC Site. Specifically, this SCSR has been prepared to address the requirements listed in Section II (Task 1 – Site Characterization Summary Report) of the draft USEPA RI/FFS SOW dated July 2012.

Figure 1-1 is a Site location map which shows the existing Site boundaries on a United States Geological Survey base map. The Site is situated directly adjacent to the Hackensack River in Hudson County, New Jersey, and is located approximately 4,000 feet east of the intersection of I-95 and I-280.

1.1 PURPOSE

The primary purpose of this document is to summarize available Site information to facilitate the development of a preliminary Conceptual Site Model (CSM) and to provide the basis for identification of additional data requirements. Available Site information consists of Site physical information and historical sampling and analysis results, as well as information regarding historical Interim Remedial Measures, an Interim Response Action, a Removal Action, and additional responses completed to date that have a direct bearing on the CSM and data requirements.

Although a substantial amount of historical Site analytical data are available, it should be recognized that these data are reflective of Site conditions prior to the completion of multiple remedial activities, most significantly an Interim Response Action that was initiated in 2010 and completed in 2011. The Interim Response Action (IRA) included the collection of additional samples and information during the IRA pre-design investigation. The pre-design investigation (PDI) and the IRA were completed in accordance with an Interim Response Action Work Plan dated October 2008 (KEY, October 2008) which was approved by the New Jersey Department of Environmental Protection (NJDEP).

During collection of the pre-design data, additional data were also obtained to support the completion of a Supplemental Remedial Investigation (SRI). The SRI was scoped based on communications with the NJDEP. The majority of the sampling and analysis activities scoped for the SRI were completed prior to initiation of the IRA because the SRI sampling locations were either co-located with PDI sample locations or were located on the adjacent Koppers Seaboard Site which was also undergoing remediation during that time frame. These additional data collection activities were completed in accordance with a Supplemental Phase II Remedial Investigation Work Plan (SRIWP) dated December 2008 (KEY, December 2008).

1.2 DOCUMENT ORGANIZATION

This SCSR is organized into eight sections and is supported by multiple figures, tables, and appendices. The eight sections of the report are as follows:

Section 1.0 – Introduction – Provides a brief introduction regarding the Site, the basis for preparation of this document, and the purpose of the document.

Section 2.0 – Site History – Contains a summary of Site ownership and operations, regulatory history, previous Site investigations, and a discussion of Interim Remedial Measures, the Interim Response Action, a Removal Action, and additional response activities that have been implemented at the Site.

Section 3.0 – Physical Setting – Summarizes historical and current Site conditions, land and water use in the area, physiography, geology and hydrogeology, and hydrology.

Section 4.0 – Summary of Site Characterization Data – Summarizes chemical-analytical data for soil, groundwater, DNAPL, surface water, lagoon solid and liquid, and sediment samples.

Section 5.0 – Preliminary Conceptual Site Model – Identifies constituents of interest, fate and transport information, potential migration pathways, and potential receptors and associated potential exposure routes.

Section 6.0 – Potential Data Needs – Identifies data needed to fully complete characterization of the Site (primarily the horizontal and vertical extent of chromium and DNAPL) under existing conditions.

Section 7.0 – Summary and Conclusions – Summarizes the information contained in the previous sections of the reports and provides recommendations for additional data collection activities.

Section 8.0 – References – Provides a list of all relevant historical documents referenced in this SCSR.

2.0 SITE HISTORY

A summary of Site historical information is provided in this section. A review of Site ownership and operations is provided in Section 2.1. The regulatory history of the Site is summarized in Section 2.2. A synopsis of historical Site investigations is provided in Section 2.3 (the analytical results of these investigations are discussed in Section 4). Descriptions of various remedial activities undertaken to date are summarized in Sections 2.4 through 2.8. Interim Remedial Measures are described in Section 2.4. The IRA, which was the most extensive remedial effort undertaken to date, is discussed in detail in Section 2.5. A Removal Action is discussed in Section 2.6 and additional response actions are discussed in Section 2.7.

2.1 OWNERSHIP AND OPERATIONS

The Site is located at 1025-1035 Belleville Turnpike, Kearny, Hudson County, New Jersey adjacent to the Hackensack River. The Site is comprised of seven (7) distinct properties each designated as a separate lot on the Tax Map of the Town of Kearny. Block 287, Lots 48, 49, 50, 51, 52, and 32.01 are upland parcels, and Block 287, Lot 52R is a riparian parcel adjoining Lot 52. Figure 2-1 is a Site base map that shows the historical site arrangement just prior to initiation of an extensive Interim Response Action (IRA) completed from 2010 through 2011. The property lines and parcels, as well as the building numbers subsequently referenced, are identified on Figure 2-1. Appendix A contains a series of aerial photographs (from 1946 through 2012) which depict the Site conditions at various times prior to completion of the IRA (1946 through 2006) and after completion of the IRA (2012).

Various forms of chemical manufacturing and/or processing have occurred on the properties making up the Site since 1916. The White Tar Company purchased Lots 48 and 49 in 1916. Thomas A. Edison, Inc. acquired Lots 50, 51, 52, and 52R in approximately 1929 or earlier. The dates of Thomas Edison's purchase of the property at the Site and Edison's construction of the lead-acid battery manufacturing facility will be researched in compliance with the National Historic Preservation Act. The history will be briefly summarized in the RI Report. Lot 32.01 is a former railroad right-of-way (approximately 25 feet wide) that bisects the Site on a north-south orientation. The remainder of this section summarizes historic ownership and operations at the properties making up the Site. Ownership history and operations for the various

Lots are summarized separately given significant differences in the ownership history and nature of operations undertaken on the different properties constituting the Site.

2.1.1 History of Owners, Operators, and Operations - Lots 48, 49, 51, 52, and 52R

Information regarding the ownership of Lots 48 and 49 dates back to 1916. The earliest record of a property transaction involving Lots 51 and 52 is from 1929. The State of New Jersey made a riparian grant of the submerged lands constituting Lot 52R in 1924. A summary of property transfers and acquisitions for these lots is as follows:

1916: Newark Factory Sites Co. sells undeveloped Lots 48 and 49 to the White Tar Company of New Jersey (White Tar), which constructs a facility (the White Tar Plant) for the refining of coal-tar naphthalene and the manufacture of naphthalene products.

1924: The State of New Jersey, Board of Commerce and Navigation issues a riparian grant for the submerged lands constituting Lot 52R, with the boundaries running from the high water line of Lot 52 to the United States pierhead and bulkhead line in the Hackensack River.

1929: The Thomas A. Edison, Inc. company acquires Lots 51, 52, and 52R. No known industrial operations are conducted on these Lots at that time based on available information.

1935: White Tar stock is acquired by The Koppers Company (Koppers), and White Tar continues naphthalene refining and manufacturing operations.

1942: White Tar is liquidated. The land comprising Lots 48 and 49 and existing buildings are conveyed to Koppers. Koppers continues operations at the Site as the "White Tar Division."

1944: Koppers merges into Koppers Company, Inc. (Koppers Company, Inc. is renamed Beazer East, Inc. in 1990). Lots 48 and 49, and the buildings and improvements thereon are conveyed from Koppers to Koppers Company, Inc. (KCI). KCI renames the operations on Lots 48 and 49 to the "Meadows Plant."

1946: KCI acquires Lots 51, 52 and 52R from Thomas A. Edison, Inc. for use in Meadows Plant operations.

1962: KCI sells Lots 48, 49, 51, 52 and the riparian Lot 52R as well as all buildings and improvements then constituting its Meadows Plant to Standard Naphthalene Products Co., Inc. (SNP). SNP is a wholly-owned subsidiary of the Standard Chlorine Chemical Co., Inc. (SCCC).

Prior to the 1962 property acquisitions by SNP, the history of operations on Lots 48, 49, 51 and 52 was primarily related to the refining of coal-tar naphthalene and manufacture of naphthalene products.

After 1962, SCCC and SNP conducted dichlorobenzene and trichlorobenzene distillation and product formulation operations on Lot 49 for a limited time. Lots 48, 51, 52 and 52R were also used by SCCC and SNP for certain other activities associated with their respective operations. A brief summary of the various operations on the various Lots is as follows:

1916-1962: The White Tar Plant (and later the Meadows Plant) refine coal tar naphthalene and manufacture various naphthalene products.

- Refining operations were restricted to Lot 49. After 1946, waste materials were handled in lagoons located on Lot 52.

- Production operations were conducted on Lot 49 throughout this time period and on Lot 51 after 1946; finished goods packaging and storage was conducted on Lot 48.

1963-1981: SNP manufactures naphthalene products from pure petroleum naphthalene; SCCC separates dichlorobenzenes (DCBs), and for a limited period, trichlorobenzenes (TCBs).

- SNP manufactures naphthalene products on Lot 51. Pure petroleum naphthalene is used for production. Refining of the naphthalene in the subliming building on Lot 49 is discontinued.

- All materials produced in the DCB separation operations were used in product manufacture. Production waste streams from distillation of DCBs and TCBs are conveyed to the onsite lagoon system on Lot 52.

- Lot 48 is used only for packaging and storage of finished products manufactured by SNP and SCCC.

1980-1981: All naphthalene and chlorinated aromatic refining, processing, formulating, manufacturing, packaging, and storage operations at the Site have been discontinued.

2.1.2 History of Owners, Operators, and Operations - Lot 50

Information regarding the ownership of Lot 50 dates back to 1929. A summary of property transfers and acquisitions for these lots is as follows:

1929-1954: Thomas A. Edison, Inc. and related companies owned and operated a lead-acid battery manufacturing facility (the Edison Plant) on Lot 50.

- Operations included all aspects of battery and casing manufacture, including reclamation of spent lead oxide and scrap metal, storage of raw materials, and storage of coal for onsite power.

- Raw materials and finished goods were transported to/from plant by rail, truck and possibly via barge (a small waterfront dock on Lot 52R can be seen on historical photographs).

1954: Crown Rubber Products (Crown Rubber) acquired Lot 50.

1954-1959: Crown Rubber operated a molded rubber product manufacturing operation in Building 2 on Lot 50. No records reflecting the continued existence of Crown Rubber after 1959 have been found.

1954-1964: The Tanatex Chemical Corporation (Tanatex) leases space in Buildings 1 and 3 on Lot 50. Tanatex operates a chemical dye-carrier manufacturing facility in Building 3, and maintains a research laboratory in Building 1 (second floor).

- Principal raw materials include: technical trichlorobenzenes and methylnaphthalenes. It is believed that dichlorobenzenes and biphenyl, as well as various surfactants and solvents are also used.

- Laboratory operations in Building 1 involved the use of multiple chemical formulations and included an applications laboratory that duplicated dyehouse operations. The lab was plumbed to a septic system, which discharged to a ditch leading from Building 3 to the Hackensack River.

- Tanatex uses an onsite rail-siding in its operations, as well as onsite chemical storage tanks. Production wastes are discharged via floor drains to several discharge outlets in the ground near Buildings 3 and 4.

1959: Crown Rubber sells Lot 50 to Keaton Rubber Company (Keaton). Keaton goes out of business in 1975.

1959-1962: Keaton operates a molded rubber products manufacturing facility in Building 2 and continues to lease Building 3, some of Building 1, as well as equipment, to Tanatex.

1962: Keaton sells Lot 50 to SCCC.

1962-1993: Manufacturing operations are conducted on portions of Lot 50 by SCCC and its subsidiary, Cloroben Chemical Corporation (Cloroben):

- **1962-1981:** SCCC stores and packages pure paradichlorobenzene solids (*i.e.*, moth balls and crystals) and bulk liquid orthodichlorobenzene in Building 2. Operations are discontinued in 1981.

- **1962-1993:** Cloroben formulates and packages drain-cleaner products in Buildings 3 and 4. The raw materials include: orthodichlorobenzene (not used after 1987), sulfuric acid, hydrochloric acid, methyl benzoate, terpene solvents and enzymes.

- **1993:** All SCCC manufacturing operations on Lot 50 are discontinued.

2.1.3 History of Owners, Operators, and Operations – Lot 32.01

Information regarding past ownership and operations on Lot 32.01 is limited. The Lot is approximately twenty-five feet (25') wide and bisects the SCCC Site as well as portions of the Seaboard Site to the south. The Lot formerly contained working rail lines associated with the former New York and Greenwood Lake Railroad. Sometime after rail use was discontinued and prior to 1993, Lot 32.01 was acquired by the Hudson County Improvement Authority (HCIA), but it does not appear to have been used for any industrial activities after HCIA's acquisition.

2.1.4 Current Ownership of SCCC Site

On October 10, 2010, the Town of Kearny, New Jersey completed a tax foreclosure on Lots 48, 49 50, 51, 52 and 52R and is now the owner of those portions of the SCCC Site. Lot 32.01 is currently owned by the HCIA.

2.2 REGULATORY HISTORY

In October 1989, the New Jersey Department of Environmental Protection (NJDEP) and SCCC entered into an Administrative Consent Order (ACO). This ACO required SCCC to plan and implement the following:

- Interim Remedial Measures to prevent potential contact with materials in the lagoon area and to secure damaged tanks and containers
- A Remedial Investigation and Feasibility Study
- Selected remedial alternative(s)

In response to the ACO, various investigative activities were conducted at the Site in the 1990s. A number of contractors were involved with assessments of the lagoons, near-shore river environment, onsite soils groundwater surface water, and sediment. These activities were in addition to Site characterization activities initiated prior to the ACO as discussed in Section 2.3.

In 1999, the NJDEP indicated that remaining RI activities could be completed concurrently with certain remedial activities. Hence, a Remedial Action Workplan (RAWP) was submitted to NJDEP in 2000 (Enviro-Sciences, Inc., November 2000), and a RAWP Addendum was submitted in May 2001 (Enviro-Sciences, Inc., May 2001). However, the NJDEP did not act on the either the RAWP or the RAWP Addendum, for various stated reasons including a lack of financial assurance. Subsequently, in October 2003, SCCC, Tierra, and Beazer formed the Peninsula Restoration Group (PRG) to jointly address the Site and to provide financial assurance.

In December 2001, NJDEP referred the SCCC Site to the USEPA for proposed addition to the National Priorities List (NPL). The NJDEP indicated that SCCC had not completed Remedial Investigation activities and was non-compliant with the terms of the 1989 ACO. On April 30, 2003, the USEPA proposed to add the Site to the NPL and the Site was subsequently listed on September 19, 2007.

In March 2004, a draft Interim Response Action Workplan (IRAW) was submitted to the NJDEP that outlined the initial plans to consolidate interim response actions with additional RI activities for the SCCC Site. The plan was not approved at that time, but the PRG undertook numerous activities that would keep the project moving forward, and which would ultimately be necessary prior to construction. The following activities were part of these efforts:

- Prepared and submitted an Interim Response Action Workplan, SCCC and Diamond Sites (March 2004)
- Completed an Asbestos and Lead Paint Survey for all buildings, SCCC Site (March 2004)
- Prepared and submitted a Workplan for Phase I Asbestos Management and Select Building Demolition, SCCC Site (June 2004)

- Completed a Wetlands Delineation, SCCC Site and Diamond Site (August 2004)
- Prepared and submitted a Pre-Design Investigation Work Plan, SCCC and Diamond Sites (October 2004)
- Prepared and submitted a Solidification Treatability Study Work Plan for the lagoon contents, SCCC Site (October 2004)
- Completed an Aerial Topographic Survey, SCCC and Diamond Sites (December 2004)
- Initiated demolition of certain non-process buildings, SCCC Site (January 2005)
- Removed asbestos from certain non-process buildings, SCCC Site (February 2005)
- Completed Waste Classification Determinations for Demolition Debris, SCCC Site (June 2005)
- Completed Offsite Disposal of Demolition Debris, SCCC Site (October 2005)
- Prepared and submitted a Proposed Scope of Work for Supplemental Remedial Investigation, SCCC Site (October 2005)
- Completed Numerical Groundwater Modeling, SCCC and Diamond Sites (June 2006)
- Prepared, submitted and responded to additional information inquiries concerning a Request to Utilize EPA's Area of Contamination (AOC) policy during implementation of the IRAW, SCCC and Diamond Sites (October 2006)
- Sampled the contents of the concrete vault on the SCCC Site, submitted a Request for a Waste Classification Determination, and transported and disposed of the vault contents, SCCC Site (October 2006)

The IRAW as approved by the NJDEP in March 2008 was finalized in October 2008 (KEY, October 2008). Pre-design data collection, permitting, and construction activities began shortly thereafter.

2.3 SITE INVESTIGATIONS

The physical and environmental conditions at the SCCC Site have been characterized through the completion of a series of investigations. Table 2-1 presents a timeline for the principal

historical investigations, regulatory actions, and remedial measures that have been conducted at the SCCC Site.

Each of the Site investigations has resulted in collection of data that were used to define Site conditions and to develop the remedial measures that are currently in place. The majority of the early investigations focused on the nature and extent of Site-related constituents in various media (i.e., lagoons solids/liquids, surface water and sediment, groundwater, or soils). The extent of DNAPL was defined on a preliminary basis in 1999 and additional delineation data were obtained as part of the 2009 pre-design investigation for the IRA.

The following table lists the principal investigations that were conducted at the SCCC Site prior to initiation of the IRA pre-design data collection effort in 2009. The dates the work was performed, the entity(ies) for whom the work was performed, the entity that performed the work, and the associated reports in which the results are presented are summarized in the table.

Date	Activity	For/By	Report
1983-1984	Hydrogeologic Investigation	SCCC/ Roy F. Weston	*Hydrogeologic Investigation, Standard Chlorine Chemical Company, Kearny, New Jersey* (Weston, January 1984)
1985	Phase II Dioxin Investigation	NJDEP/ E.C. Jordan	*Phase II Dioxin Site Investigation, Final Report* (E.C. Jordan, Inc. 1985)
1987	Stage 1Dioxin Investigation	SCCC/ Roy F. Weston	*Sampling and Analysis of Potentially Dioxin-Contaminated Materials in Waste Lagoons, Stage I Analysis Report* (Weston, 1987)
1988	Stage 2 and 3 Dioxin Investigations	SCCC/ Roy F. Weston	*Sampling and Analysis of Potentially Dioxin-Contaminated Materials in Waste Lagoons, Stage II and III* (Weston, 1988)
1991	Chromium Delineation	Maxus[1]/ French & Parrello	*Remedial Action Work Plan Addendum - 1015 Belleville Turnpike - Kearny, New Jersey* (Enviro-Sciences, Inc. May 2001) (in Appendix A).
1990-1993	Remedial Investigation/ Supplemental RI	SCCC/ Roy F. Weston	*Draft Remedial Investigation Report for the Standard Chlorine Chemical Company, Inc. and the Standard Naphthalene Products Inc. Properties, Kearny, New Jersey* (Weston, May 1993)
1996-1997	Focused Remedial	SCCC/ Environmental	*Focused Remedial Investigation (FRI) Report, Standard Chlorine Chemical Company, Inc. and*

[1] Some of the work at the SCCC Site has been conducted under an Administrative Consent Order dated April 17, 1990 entered by NJDEP with Occidental Chemical Corporation (OCC) and Chemical Land Holdings, (CLH) Inc. (now Tierra) relating to chromite ore processing residue (COPR) (the "Diamond ACO"). Maxus Energy Corporation (Maxus) historically had responsibility for overseeing work under the Diamond ACO for OCC, as successor to Diamond Shamrock Chemicals Company.

Date	Activity	For/By	Report
	Investigation	Resources Management	*Standard Naphthalene Products, Inc. Site, Kearny, New Jersey* (ERM, Inc., January 1997)
1997-1999	Supplemental Remedial Investigation	SCCC/ Key Environmental	*Supplemental Remedial Investigation Report, Standard Chlorine Chemical Company, Kearny, New Jersey* (Key Environmental, Inc., April 1999)
2000	Soil/Sediment Sampling and Analysis	SCCC/ Enviro-Sciences	*Enviro-Sciences, Inc., October 23, 2000, Letter to Maria Franco-Spera (NJDEP)*
2000	Characteriza-tion of Containerized Materials	SCCC/ Enviro-Sciences	*Enviro-Sciences, Inc., October 23, 2000, Letter to Maria Franco-Spera (NJDEP)*
2002	Surface Water and Sediment Sampling	EPA/ EPA Technical Assistance Team	*Sampling Report for the Standard Chlorine Site* (EPA, 2002)

In addition to the preceding investigations, investigative work was also conducted at the Site in 2009. The 2009 investigations were conducted by KEY on behalf of the PRG, and included the collection of pre-design data for the IRA as indicated by the approved IRAW as well as supplemental RI data to delineate the nature and extent of Site-related impacts in accordance with the December 2008 Supplemental Phase II RI Work Plan.

Figure 2-2 is a Site base map which depicts the locations of all the samples obtained during the investigations listed in the preceding table (excluding the containerized materials samples obtained in 2000). Figure 2-3 is a Site base map which depicts the locations of the pre-design and supplemental RI samples obtained in 2009 by KEY. The analytical results for the historical investigations are briefly discussed in Section 4 (Summary of Site Characterization Data).

2.4 INTERIM REMEDIAL MEASURES

In the early 1990s, a series of Interim Remedial Measures (IRMs) were completed by SCCC at the Site. The IRMs were completed in accordance with an NJDEP-approved work plan and consisted of the following tasks:

- Installation of security fencing surrounding the former production area and lagoons to prevent unauthorized access;

- Addition of soil to the lagoon berm to increase its height and freeboard to prevent potential overflows;
- Placement of stabilizing geotextile and rip rap along the Hackensack River shoreline in the vicinity of the lagoon;
- Removal of the contents of five above-ground storage tanks; and,
- Repackaging of the asbestos-containing material removed from the former distillation building.

To mitigate potential risk of human exposure to soil containing concentrations of total chromium exceeding 75 mg/kg (the NJDEP standard at the time), additional IRMs were implemented by Chemical Land Holdings (CLH) in February 1991 in the western and central sections of the SCCC Site. The COPR/soil IRMs implemented at the Site were as follows:

- Installation of an asphalt pavement overlay on traffic areas where existing asphalt pavement was present;
- Soils exceeding 75 mg/kg total chromium were covered with geotextile fabric overlain by 4 inches of dense graded aggregate, overlain by 4 inches of asphalt on all remaining traffic areas;
- An interim surface cover consisting of a geotextile/geomembrane liner overlain with 4 inches of dense graded aggregate was constructed in non-traffic areas west of Lot 32.01; and,
- A dust fence barrier was installed along Lot 32.01 and north fence line of the former northeast process area to control potential fugitive dust emissions from the former process and lagoon area.

Upon completion of these interim measures, several significant features remained on Site as shown on Figure 2-1. A number of former process or administrative buildings were present on Site and these buildings were designated for ultimate removal although several buildings with potential historic landmark status were to be retained pending a decision regarding their historic landmark status.

Prior to 1974, a tidal channel called Dead Horse Creek traversed part of the SCCC Site and the adjacent Diamond Site, and discharged to the Hackensack River. In the mid-1970s, a 48-inch reinforced concrete stormwater pipe was installed along the northern boundary of Lots 48 and 49 and Dead Horse Creek was filled with the approval and oversight of NJDEP. Stormwater entered the pipe via several manholes along its 2,000-foot length.

In 2008, the stormwater pipe located along the northern boundary of Lots 48 and 49 was upgraded (Brown and Caldwell, September 2008). The pipe upgrade was performed to mitigate the potential for migration of shallow groundwater into the manholes, sewer pipes, or the backfill materials, and hence eliminate this potential migration pathway. Manholes, lateral pipes, catch basins, and cleanouts were rehabilitated as part of this effort. In addition, four pressure-grouted cutoff dams (anti-seep collars) were installed in the bedding of the storm sewer.

2.5 INTERIM RESPONSE ACTION

As previously indicated, an IRA was completed for the Site from 2010 through 2011. The IRA was an extensive and complex multifaceted remedial response that has altered and significantly improved Site conditions. The IRA is discussed in detail in this section given that it is of critical importance with respect to mitigation of potential migration pathways and exposure routes for the Site. The primary remedial objectives of the IRA for the SCCC Site were as follows:

- Eliminate the potential for subsurface discharge of constituents to the Hackensack River;
- Eliminate the potential for overland runoff of constituents to the Hackensack River;
- Remove the DNAPL to the extent practicable as a source control measure; and,
- Eliminate the potential for direct contact with constituents.

The scope of the IRA as outlined in the NJDEP-approved IRAW (KEY, October 2008) as expanded and modified in an NJDEP-approved IRAW Addendum (KEY, March 2009) and as described in a corresponding USEPA-approved Engineering Evaluation/Cost Analysis (KEY, May 2009) consisted of the following components:

- Site Preparation Activities
- Physical Barrier Wall System
- Hydraulic Control System (Groundwater Collection and Treatment)
- DNAPL Recovery System
- Lagoon Dewatering, Backfilling, and Surface Cover
- Near Shore Sediment Management
- South Ditch Sediment Management and Stormwater Management System
- Consolidation Area Construction
- Wetland and Shoreline Mitigation
- Septic Tank Closure
- Transformer Pad Removal and Remediation
- Site Restoration
- Air Monitoring Activities

The IRA was implemented from 2010 through 2011 with start-up and shakedown of the groundwater treatment system commencing in early 2012. At the end of 2011, the PRG submitted an Interim Remedial Action Report (IRAR) to the NJDEP and USEPA to document the completion of the IRA (KEY, December 2011). Figure 2-4 shows the current (post-IRA) Site conditions. The remainder of this section provides detailed descriptions of the aforementioned IRA components. The following text has essentially been taken verbatim from the IRAR (KEY, December 2011). Where sampling and analysis of environmental media were performed in conjunction with the IRA, the analytical results are discussed in Section 4.

2.5.1 Site Preparation Activities

Prior to initiation of remedial action activities on the Site, several administrative activities were conducted. These activities included preparation of applications and the issuance/receipt of multiple permits/approvals. The permits/approvals were obtained and subsequent activities were conducted in accordance with the requirements of these permits/approvals in addition to the requirements of the IRAW.

Upon mobilization to the Site, engineering controls such as fencing, security, and hazard communication were implemented as part of the response action. Temporary security fencing was installed along the western side of the Diamond Site, adjacent to the Belleville Turnpike, to restrict public access to the active work area. Fencing was comprised of 6-foot high chain link fence with opaque geosynthetic material secured to the inside surface of the fence. Safety fences and barricades were also used to provide warning around open excavations and to secure the perimeter of work areas, as required, during remediation.

Erosion and sedimentation devices such as silt fence, straw bales, erosion control eels (coir log), stone barriers and stabilized construction access were utilized to minimize erosion and sediment runoff. Following remediation, mulch, straw and erosion control mulch blanket were placed on disturbed areas, as required. Disturbed areas were seeded by hydroseeding.

In addition to establishment of the administrative and engineering controls described above, several supplemental Site activities were required to prepare the Site for full-scale implementation of the primary IRA components. These supplemental activities consisted of the following:

- Temporary Construction Treatment System - A Temporary Construction Treatment System (TCTS) was assembled on Site to provide for treatment of potentially-impacted surface water and/or groundwater collected during the IRA construction-related activities. The TCTS was comprised of containment/treatment vessels, pipes, pumps, and treatment components to provide for the following:

    - pH control and hexavalent chromium reduction;
    - pH control and metals precipitation/flocculation;
    - Solids dewatering and management;
    - Dissolved organics removal via carbon adsorption; and,
    - Residual DNAPL separation via solids removal and carbon filtration.

  The system was constructed and operated in accordance with an NJPDES Permit No. NJG0175102. The TCTS was utilized to treat water obtained from the following:

- Groundwater collected from excavation activities;
- Water generated during remediation of the South Ditch;
- Standing water located within the lagoons; and,
- Decant or runoff water from active portions of the Consolidation Areas.

Discharge of treated construction-related water from the TCTS was initiated on October 2, 2010. Sampling of the effluent from the treatment system was conducted in accordance with the NJPDES permit and Monthly Discharge Monitoring Reports were submitted to the NJDEP. The TCTS was removed from service on November 30, 2011 and subsequently disassembled.

- Utility Protection, Relocation, and Abandonment - Existing utilities that once serviced facilities on the SCCC Site were no longer required and therefore were abandoned, or relocated, if necessary, to provide utilities for future operation of the HCTS. These existing utilities included the following:

  - Previously identified gas line (Public Service Electric and Gas Co. [PSE&G])
  - Overhead electric lines (PSE&G)
  - Potable water line
  - A previously unidentified gas line
  - Other historic water lines

  At the current time, all active utilities serving the Site are contained in waterproof underground conduits.

- Former Process Area Tank/Saddle Removal - Concrete tank saddles were removed, as required, to provide access to the work for construction of the IRAW remedial components. Removal of tanks and/or saddles that did not obstruct remedial construction activities are not part of the IRAW remedies were removed at a later date, in conjunction with subsequent building demolition activities.

- Vault Contents Management - Remediation was required for a small, shallow, below-grade concrete vault containing non-aqueous phase liquid (NAPL) located on Lot 51 within the central portion of the SCCC Site (See Figure 2-1). The material was characterized and a Waste Classification Request was submitted to, and subsequently approved by, NJDEP on June 12, 2008. The NAPL was subsequently removed from the vault and placed into 18 55-gallon steel drums. The sides and bottom of the vault were pressured-washed and the influent and effluent lines were sealed off using air plugs. The vault was secured via placement of a ½-inch thick steel cover, and then coved with a plastic tarp. The drums of NAPL and two additional drums of debris and used personal protective equipment were transported to an off-Site disposal facility. Four additional concrete vaults were subsequently discovered in the SCCC Consolidation Area. The vaults were approximately 3' x 3' x 2' in depth. The water in the vaults was pumped to the TCTS for treatment. The influent and effluent lines to the vaults were plugged, and the vaults were abandoned in-place using flowable concrete fill.

- Repair and Maintenance of Existing IRMs - Existing IRM cover systems on the SCCC Site were comprised of one of the following cover system types:
    - PVC geomembrane underlain and overlain by a geotextile fabric, and additionally overlain by a 4 to 6-inch+/-thick layer of aggregate;
    - 4-inch+/- thick layer of asphaltic concrete underlain by aggregate; or,
    - 6 to 18-inch+/- thick soil (vegetative) cover.

  Traffic haul routes were established prior to commencement of the remedial activities to minimize traffic on the existing IRMs. Nonetheless, in several locations, these IRMs required replacement/repair because of utility trench excavation, construction and use of temporary haul roads, etc. The PVC liner, where removed or damaged, was replaced with 60-mil linear low density polyethylene (LLDPE) geomembrane underlain and overlain with 10-ounce non-woven fabric, and subsequently covered with roughly 6 inches of aggregate. Damaged or removed asphaltic concrete was replaced in kind, and an asphalt sealer was applied to the seams between the old and new material. Excavations through soil IRMs were restored by replacement of the

soil cover with structural fill and topsoil. In areas where the contractor established haul roads, structural fill and/or coarse aggregate was installed to minimize rutting of the vegetative surface. When the haul roads were removed, a thin layer of the additional fill material was left in place, and then covered with at least 4 inches of topsoil. All existing IRMs that were disturbed or damaged during construction activities were replaced in kind.

- Monitoring Well Abandonment - In 2010, a total of 31 monitoring wells and piezometers that were located within the footprint of IRAW remediation activities were abandoned (Key, November 8, 2012), fifteen of which were located on the SCCC Site. The monitoring wells were abandoned by tremie grouting with cement-bentonite slurry, from the base of the well to ground surface. After the cement-bentonite grout cured, the top of the well casing was capped with concrete. A New Jersey-registered driller conducted the abandonment in accordance with the New Jersey Well Construction and Maintenance; Sealing of Abandoned Wells N.J.A.C. 7:9D, and submitted Well Abandonment Reports to NJDEP Division of Water Supply, Bureau of Water Systems and Well Permitting, as required.

2.5.2 Physical Barrier Wall System

The barrier wall system is comprised of a steel sheet pile (SSP) wall and a cement/bentonite slurry wall. Construction occurred in 2011 and was documented in the Interim Response Action Report (KEY, December 2011).

The sheet pile wall system was designed as a cantilevered retaining wall to provide for lateral earth support along the river shoreline. The limits of the SSP wall extended along the entire shoreline of the Diamond and SCCC Sites for an approximate horizontal length of 1,200 ft. The targeted depth of embedment (approximately 30 feet below ground surface) was selected based upon geotechnical calculations, to provide for structural stability.

The sheet pile wall was installed following excavation of a “starter trench” along the entire proposed length of sheet pile installation. The purpose of the starter trench was to remove riprap,

rubble, and other near-surface obstructions which could preclude or deflect the installation of the steel sheets, or otherwise potentially damage the steel sheets and/or coating. The new sheet pile wall system was physically connected to an existing sheet pile wall system on the adjacent Seaboard Site. The "transition sheet" between the two walls was selected to prevent electrical conductivity between the two installations and was therefore constructed of non-conductive HDPE material.

Following installation of the sheet pile wall, structural fill was placed behind (i.e., landward) the wall, to construct the working platform required for subsequent installation of the slurry wall. A concrete waler and capillary break were additionally constructed within the structural fill.

A total of three penetrations through the sheet pile wall were required to accommodate subsequent installation of stormwater culverts that would discharge to the Hackensack River (see Figure 2-4; Outfall 001, 002, and 003). These penetrations were accommodated by cutting circular holes in the sheet pile wall at the appropriate elevations, and welding a steel penetration sleeve to the wall. The hydraulic control system treated water discharge pipe was installed through the same penetration as the stormwater culvert at Outfall 001 (Figure 2-4). A cathodic protection system consisting of graphite anodes spaced approximately every 50 feet was installed to protect the sheet pile wall from salt water corrosion.

The slurry wall system was constructed to completely encircle both the Diamond and SCCC Sites, and a portion of the Seaboard Site, as shown on Figure 2-4. The depth of embedment was prescribed to provide a minimum key-in depth of three feet into the underlying varved clay unit (typically 20 to 25 feet below ground surface) and to contain groundwater in both the surficial fill unit and the underlying sand glacial unit. The actual depth of installation was determined via field measurements.

The slurry wall was comprised of a cement/bentonite mixture, which was established based upon a laboratory design mix study, using the same water source and/or materials as used for the in-field slurry wall installation. The slurry wall was installed by excavating along the proposed wall alignment while maintaining slurry within the trench to within one to two feet below the

ground surface, to maintain trench sidewall stability and prevent ground water from entering the trench. Following installation of the wall and a few days of curing, the slurry wall trench was capped with structural fill.

All slurry wall spoils removed from within the SCCC Site boundary were placed in the SCCC Consolidation Area. In addition, slurry wall spoil materials from the Seaboard Site and from a portion of the Diamond Site where organic constituents were present were emplaced in the SCCC Consolidation Area.

General quality control indicator tests such as viscosity, density, etc., were conducted throughout installation of the slurry wall. In addition, direct performance testing, including unconfined compressive strength (UCS) and permeability, were conducted on representative samples of the slurry material, to document conformance with the IRAW-specified requirements of a UCS of 3,000 psi or greater and a hydraulic conductivity of no greater than $1x10^{-7}$ cm/sec. The results of the performance testing on the initial installation demonstrate conformance with the specifications, with the exception of a 90-foot portion of the wall along the western end of the Diamond Site. This segment of the slurry wall was rejected primarily due to failure of the performance test results and also due observed heterogeneities in the slurry wall surface. This portion of the wall was rejected and subsequently replaced within the previously established alignment. Subsequent performance test results for the replacement slurry wall section were demonstrated to be in compliance with the project specifications. The top of the completed slurry wall was surveyed to document as-built conditions.

At certain locations where buried utilities (i.e., gas lines, water lines, electrical conduits, and stormwater culverts) crossed the slurry wall alignment, traditional slurry wall installation methods were utilized to establish contact between the slurry and the utility surface. More specifically, the area around each utility was pre-excavated and then backfilled with coarse aggregate. During slurry wall excavation, the aggregate (which was both cohesionless and significantly denser than the slurry) fell away from the utility, allowing the slurry to flow around and against the utility surface, providing a low permeability interface. Finally, at one location near the border between the Diamond and SCCC Sites, a hard buried structure was encountered

within the slurry wall alignment. Attempts to remove the structure were made, but its depth, apparent size, and proximity to the SSP wall precluded removal (there was the potential for the stability of the SSP wall to be compromised). Therefore, the soils around the structure were excavated and the slurry allowed to flow around and against the structure.

2.5.3 Hydraulic Control System

A hydraulic control system was installed to attenuate the anticipated rise of the water table within the barrier wall enclosure. The system is comprised of a Hydraulic Control Treatment System (HCTS) and a series of groundwater/DNAPL recovery wells that provide for the extraction of groundwater to reduce the water table elevations within the barrier wall system. Water extracted from the newly installed recovery wells is treated through the HCTS, which is comprised of the following general treatment components:

- Residual DNAPL separation
- pH control and hexavalent chromium reduction
- pH control and metals precipitation/flocculation
- Solids dewatering and management
- Dissolved organics removal via carbon adsorption

The treatment system is housed within a prefabricated steel building, which includes insulation and gas heat.

It was anticipated that the Meadow Mat beneath the treatment building would consolidate due to the loads imparted by the building and treatment system. Therefore, prior to construction of the HCTS building, the building location was preloaded in an effort to compress the underlying materials. The building site was loaded with a roughly ten-foot-high stockpile of 3/8-inch diameter aggregate for over two months. The stockpiles were subsequently removed and used for other aspects of the overall Site remedy.

The groundwater collection system is comprised of 26 recovery wells on the SCCC Site and on the adjacent Diamond and Seaboard Sites. The wells were installed to provide for groundwater extraction from the shallow fill unit and are connected via a header system to the HCTS. The actual locations of the wells and force mains were adjusted slightly, as required, in the field, to accommodate previously unidentified subsurface obstructions (e.g., concrete foundations, railroad tracks, etc.), and are shown on Figure 2-4. In locations where the utility trenches crossed existing IRMs, the IRMs were repaired or replaced with similar or better materials. Spoils obtained from installation of the wells and the buried force mains were collected and placed into the corresponding consolidation area on each respective Site, with spoils obtained from the Seaboard Site placed in the SCCC Consolidation Area.

It was determined during construction that the aggregate within the South Ditch backfill would provide an efficient supplemental means for drawdown of the water table within the slurry wall containment area. Therefore, an additional groundwater collection/conveyance trench was installed between the South Ditch backfill and recovery well HCWU-20. The trench was installed to enhance the drainage of any water that might accumulate in the aggregate backfill around the South Ditch culvert, and direct it to the groundwater recovery system. As with the other recovery wells, any water that is pumped from recovery well HCWU-20, including any water directed to it through the collection/conveyance trench, is pumped from recovery well HCWU-20 to the HCTS, for treatment.

Twenty eight piezometers were installed on either side of the slurry wall and will be used to evaluate the effectiveness of the hydraulic control system and to verify that the hydraulic control pumping rates are adequate for hydraulic containment. The piezometers were installed in seven clusters, monitoring the fill and the sand units, both inside and outside the slurry wall at the locations shown on Figure 2-4.

2.5.4 DNAPL Recovery System

A DNAPL recovery system was installed in conjunction with the hydraulic control system. The DNAPL recovery system consisted of a total of eleven (11) sand unit DNAPL recovery wells and five (5) fill unit recovery wells from which DNAPL is extracted. The wells were designed to

include screens and a sump to provide for effective in-well physical separation of groundwater and DNAPL. DNAPL that enters the wells is separated by gravity and accumulates in the solid-walled sump at the base of each well. Accumulated DNAPL is periodically removed by pumping. Groundwater extracted in conjunction with DNAPL recovery is directed to the HCTS for subsequent treatment. The locations of the DNAPL recovery wells are shown on Figure 2-4.

2.5.5 Lagoon Dewatering, Backfilling, and Surface Cover

The two lagoons located on the SCCC Site were located in an area designated for use as a portion of the SCCC Consolidation Area; as such, soft spots in the lagoon were stabilized, and geogrids were installed to provide sufficient strength to support the placement of materials in the Consolidation Area. The Consolidation Area, including the lagoons, was ultimately covered using a multi-layer system. These activities were completed pursuant to an approval letter issued by the USEPA on March 15, 2011 (USEPA, March 2011). After stabilization and geogrid installation, the lagoons were initially filled with sediments obtained from remediation of the South Ditch, and subsequently with spoils obtained from other on-Site remedial activities including utility trench excavation, river sediment removal, and the slurry wall installation. This placement sequence was in accordance with the NJDEP-approved IRAW and the like vs. like demonstration prepared pursuant to the USEPA Area of Contamination Policy.

In preparation for placement of materials in the lagoons, standing water within the lagoons was pumped to the TCTS. Upon removal of the water, the lagoon contents were qualitatively evaluated to determine the need for geotechnical enhancement of the lagoon surface, to improve overall bearing capacity, prior to placement of overlying fill materials.

West Lagoon - Based upon an evaluation of several relatively soft zones within the West Lagoon, it was determined that geogrids were required for surface improvement of the lagoon. As such, a design was prepared to incorporate the following surface improvement components, in ascending order:

- Placement of oversized aggregate in soft, low elevation areas
- Addition of cement to soft material displaced by the oversized aggregate

- Installation of one layer of 10 oz/sq yd non-woven geotextile fabric
- Installation of one layer of geogrid
- Placement of approximately 1.5 feet of solidified South Ditch sediments
- Installation of a second layer of geogrid
- Placement of an approximately one-foot thick layer of solidified South Ditch sediments

East Lagoon - Based upon an evaluation of several soft zones with in the East Lagoon it was determined that surface amendment of the sludges was required in limited soft zones along the perimeter of the lagoon and in the eastern portion of the East Lagoon. Three test areas along the perimeter were evaluated using an addition of 10 to 15 percent Portland cement additive for amending the lagoon contents to provide improved sub-grade support for subsequent geogrid installation and placement of overlying materials. Favorable results were obtained from the north, south and western perimeter soft zones. In a very limited portion of the East Lagoon, it was determined that surface improvement using cement alone was not sufficient to provide the desired subgrade support for the subsequent geogrid installation and placement of overlying materials. Therefore, additional studies were conducted to identify a surface improvement technique for these materials.

Additional bench scale testing was conducted on the aforementioned East Lagoon contents using a variety of candidate reagents, including but not limited to the following: calcium chloride; quicklime (calcium oxide); Quickcrete accelerator; detergent; pelletized lime; soap; sodium silicate; and activated carbon. Reagents were combined with lagoon materials in 5-gallon buckets, mixed, monitored for heat and volatile organic compounds (VOCs) via handheld Photoionization Detectors (PIDs), and allowed to cure for several days. Based upon a qualitative evaluation of the bench-scale study results, it was determined that both the quicklime and calcium chloride reagents had favorable solidification results.

Next, pilot-scale tests were conducted by applying the proposed reagents to two test areas on the surface of the lagoon, followed by mixing of the reagents into the lagoon contents with an excavator. After curing, the surface of the solidified lagoon contents was qualitatively evaluated for bearing capacity. The test results demonstrated that adequate bearing capacity, suitable for providing sub-grade support for placement of overlying materials, could be achieved by adding

10 to 15 percent by weight of calcium chloride. Therefore, calcium chloride was added at a rate of 10 to 15 percent by weight to the remaining East Lagoon contents that required amendment. The stabilization of the surficial soft lagoon contents was approved by the EPA in a March 15, 2011 letter.

Following surface improvement via reagent mixing, a design was prepared to incorporate the following surface improvement components, in ascending order:

- Installation of one layer of 10 oz/sq yd non-woven fabric
- Installation of one layer of geogrid
- Placement of approximately 1.5 feet of solidified South Ditch sediments
- Installation of a second layer of geogrid
- Placement of an approximate one-foot thick layer of solidified South Ditch sediments

2.5.6 Near-Shore Sediment Management

As proposed in the IRAW, near-shore river sediments were excavated to a distance of 50+/- feet from the sheet pile wall, and to a depth of three feet or to the surface of the underlying Meadow Mat, whichever was encountered first. Turbidity control provisions were installed in the river prior to excavation. These provisions included the installation of a row of temporary steel pipe piles approximately 55 feet outboard of the sheet pile wall and the attachment of a turbidity curtain to the piles in a manner that allowed the curtain to rise and fall with the tidal cycles. A curtain was also attached at each end of the targeted excavation area, between the sheet pile wall and the steel pipe piles. These curtains provided separation between the individual excavation areas and backfill areas. In addition, a floating sorbent boom was installed along the top of the turbidity curtains.

Prior to excavation, the surface of the existing sediments were surveyed. Sediments were then excavated with a long-reach excavator, which was located on the working platform adjacent to the sheet pile wall. In most cases, sediments could be readily removed with the standard excavation equipment. However, in certain areas where the river floor was deep, the excavator

reach was not sufficient to provide for sediment removal to a full distance of 50 feet outboard of the wall. When this occurred, the contractor modified the excavator bucket by providing a steel extension on the bucket face. The approximate limits of sediment removal are shown on Figure 2-4. The only exception to comprehensive sediment removal occurred in a small area along the Diamond Site shoreline where an historic dock, constructed with concrete supports, was identified. The concrete supports were left in place because they could not be removed with the excavator.

Following the removal of sediments the excavation limits were surveyed. A non-woven geotextile fabric was then installed over the footprint of the excavation. The area was backfilled with granular backfill to a height of roughly four inches above the initial grades, to offset potential settlement of the backfilled materials.

Because the IRAW initially included provisions for both intertidal and sub-tidal shallows and wetland mitigation in portions of the restored riverfront, the excavation area was backfilled with either of the following:

- 3/8-inch diameter aggregate in areas closer to the 50 foot excavation limit (i.e., the area originally proposed for mudflat restoration); or,
- A mixture of 50 percent sand and 50 percent structural fill in areas between the sheet pile wall and the proposed mudflat area (i.e., the tidal area proposed for wetland planting).

However, upon survey of the existing sediment surface prior to excavation, it was determined that that the surface had changed significantly since the prior survey (conducted before the wetland restoration design was prepared) and therefore construction of a tidal emergent wetland in the shoreline area was determined to be infeasible. As such, the PRG entered into an agreement to purchase off-Site wetland credits, in lieu of construction of the proposed tidal emergent wetland. Finally, and because the tidal emergent wetland was not constructed, the concrete revetment system specified for protection of the proposed wetland planting area was not required, and therefore not installed in the river.

Excavated sediments were loaded into sealed dump trucks for transport to the Consolidation Areas. Sediments excavated from along the shoreline of the SCCC Site were consolidated within the SCCC Consolidation Area. Sediments excavated from along the shoreline of the Diamond Site were consolidated within the Diamond Consolidation Area, with the exception of a small area where previous sampling and analyses suggested the presence of constituents related to the SCCC Site (i.e., chlorinated benzenes). These sediments were consolidated in the SCCC Consolidation Area, in accordance with an NJDEP and USEPA-approved "like versus like" demonstration based upon the USEPA Area of Contamination policy.

In general, the gradation of the excavated sediments released minimal decant water following placement within the Consolidation Areas. Decant water that accumulated within the Consolidation Area containment berms was removed, as necessary, and pumped to the TCTS for treatment. In addition, cement was added to the sediments, as needed, to increase the bearing capacity of areas that were determined to be excessively soft.

2.5.7 South Ditch Sediment Management and Stormwater Management System

As part of the IRA, the existing stormwater management system was improved. The existing stormwater sewer and outfall to the Hackensack River located between the Diamond Site and the SCCC Site were retrofitted with a new catch basin and new Outfall 003. The existing stormwater sewer associated with Outfall 002 is located on the Diamond Site and was constructed as part of the IRA. The South Ditch is located along the southern boundary of the SCCC Site and, as part of the IRA, a new storm sewer system and Outfall 001were installed along the alignment of the former South Ditch. The locations of the outfalls are shown in Figure 2-4. The two upgraded storm sewer systems comprised:

- Several catch basins with openings (grates) at the ground surface
- Fusion-welded HDPE conveyance piping between the catch basins
- New outfalls to the Hackensack River

Installation activities associated with replacement/installation of the culverts and catch basins for Outfall 002 and 003 were fairly straightforward, and spoils resulting from the excavations were placed into the respective Consolidation Areas. Retrofit of the South Ditch with a much more extensive network of catch basins and culverts required additional provisions. Prior to excavation, stormwater controls were installed and South Ditch sediments were conditioned in place. Earthen berms were used to segregate the upstream and downstream limits of the active remediation area. South Ditch sediments were conditioned by adding up to 10 percent Portland cement (by weight) to the in-situ sediments, or more depending on the localized conditions. Cement was mixed with an excavator to a depth of roughly one foot below the proposed bottom elevation of the pipe bedding, except for areas where Meadow Mat was observed within the excavation.

South Ditch sediments and additional excavated soils required for installation of the related upstream stormwater management system were placed into the East and West Lagoons within the SCCC Consolidation Area. Excavation depths were surveyed to confirm that the required sediments were removed, and additional surveying was subsequently conducted to demonstrate that the designed pipe inverts and catch basin inlet elevations had been achieved.

The culverts were constructed of smooth-walled HDPE pipe. Most of the culvert sections were welded using butt-fusion methods; however, electrofusion collars were also utilized, as required, where access into the trench for butt-fusion welding was difficult. Catch basin inlets were comprised of prefabricated HDPE structures that were welded to the HDPE culvert barrels, with the exception of Catch Basin CB-17, which was constructed of pre-cast concrete.

Following completion of culvert installation the culverts were visually inspected where possible and additionally tested using a hydrostatic pressure method. More specifically, each test section of the culvert assembly was isolated from the rest of the system by installing an inflatable plug (i.e., “pig”) within both ends of the test section. Temporary risers were then installed on each catch basin within the test section, such that at least two feet of hydrostatic head could be provided above the water table and the top of the pipe on the test section. The hydrostatic pressure test was then conducted by filling the culvert and catch basins to the required height,

and by monitoring the level of the water to determine if leakage was present. A water level drop of less than 0.2 gallons per inch in diameter per 100 feet of pipeline per hour was considered a passing test.

With the exception of the test section between Catch Basins CB-7 and CB-8 (shown on Figure 2-4), all other test sections of the culvert system achieved passing test results. However, between Catch Basins CB-7 and CB-8, a separation in one of the butt-fusion welds was observed. Because this section of the culvert was already backfilled, exposure of the failed weld and repair with an electrofusion collar was considered to be problematic. Therefore, this section was repaired with an internal pipe sealing. Following completion of the repair this section of the culvert system was hydrostatically tested and achieved passing test results.

Following completion of excavation of South Ditch sediment and soft soils, a woven geotextile fabric was placed along the entire excavation bottom and sidewalls. Bedding material consisting of at least a 6-inch-thick layer of ¾-inch diameter aggregate was then placed prior to installation of the HDPE stormwater culvert. The excavation was backfilled to the mid-line of the culvert using ¾-inch diameter aggregate. An additional layer of woven geotextile fabric was then placed over the culvert and onto the ¾-inch diameter aggregate. Additional aggregate backfill was then placed up to the crown of the culvert. A capillary break layer consisting of a 6-inch thick layer of 1.5-inch diameter aggregate underlain and overlain with a non-woven fabric was installed in the drainage ditch remediation area. The capillary break layer was installed to the limits of the existing adjacent IRMs and to the Seaboard Site capillary break. Structural fill and topsoil were installed above the capillary break, to meet final surface design grades as applicable.

Because Meadow Mat was exposed during excavation for culvert installation near Outfall Nos. 1 and 2, there was concern that future consolidation of this near-surface layer could compromise the integrity of the proposed stormwater management appurtenances. As such, the PRG submitted to the NJDEP correspondence indicating its intention to incorporate a design change for this condition. Based upon this revised design approach, the Meadow Mat at these locations was removed and replaced with low permeability cement bentonite slurry. The hardened slurry

provides a vertical barrier to migration from the fill unit to the underlying sand unit, while providing significantly less consolidation potential than the previously removed Meadow Mat.

2.5.8 Consolidation Area Construction

The Consolidation Area (CA) was used for on-Site consolidation of sediments, soils, and spoils generated during various remediation activities and was planned and approved in accordance with the USEPA's Area of Contamination Policy. A "like versus like" demonstration was completed to demonstrate the consistent and contiguous nature (where necessary and appropriate) of the materials planned for consolidation and the demonstration document was approved by both the NJDEP and the USEPA. The following materials were placed in the CA:

- Excavated South Ditch sediment;
- Excavated river sediment;
- Slurry wall spoils;
- Stormwater management system excavation spoils;
- HCTS groundwater and DNAPL recovery well cutting; and,
- HCTS conveyance and utility trench installation spoils.

In general, spoils, sediments, and soil materials removed from within the SCCC Site boundary were placed in the SCCC Consolidation Area. Exceptions to this program were made for portions of the slurry wall installed on the Diamond Site and river sediments removed from the Diamond Site shoreline that were compatible with SCCC material profiles. Materials resulting from the IRA activities conducted on the Seaboard Site (i.e. slurry wall installation, HCTS utility trench installation, and portions of the South Ditch sediment excavation), were placed in the SCCC Consolidation Area. Finally, residual bentonite slurry remaining on-Site after completion of the slurry wall installation was solidified with Portland cement and subsequently placed in the SCCC Consolidation Area.

Materials were placed in the Consolidation Area and spread in lifts, then subsequently compacted to provide adequate bearing capacity prior to cover system installation. Following placement of all consolidated materials, a cover system was installed. With the exception of the

northwestern portion of the SCCC Consolidation Area, the cover systems were comprised of the following, in ascending order:

- Non-woven geotextile fabric;
- 60-mil linear low-density polyethylene (LLDPE);
- A geosynthetic drainage layer with overlying, thermally bonded, nonwoven geotextile fabric;
- An 8-inch-thick layer of structural fill; and,
- A 4-inch-thick layer of topsoil.

For the northwestern portion of the SCCC Consolidation Area, the final surface grades were considered to be slightly too steep for installation of a smooth LLDPE geomembrane. Therefore, a textured LLDPE geomembrane was installed instead. The textured geomembrane provides greater interface friction and therefore provides additional resistance against sliding of the overlying materials on the underlying geosynthetic materials. An additional layer of non-woven geotextile fabric was also installed between the geomembrane and the geosynthetic drainage layer in this northwestern portion of the SCCC Consolidation Area.

Before installing the final surface cover materials, perforated infiltration collection piping was installed around the perimeter of the Consolidation Area to manage stormwater infiltrating through the surface cover. The infiltrated stormwater on the SCCC Site discharges to Catch Basin No. 14. Figure 2-4 shows the limits and current elevations of the SCCC Consolidation Area.

2.5.9 Wetland and Shoreline Mitigation

As part of the approved IRA efforts, approximately 1.65 acres of wetlands were disturbed. The wetlands consisted of approximately 0.06 acres of emergent tidal wetlands, 0.47 acres of isolated wetlands, and 1.12 acres of freshwater wetlands. Approximately 1.4 acres of intertidal subtidal shallows (mudflats) were disturbed as part of the near-shore sediment removal discussed in Section 2.5.6 above. To offset the disturbance, NJDEP permits and USEPA approval were obtained to restore the wetlands and mudflats as generally proposed in the IRAW and more

specifically defined in the Shoreline Restoration and Tidal Emergent Wetland Mitigation Plan (WMP) (KEY, April 28, 2010). The initially proposed mitigation components were to include the following:

- Tidal Emergent Wetlands (0.45 acres)
- Intertidal Sub-tidal Restoration (0.95 acres)
- Freshwater Emergent Wetlands (1.20 acres)

As discussed in Section 2.5.6, upon survey of the existing river sediment surface prior to excavation, it was determined that the surface had changed significantly since the prior survey and, therefore, construction of tidal emergent wetland in the shoreline area was determined to be problematic. As such, in April 2011 a proposal to modify the wetland mitigation approach was formally presented to USEPA and NJDEP. Within the April 2011 proposal was a concept to replace the on-Site tidal emergent wetland creation with a combination of the purchase of 0.225 acres of off-Site credits from a mitigation bank and a total of 1.3 acres of mudflat restoration. An update to both USEPA and NJDEP was provided regarding securing the off-Site credits and accepted by both regulatory agencies. On September 30, 2011, the PRG entered into an agreement to purchase 0.225 acres of off-Site wetland credits from Evergreen Environmental LLC at the Marsh Resource (MR) 3 Wetland Mitigation Bank located within the Hackensack Meadowlands. A more detailed discussion of the implemented wetland restoration activities is as provided in the following paragraphs.

Tidal Emergent Wetland Mitigation/Mudflat Restoration **-** A detailed discussion of river sediment removal, restoration, and management was previously provided in Section 2.5.6. As it relates to mitigation, mudflats were restored during the sediment excavation activities. A final as-built survey was completed, which identified the total mudflat restoration area of 1.41 acres, which is in excess of the required 1.30 acres. Regulatory approvals for the MR 3 wetland mitigation bank were received in 2011. The Group received its 0.225 credits in June 2012.

Freshwater Emergent Wetland Mitigation **-** As per the WMP, 1.20 acres of freshwater emergent wetland mitigation was proposed for the former South Ditch area, within the SCCC and

Seaboard Sites. After installation of the South Ditch culvert system and placement of the overlying soils, the available limits of potential wetland mitigation were surveyed to confirm that the required acreage could be achieved within the initially proposed area and with desired planting elevations of between +4.0 mean sea level (msl) and +4.5 msl. Because the available area was somewhat narrower than anticipated during design of the mitigation plan, the coverage was further extended into the following two areas, to provide the required mitigation acreage:

- The former narrow drainage channel located just west of the SCCC CA
- The drainage area upstream of the South Ditch sediment removal area, between Catch Basin Nos. CB-7 and CB-1

Within the areas slated for planting, a silty organic soil was placed to meet the approximate surface design grades. After installation of the planting soils, the areas were then planted with the specified species and a goose fence was installed to deter geese from consuming the plants during the winter season. After planting had been completed, these areas were hydroseeded, and straw was then placed for erosion protection. A final as-built survey was completed which identified the total wetland area as 1.28 acres, in excess of the required 1.20 acres. Post-installation monitoring of the wetland mitigation areas is performed in accordance with the WMP.

2.5.10 Septic Tank Closure

Multiple septic tanks existed at the property and the tanks were closed during the course of the IRA. A total of ten septic tanks were ultimately identified via visual inspection and exploratory excavation in areas where septic tanks were suspected to exist. The tank contents were sampled and analyzed (solids and liquids) for volatile organics, semi-volatile organics, metals including hexavalent chromium, dioxins/furans, and TCLP to characterize the contents for disposal/treatment purposes. The tank corners were located, as were the influent and effluent lines. The orientation of the tanks and the tank volumes were also identified. Solid tank contents were removed from the tanks via vacuum truck and were transported and disposed offsite. Liquid contents were managed in the onsite treatment system (TCTS). Tanks were pressure washed using potable water and rinse water and sludges were staged onsite in frac tanks

for offsite disposal. It was originally planned that the tanks would be over-excavated and removed for offsite disposal but ultimately the tanks were closed in place using flowable fill (low slump concrete grout). These activities were completed pursuant to an approval letter issued by the USEPA on March 15, 2011 (USEPA, March 2011). Upon closure, borings were completed around the perimeter of the septic tanks on all four sides (except where buildings existed within 1.5 feet of the tank) to determine if any releases from the tanks had occurred historically and to characterize the nature of the subsurface materials in the vicinity of the tanks. Samples were obtained from an interval six to twelve inches below the bottom of the tank.

2.5.11 Transformer Pad Removal and Remediation

In accordance with Section 3.7 of the IRAW and pursuant to a USEPA Region 2-approved self-implementing PCB remediation plan (KEY, September 2010), a former concrete transformer pad and underlying soils located adjacent to Building 2 on the SCCC Site were remediated. Remediation of the transformer area was conducted in five separate phases between March and November 2011.

The IRA contractor initially removed the concrete pad (March 2011) and underlying fill/soil (April 2011) from a 12 foot x 20 foot area (240 square feet) that included the concrete pad as well as an adjacent 5 foot x 20 foot (100 square feet) paved area immediately north of the pad. Approximately 16.3 cubic yards of the underlying fill and soil were excavated and seven post-excavation confirmatory samples were collected as required by USEPA Region 2. Three samples were collected from the former pad location and four samples were collected from the outlying paved area. These samples, and all subsequent samples, were sent for analysis to an NJDEP-certified laboratory (TestAmerica Laboratories in Edison, NJ) for PCB analysis. Aroclor 1260 was the only PCB detected in any of the samples.

Once the analytical results were received they were reviewed and it was determined that removal of additional material was necessary to attain the Toxic Substances Control Act (TSCA) cleanup goal for PCBs of 1 mg/kg. Additional removal and confirmatory sampling and analysis were conducted in three additional phases, contingent upon the results of each successive

removal/confirmatory sampling action. A summary of the volume of fill/soil materials removed, the number of confirmation samples obtained, and the PCB concentration ranges is as follows:

Volume Removed (Cubic Yards)	Sampling Date	Number of Samples	PCB Concentration Range (mg/kg)
~12.6	04/11/2011	7	0.22 -1,600
~15.9	06/02/2011	7	0.1 - 810
~10.4	08/23/2011	5	0.28 – 75
~5.6	09/27&10/12/2011	3	0.049 – 0.68

The final confirmation sample results for PCBs (collected on August 23, 2011; September 27, 2011, and October 12, 2011) ranged from 0.049 mg/kg to 1.2 mg/kg. To determine if the cleanup goal was obtained, a statistically valid procedure was used (in accordance with TSCA requirements) to determine a representative concentration for the former pad area. Specifically, the Upper 95% Confidence Limit (UCL) on the mean concentration was determined (excavation continued until the PCB UCL concentration was below 1 mg/kg).

The total volume of fill/soil removed was approximately 44.5 cubic yards. In addition, a total of approximately 8.5 cubic yards of concrete, concrete block, and asphalt rubble were removed. As the excavation progressed, water was encountered and dewatering operations were also conducted to facilitate excavation. Pumped water was containerized, characterized, and shipped for offsite disposal at a TSCA-approved facility. Rubble and excavated soils were also shipped for offsite disposal at a TSCA-approved facility. Water was transported to the Clean Harbors Spring Grove Facility in Cincinnati, Ohio. Solids (rubble and soil) were transported to Chemical Waste Management's Facility in Model City, New York. On October 20, 2011, the transformer area was backfilled to original grade with 3/8-inch stone and an 80-mil textured liner.

Stone was placed to raise grade above the water table and the liner was installed. Additional stone was then placed to raise the grade to that of the adjacent concrete foundation wall (i.e., the original elevation of the pad). The northern portion of the excavation (outside the foundation wall) was also backfilled with stone and lined. Coarser stone (3/4-inch) was placed in the base of the northern excavation area (approximate 3 foot depth). An additional 2 to 3 feet of 3/8-inch stone was placed to raise the grade above the water table. An 80-mil textured liner was installed,

additional 3/8-inch stone was placed to raise grade to 4 inches below the adjacent asphalt surface, and 4 inches of asphalt were placed. An as-built drawing was prepared which depicts the limits of excavation and backfilling information (as well as the analytical results).

2.5.12 Site Restoration

Topsoil was placed over areas that received structural fill, in order to enhance vegetative growth. Seed and mulch were placed on most areas that were restored to final condition prior to November 15, 2011 (i.e., the end of the planting season). The topsoil was first tilled/loosened and then fertilized. Following this seedbed preparation, the topsoil areas were then drill-seeded, and straw was then spread and secured in place using a tackifier. Areas that did not receive seed and mulch prior to November 15, 2011 were not suitable for planting in the 2011 growing season and therefore were seeded and mulched in the 2012 growing season. In the SCCC CA channels, seed was placed and an erosion control mat was then installed, to provide for additional stabilization of the channel lining.

Existing IRMs and asphaltic concrete that was disturbed by remedial activities were repaired in kind. Temporary soil erosion and sediment control appurtenances were inspected and repaired, as necessary. Excess construction materials were removed from the Site, and temporary facilities (e.g., construction trailers, the TCTS components, construction equipment, etc.) were demobilized from the Site.

2.5.13 Air Monitoring Program Activities

Perimeter ambient air monitoring was performed in accordance with the NJDEP-approved Air Monitoring Plan (AMP) for the Site. Five air monitoring stations situated upwind, downwind, and crosswind of the work areas collected dust and VOC measurements each day of IRA-related activities. Data were then presented in a graphical format showing results from each monitoring station compared to daily action levels. While there was some variability in the results, daily action levels were not exceeded except for a few short periods of time as corrective actions were being implemented or due to equipment or weather-related issues. Action levels for dust and

VOCs were developed and specified within the NJDEP-approved AMP. The results of the air monitoring program were reported to the NJDEP in biweekly reports.

2.6 REMOVAL ACTION

A removal action was completed in 2010 in response to a consent order entered into with the USEPA. Specifically, the removal action was completed pursuant to paragraph 47 of an Administrative Settlement Agreement and Order on Consent for Removal Action entered into between the USEPA, SCCC, and Beazer dated June 7, 2010. The removal action consisted of sealing of existing buildings located in the northeastern corner of the SCCC Site. The work was conducted in accordance with an approved work plan dated June 16, 2010 (KEY, June 2010). Completion of the removal action was documented in a final report dated December 21, 2010 (KEY, December 2010) and an Administrative Order Notice of Completion was issued by the USEPA on January 20, 2011.

2.7 ADDITIONAL RESPONSE ACTIONS

Several additional response actions have been conducted at the SCCC Site. These additional response actions consisted of demolition of various buildings (including those that were sealed in response to the removal order discussed in the preceding section) with attendant removal of the construction debris and asbestos-containing materials, and the removal of drummed (containerized) materials generated during historical abatement and investigation activities completed at the Site. These additional response actions are discussed in the following subsections.

2.7.1 Building Demolition and Debris Disposal

Demolition of all structures except historical structures associated with the former operations of Thomas A. Edison, Inc. (Buildings 1, 2, 3 and 4) has been completed. The demolition of the structures was completed in three separate phases designated as Track 1, Track 2, and Track 3. NJDEP-approved work plans were prepared for each phase of the demolition work (KEY, March 2010; KEY, May 2010; and KEY, June 2011). Various waste classification efforts were

completed for various building materials (e.g., wood, glass, brick, concrete, insulation) to support ultimate disposal of the demolition debris. Upon completion, each phase of demolition was summarized in a Demolition Remedial Action Report that was submitted to the NJDEP (KEY, April 2011; KEY, March 30, 2012; KEY, April 30, 2012 and KEY, May 17, 2012).

The locations of the former buildings are shown in Figure 2-4. The ground surface around the former structures was covered with coarse aggregate, covered with a non-woven geotextile fabric and another layer of aggregate. Where impacted by demolition, the existing Site cover material from the earlier interim measures was restored. The buildings were unused and most were severely dilapidated prior to demolition.

Required permits were obtained from the Town of Kearny prior to demolition. Erosion and sedimentation controls were installed prior to the onset of work. Real-time perimeter and work zone dust and VOC air monitoring was conducted throughout the entire demolition period.

All structures were surveyed for the presence of asbestos-containing materials (ACM) and lead paint prior to removal. Asbestos abatement was completed by licensed contractors and began with the removal of friable ACM-insulated pipes, transite panels and window frame caulk. Real-time perimeter and work zone air monitoring for asbestos fibers were conducted throughout the abatement work.

After asbestos abatement was completed, each structure was inspected for other hazards. Where materials remained in sumps or other structures, the residues were removed for disposal and the area cleaned with high pressure wash. Cleaned sumps were left in place and backfilled.

Demolition was conducted using mechanical methods. Metal objects such as trusses were torch cut into manageable pieces. Construction and demolition debris, consisting of wood, glass, brick, concrete blocks and concrete equipment pedestals, was placed in waste disposal containers for off-Site disposal. Concrete floor slabs were left in place in accordance with the approved work plans. Pipes extending below grade were filled with flowable grout and sealed with a concrete cap if no visual evidence of contamination was observed.

Scrap metal was sized, placed into roll-off containers and shipped directly to a smelter steel mill for recycling. Lead window and door flashing was recovered and shipped to an intermediary prior to ultimate smelting. General construction and demolition debris was containerized and stored in roll-off containers during the demolition. Upon completion, these materials were transported to an off-Site landfill. Mixed metal and debris wastes were similarly handled. Asbestos-containing materials were handled separately. These materials were containerized and transported to an approved asbestos disposal facility. Water collected from rinsing and washing of tanks and equipment was also containerized. The water was sampled for VOCs, semi-volatile organic compounds (SVOCs), and metals and was ultimately sent to the HCTS for treatment.

Non-hazardous solids and liquids recovered from sumps were segregated and drummed. Drums were shipped to off-Site treatment and disposal facilities. Non-hazardous debris and rust materials that were not evident prior to the onset of demolition were scraped into drums, sampled for constituents of concern (chlorobenzenes, naphthalene and PCBs) and disposed of accordingly. Dielectric fluids recovered from electric components were drummed, sampled for PCBs, and shipped off-Site for appropriate disposal.

2.7.2 Disposal of Containerized Materials

Various asbestos-abatement materials and investigation-derived waste had been previously containerized and stored at the SCCC Site in six SeaLand containers. The contents of the containers were sampled for characterization purposes in accordance with a NJDEP–approved Site-Specific Sampling and Analysis Plan (KEY, April 2008). Waste Classification Determination Letters were obtained from NJDEP for each type of materials which were categorized as Groups A through V. Based upon the available analytical data, supporting information, and the NJDEP-issued Waste Classification Determination letters for each Group, waste profiles were prepared. Eight overpacks were needed for transportation of drums observed to be in questionable condition. A total of seven material shipments were made to ChemTron's off-Site disposal facility in Avon, Ohio.

3.0 PHYSICAL SETTING

The SCCC Site occupies an area of approximately 25 acres within the Town of Kearny, Hudson County, New Jersey. The SCCC Site occupies Block 287, Lots 32.01, 48, 49, 50, 51, 52, and 52R. The SCCC Site parcels formerly owned by SCCC or its subsidiary SNP (Lots 48, 49, 50, 51, 52 and 52R) are currently owned by the Town of Kearny; HCIA owns the former rail right-of-way parcel that bisects the SCCC Site (Lot 32.01).

The Site is bounded by the Hackensack River to the northeast, Belleville Turnpike to the southwest, the Diamond Site to the north and northwest, and the Seaboard Site to the southeast. Railroad tracks were formerly present at the southwestern corner of the Site. A north-south trending former rail spur, which is currently owned by the HCIA, is located west of the former lagoon area.

3.1 HISTORICAL CONDITIONS

As described in greater detail in Section 2.0, manufacturing operations were conducted at the Site by various entities between 1916 and 1993, and included: the refining of naphthalene; the distillation and separation of dichlorobenzenes; the manufacture of products from naphthalene, naphthalene derivatives and dichlorobenzenes; the formulation of drain cleaning products; the production of chemical dye carriers; lead-acid battery production; molded rubber products manufacturing; and, on a limited basis during the 1970s, the processing of trichlorobenzene.

The manufacture of lead-acid batteries, dye-carrier products and rubber products all occurred on Lot 50 at the Site. The naphthalene refining operations were conducted on Lot 49. The manufacture of dichlorobenzene products and the formulation of drain cleaning products occurred on Lots 50 and 51. Activities associated with dichlorobenzene separation and dichlorobenzene and trichlorobenzene distillation/processing occurred on Lots 49 and 52 of the Site (Weston, May 1993 and KEY, October 2008). Lot 48 activities appear to have been limited to finished products packaging and storage throughout the Site history. Lot 32.01 only appears to have been used historically for a rail spur line.

Other industrial activities such as lead-acid battery production, rubber product production, and dye carrier production were conducted on the western portion of the property (Lot 50). All active processing activities on the property ceased by 1987 (Weston, May 1993); however some blending and production activity continued on Lot 50 until 1993. Figure 2-1 displays the historical condition of the Site prior to implementation of the IRA (i.e., as of 2008). The locations of various buildings, building slabs and foundations, fences, the east and west lagoons, existing emergent freshwater wetlands, a storm drain, and various IRM areas are depicted on this historical Site conditions figure.

3.2 CURRENT CONDITIONS

At the current time (2012), Site conditions differ markedly from those previously depicted on Figure 2-1. Figure 2-4 presents the current conditions including remaining buildings, a new building (i.e., the HCTS building), the Consolidation Area, additional cover material areas, wetland areas, vegetative cover areas, the slurry wall and sheet pile wall locations, cathodic protection anode well locations, recovery well and piping locations, etc.

As of the date of this report, the Site has been affected by Hurricane Sandy which struck the New Jersey/New York metropolitan area in late October 2012. Much of the property was inundated with the tidal surge associated with the storm although damage was minimal. The HCTS building and equipment were not affected given the elevation of the plant above the remainder of the Site and as a result of the presence of the containment berm (elevation = 10.5 ft msl). Most of the electrical control boxes on the individual recovery wells were affected by infiltration of sea water and fine-grained debris. Assessment, cleaning, and drying began on October 31, 2012. By November 6, 2012, the treatment plant was back on-line with a limited number of operational recovery wells. Repair of the remaining recovery wells is ongoing.

The Consolidation Area cover was also affected by the storm. Minor rill erosion was observed and scarifying, topsoil application, and reseeding are planned. One localized area (5 by 6 feet) of gully erosion (approximately 1 foot deep) was noted in the southeast corner of the CA. Repairs are ongoing. A report documenting the repairs following Hurricane Sandy is being prepared and will be submitted to EPA under separate cover.

3.3 SURROUNDING LAND USE

The SCCC Site is located along the tidal portion of the Hackensack River. Land use in the general vicinity is industrial, commercial, and/or used as transportation corridors. There are no nearby residential areas. The nearest residential area is in Jersey City, more than one mile away from the SCCC Site and on the opposite side of the Hackensack River.

North of the SCCC Site is former industrial property once operated by Diamond Shamrock and known as the Diamond Site, which is currently unused, but two vacant structures remain. South of the SCCC Site is another former industrial property known as the Seaboard Site, which is currently vacant except for some dredge material processing occurring at the far eastern end of the Seaboard Site, approximately 1 mile away from the SCCC Site. East of the SCCC Site is the Hackensack River while west of the Site is Belleville Turnpike and various outlying industrial properties.

3.4 SURROUNDING WATER USE

The Site is located in a former meadow that was filled in at the beginning of the 20th century. The tidal Hackensack River forms the eastern Site boundary. The entire Site lies within the 100-year floodplain of the Hackensack River (EDR, May 5, 2008). Prior to the completion of the IRA at the Site, there was a drainage ditch on the southeastern portion of the Site that received drainage from a partially filled marsh. In addition, other drainage ditches had received runoff from local roads, railroads, and former process areas. All surface drainage at the Site historically made its way into the Hackensack River via a series of surface ditches or via a storm sewer located along the northern Site boundary.

The Hackensack River adjacent to the SCCC Site is classified as SE2. This classification applies to saline estuarine water with the following designated uses:

- Maintenance, migration and propagation of the natural and established biota
- Migration of diadromous fish

- Maintenance of wildlife
- Secondary contact recreation
- Any other reasonable uses.

The Hackensack River in the Site vicinity is tidally influenced. A tidal range of approximately 5 to 6 feet occurs in this lower portion of the river. The Passaic River is located approximately 1 mile west of the Site, but no hydraulic connection exists between groundwater in the fill or sand unit aquifers at the Site and the Passaic River. There are no known wells for private or public drinking water supply within one mile of the Site (KEY, May 2011). No drinking water intakes are located in the Hackensack River in this tidal reach. The Town of Kearny water is supplied by the Wanaque Reservoir in Bergen County.

3.5 PHYSIOGRAPHY

Hudson County lies within the Piedmont Province of New Jersey. It is mainly underlain by slightly folded and faulted sedimentary rocks of Triassic and Jurassic age (240 to 140 million years old) and igneous rocks of Jurassic age. At the surface, the Piedmont is a low rolling plain divided by a series of higher ridges which slope gently toward sea level in Newark Bay.

Surficial materials in the vicinity of the Site consist primarily of man-made fill emplaced in former meadowlands over the last 100 years to improve the land for industrial development. On the SCCC Site, the fill is approximately 2 to 15 feet thick (KEY, October 2008). Historically, the surface of the Site was relatively flat, with upland elevations ranging from approximately 3 to 10 feet above msl. Since the construction of the consolidation area, maximum Site elevations are now approximately 15 feet above msl.

3.6 GEOLOGY

Information regarding the regional and Site-specific geology has been compiled as a result of the investigations at the Site, as well as through investigation of the adjacent Diamond and Seaboard Sites. This information is summarized below and in the Final IRAW (KEY, October 2008).

The geology in the area consists of coastal plain sediments overlying Triassic-age bedrock. Figure 3-1 presents cross-sections showing the subsurface geologic conditions beneath the SCCC Site.

Prior to development, the area consisted of marshlands that bordered the Hackensack River. Fill materials (shallow fill unit) were placed in the coastal marshlands of this region to create property for industrial/commercial development. At the SCCC Site, these fill materials generally exist to depths ranging between 2 to 15 feet below the present grade (Weston, May 1993 and Brown and Caldwell, April 2001). The original marsh surface, now located beneath the fill materials, consists of silt, humus and peat. This layer is regionally referred to as the "Meadow Mat" and is typically two to eight feet thick across the peninsula. The upper surface of the Meadow Mat is undulating rather than planar.

A sand unit (deeper sand unit) is present beneath the Meadow Mat and is generally less than ten feet thick at the SCCC Site. A varved clay unit is present beneath the deeper sand unit. The varved clay unit is continuous beneath the Site. The thickness of this unit beneath the SCCC Site is estimated at greater than 40 feet based on subsurface data acquired from geotechnical borings completed during the PDI. The vertical permeability of the varved clay unit, based on laboratory testing of Shelby tube samples collected at the Seaboard Site, averaged approximately 2.5×10^{-8} centimeters per second (cm/sec).

A glacial till unit is present beneath the varved clay. Bedrock lies directly beneath the glacial till unit at depths ranging from 70 feet in the western section of the adjacent Seaboard Site to greater than 100 feet in the eastern section of the Seaboard Site. Borings on the SCCC Site were not completed to bedrock.

3.7 HYDROLOGY

Historically, surface water runoff at the SCCC Site was channeled into surface ditches that originated in the center of the Site and flowed to the south into what was referred to as the South Ditch. The South Ditch formed part of the boundary with the Seaboard Site and flowed eastward

into the Hackensack River, with no provisions for collection of sediments entrained in the runoff. In addition, an underground storm sewer with catchment basins is located along the northern Site boundary shared with the Diamond Site.

As a major component of the IRA, a new stormwater collection system was installed to manage the stormwater runoff previously directed to the Hackensack River via the South Ditch. This system consists of underground butt-fused solid wall HDPE conveyance pipes and a series of drop inlets. The vast majority of the former process areas, fill placement areas, and wastewater management units are currently capped (as a result of IRMs) or are within the capped consolidation area (as a result of the IRA), and hence current contributions of impacted material to the stormwater management system are not expected. The current stormwater collection system is shown on Figure 2-4. No permanent flowing surface waters are present on the Site. Areas that are classified as wetlands and were discussed in Section 2.5.9 are also shown on Figure 2-4.

3.8 HYDROGEOLOGY

At the Site, two separate shallow groundwater-bearing units have been the focus of the groundwater investigation and remedial activities performed: 1) the shallow fill unit; and, 2) the deeper sand unit that underlies the Meadow Mat and overlies the varved clay. The water table at the Site occurs in the shallow fill material overlying the Meadow Mat.

The Meadow Mat acts as a basal semi-confining unit that limits, but does not completely eliminate the hydraulic connection between the shallow fill materials and the underlying deeper sand unit. Potentiometric data acquired from nested well locations during low tide indicate the existence of a downward vertical gradient between the shallow fill material and the deeper sand layer. Groundwater within the shallow fill material exists under unconfined conditions. Previous studies have indicated that the groundwater within the shallow fill material is not tidally influenced to a significant degree (KEY, October 2008). The Meadow Mat is a reducing environment that prevents the vertical migration of hexavalent chromium into the underlying

sand (i.e., hexavalent chromium is reduced to insoluble trivalent chromium) (KEY, December 2008).

3.8.1 Historical Groundwater Flow

Prior to the construction of the barrier walls and stabilization/backfilling/covering of the lagoons and development of the consolidation area, groundwater flow in the shallow fill unit at the SCCC Site appeared to be influenced by recharge and discharge phenomena. A potentiometric mound, resulting from recharge from precipitation, existed in the shallow fill material in the vicinity of the lagoons at the SCCC Site. Groundwater flowed radially away from this potentiometric mound in the lagoon area. Groundwater flow in the northern portion of the SCCC Site was toward a 48-inch diameter storm sewer located along the boundary between the SCCC Site and the Diamond Site located to the north. It was considered possible that, based on evaluation of the potentiometric data, the storm sewer (and/or the backfill surrounding it) may have served as a localized discharge point for groundwater in the fill unit. In 2008, the storm sewer was upgraded, as discussed in Section 2.4.

Beyond the influence of this mound and the potentiometric low in the vicinity of the sewer, groundwater flow in the shallow fill material at the SCCC Site was primarily to the south-southeast toward a drainage ditch in the southern portion of the SCCC Site (South Ditch). Figure 3-2 is a historical potentiometric surface contour map for the shallow fill unit on the SCCC Site which depicts groundwater flow directions prior to implementation of the IRA. Groundwater in the shallow fill unit in the eastern portion of the SCCC Site flowed to the east and discharged to the Hackensack River. The average horizontal hydraulic gradient in the shallow fill material at the SCCC Site was 0.0063 feet per foot (Weston, May 1993). The hydraulic conductivity of the fill material, as determined through the completion of slug tests on the adjacent Diamond Site, ranged from 4.9×10^{-5} cm/sec to 1.8×10^{-1} cm/sec with a mean of 1.4×10^{-3} cm/sec or approximately 4 ft/day (Brown and Caldwell, June 2008).

Groundwater in the deeper sand unit beneath the Meadow Mat existed under semi-confined conditions. The underlying varved clay acts as an effective barrier to the downward migration of groundwater from this unit. Figure 3-3 is a potentiometric surface contour map for the deeper

sand unit on the SCCC Site which depicts groundwater flow directions prior to implementation of the IRA. Groundwater flow in the deeper sand unit was primarily to the south-southeast, sub-parallel to the direction of flow in the river. Horizontal hydraulic gradients in the deeper sand unit are relatively flat, ranging from 0.002 to 0.008 ft/ft. Based on previously conducted slug tests, the average horizontal hydraulic conductivity of this unit at the SCCC Site is 1.9×10^{-3} cm/sec (5.34 ft/day).

Groundwater within the deeper sand unit was tidally influenced to a limited extent. Fluctuations in potentiometric surface elevations that are correlated to tides in the Hackensack River have been observed in wells located immediately adjacent to the river. The limited tidal influence has not been observed to create significant changes in groundwater flow directions.

3.8.2 Current Groundwater Flow

At the current time, groundwater flow is adjusting to the new site conditions associated with the construction of the barrier walls. Piezometers located on either side of the barriers are being used to monitor the groundwater elevations. A total of 28 piezometers are used to monitor the elevations across the barrier wall. In addition, 26 hydraulic control wells and 16 DNAPL recovery wells are also gauged. Water levels in all of these piezometers/wells are measured on a monthly basis. Locations of the piezometers are depicted on Figure 2-4. Based on the groundwater flow model simulations completed for design, it is anticipated that several months will be required to adjust the water level inside the containment area. Progress toward this objective is being accomplished in spite of the occurrence of Hurricane Sandy in late October 2012, as previously discussed. The Site was inundated during the hurricane, and this inundation will likely delay stabilization of groundwater conditions.

4.0 SUMMARY OF SITE CHARACTERIZATION DATA

This section contains summaries of recent and historical chemical-analytical data for multiple environmental media at the Site. Numerous previous environmental studies have documented releases to soil, groundwater, and sediment as a result of historical Site process operations. The discussions in this section focus primarily on the constituents associated with former process activities. The particular classes of compounds discussed herein include chlorinated aromatic hydrocarbons, polycyclic aromatic hydrocarbons (PAHs, primarily naphthalene), polychlorinated biphenyls (PCBs), polychlorinated-dibenzodioxins and polychlorinated-dibenzofurans (dioxins/furans or PCDD/PCDF), and metals, including hexavalent/total chromium. While other analytes may have been detected occasionally, the preceding are the primary Constituents of Interest (COI) for the Site. The results for various environmental media are discussed in this section and the results are summarized on a series of tables and figures (i.e., Tables 4-1 through 4-17, Tables B-1 through B-18, and Figures 4-1 through 4-10). Complete tabular summaries of the Site chemical-analytical data that existed prior to initiation of the IRA are provided in Appendix B of this SCSR.

The Final IRAW (KEY, October 2008) included a compilation of historical information (reiterated herein) to support scoping of the physical characterization and sampling and analysis that was deemed necessary to complete the design and implementation of the IRA. These additional sampling and analysis activities were scoped in detail in the IRAW, which included a Sampling and Analysis Plan (SAP) and a Quality Assurance Project Plan (QAPP). In addition, given that significant Site modifications were planned as a result of the IRA, sampling and analysis activities planned to be completed as part of additional RI characterization work (e.g., near-shore Hackensack River sediment sampling and analysis) were completed as part of the PDI for the IRA in areas that were destined to be disturbed as a result of implementation of the IRA. The scope of the additional RI characterization work is discussed in detail in a revised Phase II Supplemental Remedial Investigation Work Plan (KEY, December 2008), which addressed comments received from NJDEP on the previous version of the Work Plan. The majority of the additional RI characterization samples were obtained in conjunction with pre-design studies that were implemented prior to initiation of the IRA during the PDI for the IRA. Those additional RI

characterization activities that are considered necessary to complete Site characterization are summarized in Section 6.0 (Potential Data Needs).

Sampling and analysis activities completed at the Site during the recent IRA investigation resulted in the generation of data that provide a comprehensive snapshot of the Site conditions prior to implementation of the IRA. Although historical data are discussed in this section, graphical portrayals of the data are based primarily on the recent investigative work. In some instances, the historical data that are particularly relevant for the definition of the nature and extent of impacts at the Site (specifically with respect to surface and subsurface soil) data are presented in graphical as well as tabular fashion.

4.1 SOILS

Surface and subsurface soil samples have been collected from various portions of the SCCC Site since 1984. These included samples collected in association with the 1984 hydrogeologic investigation (Weston 1984), the NJDEP dioxin investigation (NJDEP, 1985), the 1991 French & Parrello IRM chromium investigation, the 1997 Focused RI (ERM, 1997), and the 1999 Supplemental RI (KEY, 1999). Additional surface and subsurface soil samples were obtained during 2008 and 2009 as part of the PDI. The samples were found to contain various chlorobenzene compounds and naphthalene at concentrations that exceeded standards. In addition, hexavalent chromium was also encountered in soil samples from the western and eastern portion of the Site and dioxins/furans were detected in soil samples obtained in the eastern portion of the Site. Tables B-1 through B-7 in Appendix B summarize the historical (pre-2008) soil sampling and analysis results. These data are provided as reported in the original source documents, many of which listed results as non-detects without the associated detection limits.

As part of the IRA and the Phase II Supplemental RI (KEY, October 2008 and KEY, December 2008), numerous soil samples were collected from various areas of the Site in order to provide data adequate for the design and installation of several IRA components. The following sections focus on historical and recent surface and subsurface soil investigations.

4.1.1 Surface Soil

Surface soil samples have been collected at the Site and on the adjacent Seaboard Site on multiple occasions. The results of the surface soil sample and analysis efforts are discussed in detail in this section. Figure 4-1 presents a summary of surface soil data for the primary COI for the Site. Figure 4-1 includes a combination of pre-IRA and IRA PDI and SRI data to provide a comprehensive representation of the nature and extent of surficial impacts at the Site. The surficial soil data as summarized on Figure 4-1 are representative of materials which are located in covered (i.e., IRM or IRA) areas.

In 1991, an extensive surface soil sampling effort was undertaken by French and Parrello to delineate the extent of chromium impacts in support of IRM design and implementation. Surface soil samples were collected from 21 locations and these samples were analyzed for chromium and hexavalent chromium. The results of this chromium delineation effort are presented in Table B-1 in Appendix B. Sample locations are depicted on Figure B-1 in Appendix B. Hexavalent chromium concentrations ranged from not detected (lowest detection limit = 0.12 mg/kg) to a maximum of 270 mg/kg. Only a small percentage of the samples exhibited concentrations in excess of the NJDEP Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS) of 20 mg/kg (3 of 36 samples). Total chromium concentrations in these samples ranged from 17.5 mg/kg to 18,800 mg/kg. There is no New Jersey standard for non-residential direct contact with soils containing total chromium although a non-promulgated criterion for total chromium of 120,000 mg/kg was established for residential land use by the NJDEP's chromium work group. None of the samples contained total chromium concentrations greater than the guideline established by the NJDEP.

Additional surface soil samples were collected during the Weston RI (1990) and the KEY Supplemental RI (1997-1999). The Weston surface soil samples were obtained to delineate impacts, primarily in the former process and lagoon areas and were designated as tank area soil samples or samples 1 through 16. The KEY surface soil samples were collected in the vicinity of the transformer pad which was remediated as discussed in Section 2.5.10. Analytical results for these samples are summarized in Tables B-2, B-3, and B-4. Sample locations are depicted on Figures 2-2 and B-1.

As is shown in Table B-2, the Weston tank area surface soil samples were analyzed for select volatiles and semi-volatiles. The most prevalent constituents in these samples are associated with the historical naphthalene and chlorobenzene-related operations. Naphthalene was detected in most of the ten samples although only one sample exhibited a concentration in excess of the NJDEP NRDCSRS. The concentration in this sample (TSS-1) was reported by the consultant in excess of a pure product concentration, likely as a result of laboratory quantitation issues outside the linear calibration range-, as such, the reported naphthalene concentration is questionable. The highest concentration of a chlorinated aromatic was 200 mg/kg (1,2,4-trichlorobenzene in the duplicate sample from location TSS-9) although this concentration does not exceed the relevant criterion. As previously discussed, the soils in this area were covered during implementation of the IRA.

Table B-3 in Appendix B contains the results for TCDD analyses of multiple Weston surface soil samples collected across the Site. Three detections of TCDD were encountered in the surface soil samples from the former process/lagoon area. Concentrations were 0.52 ug/kg, 5 ug/kg, and 59.5 ug/kg for these three samples. One of these samples (sample 16) was obtained at the edge of the West Lagoon (TCDD = 59.5 ug/kg). Another sample (sample 10A) was obtained in the northwest corner of the former process area (TCDD = 5 ug/kg). Finally, a third sample (Sample 12 collected in 05/85) was obtained from the process area between these two locations (TCDD = 0.52 ug/kg).

As is shown in Table B-4, the KEY transformer pad area soil samples were analyzed for PCBs. Only those constituents with positive detections are summarized. Aroclor 1254 (0.034 mg/kg) and Aroclor 1260 (9,300 mg/kg) were detected in these samples. As previously discussed, impacted soils at this location were removed and disposed off-site during the IRA.

To supplement the historical data, 11 additional surface soil samples were collected by KEY in 2009 and analyzed for SVOCs, dioxins/furans, and/or PCBs as part of the PDI/SRI. Four sample locations were off-Site, to the south on the Seaboard Site. The remaining seven locations were located in the former process/lagoon area and samples were obtained south of the former lagoons

and near the northeastern property boundary. These samples were collected from a depth of 0 to 6 inches.

The surface soil analytical results for the 2009 samples are presented in Table 4-1. The results indicated the presence of several PAHs at concentrations that exceeded their respective NJDEP NRDCSRS. Various PAHs including, but not limited to, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a.h)anthracene and indeno(1,2,3-cd)pyrene were detected in multiple samples. Naphthalene was not encountered in any of the surface soil samples at concentrations in excess of the NJDEP standard, likely as a result of its volatility. Concentrations of other less volatile PAHs ranged to maximum concentrations of 47 mg/kg (benzo[b]fluoranthene) and 37 mg/kg (benzo[a]pyrene). For comparative purposes, the standards for these two PAH compounds are 2 mg/kg and 0.2 mg/kg, respectively. Consequently, some PAHs were detected at concentrations up to roughly two orders of magnitude above the NJDEP standards. These sample locations are now located beneath additional cover materials consisting of either gravel (i.e., in the northern portion of the former process area), under consolidated materials and a cap in the Consolidation Area, or under a capillary break or Processed Dredge Material cover on the Seaboard Site.

The four samples collected on the Seaboard Site were analyzed for dioxins/furans and the TCDD TEQs were below the USEPA benchmark of 1 ug/kg as specified in Office of Solid Waste and Emergency Response Directive 9200.4-26. All of the samples were analyzed for PCBs and three samples (SS-02, SS-04, and SS-06) exhibited concentrations ranging from 1.1 to 2.5 mg/kg (Aroclor 1248), which slightly exceeded the TSCA Self-Implementing Cleanup Standard for Unrestricted Use of 1 mg/kg. All three of these sample locations were located in the footprint of the planned Consolidation Area and are now under cover.

Additional surface soil samples were collected during the chromium boring investigation as subsequently discussed in Section 4.2.2. Only two of the locations sampled from the off-Site areas contained hexavalent chromium at concentrations greater than the 20 mg/kg standard (at multiple depths). Concentrations in the surface soil samples obtained at locations CR-10/CR-10R and CR-24/CR-24R were 495 mg/kg and 121 mg/kg, respectively. Concentrations of total

chromium in the surface soil samples ranged from non-detected to 2,420 mg/kg, well below the non-promulgated residential standard of 120,000 mg/kg.

4.1.2 Subsurface Soil

Subsurface soil samples were obtained during historical Site investigations including the Weston RI (1990-1993), the ERM Focused RI (1996-1997), the KEY Supplemental RI (1997-1999), and the KEY pre-design/Phase II Supplemental RI (2008-2009). Historical analytical results for subsurface samples obtained prior to the pre-design investigation are summarized in Appendix B Tables B-5, B-6, and B-7. The locations of these samples are depicted on Figures 2-2 and B-1.

Table B-5 summarizes subsurface soil results for borings completed during installation of three monitoring wells (MW-2L installed by Weston and MW-16L and MW-17L installed by KEY). These subsurface soil samples exhibited relatively little impact. For example 1,4-dichlorobenzene was detected at a maximum concentration of 2 mg/kg, naphthalene was detected at a maximum concentration of 3.22 mg/kg, benzo(a)pyrene was detected at a maximum concentration of 0.42 mg/kg. Hexavalent chromium, dioxins/furans, and PCBs were not analyzed for these samples. One sample was analyzed for metals and contained total chromium at a concentration of 593 mg/kg (well below the 120,000 mg/kg non-promulgated guideline).

Table B-6 summarizes analytical results for various delineation soil borings completed by Weston, ERM, and KEY. A focused suite of analyses was completed for these samples. The Weston and ERM samples were primarily collected in the vicinity of the former lagoons and exhibited the presence of chlorinated aromatic hydrocarbons at concentrations ranging as high as 6,540 mg/kg (1,2,4-trichlorobenzene) and naphthalene at concentrations ranging to 5,750 mg/kg. The Weston samples were analyzed for select metals and yielded total chromium concentrations ranging to 685 mg/kg. Hexavalent chromium was not speciated for analysis in these samples. The KEY samples were collected in the western section of the Site in areas that had not previously been investigated and were analyzed for select volatile and semi-volatile organics. These samples displayed very little impact.

Table B-7 summarizes total chromium results for subsurface soil samples obtained from eight test pits completed by Weston in 1993. Sample locations are depicted on Figures 2-2 and B-1. Total chromium concentrations in these samples were below the non-promulgated NJDEP residential direct contact criterion of 120,000 mg/kg and ranged from 1,740 mg/kg to 34,900 mg/kg. These samples were collected from test pits located across the Site.

In 2009, as part of the investigation work proposed in the Supplemental Phase II RI, additional chromium delineation borings were completed by KEY on the adjacent Seaboard Site. These borings, and associated sampling and analyses, were completed in support of both the SCCC Supplemental RI and ongoing remediation efforts at the Seaboard Site which consisted of installation of capillary breaks and a processed dredge material (PDM) cover. The intent of the chromium delineation boring program was to determine the extent of chromium impacts. The results of this study were ultimately used during the design and implementation of the remedial measures for the adjacent Seaboard Site. This work was completed subject to NJDEP oversight and approval.

Table 4-2 presents a summary of the analytical results for the supplemental chromium borings. The results indicated that samples from two boring locations (CR-10/CR-10R near the SCCC/Seaboard property line at depths of 0.0-0.5 and 1.5-2.0 feet and CR-24/CR-24R at depths of 0.0-0.5, 2.5-3.0, and 6.5-7.0 feet) contained hexavalent chromium at concentrations greater that the 20 mg/kg New Jersey criterion for non-residential soils. Concentrations in these samples ranged from 21.3 to 495 mg/kg. Note that the laboratory used an incorrect spiking procedure during analysis of the original samples and consequently the initial results were rejected as a result of data validation. The locations were resampled and hexavalent chromium analysis was repeated. However, between the two rounds, processed dredge material had been placed on much of the Site surface at the Seaboard Site. During resampling, samples were obtained at depths which corresponded to the initial sample interval (e.g., if the initial sample interval was 0.0-0.5 feet and 1.5 feet of PDM had been placed, the corresponding sample interval during the resampling event was 1.5-2.0 feet as shown in Table 4-2 for CR-10/CR-10R). Total chromium was detected at concentrations ranging up to 23,200 mg/kg in the Seaboard Site delineation samples. There is no standard for non-residential direct contact with soils containing total

chromium. However, as previously indicated, the NJDEP has established a non-promulgated total chromium criterion for residential land use (120,000 mg/kg). None of the measured total chromium concentrations exceeded this non-promulgated value.

Figures 4-2 and 4-3 present graphical displays of subsurface soil analytical results for key constituents of interest in samples that were collected during several historical and pre-design and Supplemental Phase II RI activities. These activities consisted of sampling and analysis of samples from DNAPL delineation borings, barrier wall alignment borings, geotechnical borings, HCTS recovery well piping trench alignment locations, historical delineation soil borings, and chromium delineation borings. The data, with the exception of the results from the samples taken on the Seaboard Site, are summarized on Figure 4-2. Given the large number of chromium delineation borings on the Seaboard property, the Seaboard property chromium delineation data are presented separately on Figure 4-3. In addition, samples that are potentially indicative of subsurface conditions were also obtained from subsurface soils surrounding the septic tanks.

In 2009, as part of the Phase II Supplemental Remedial Investigation conducted at the Site, 13 additional borings were drilled and sampled by KEY in an effort to fully delineate the extent of DNAPL in the subsurface soils. DNAPL had historically been identified in several onsite groundwater monitoring wells, but the lateral extent of potentially recoverable DNAPL was unknown. Multiple borings were completed with continuous split-spoon sampling of subsurface soil to the top of the varved clay unit. Analysis of subsurface soil samples was conducted to confirm delineation of the extent of DNAPL impacts. The results of the 2009 subsurface soil sampling effort associated with the DNAPL delineation activities are presented in Table 4-3.

Subsurface soil samples were also collected by KEY in 2008 from the anticipated location of the barrier wall alignment. Soil borings completed into the top of the varved clay were located approximately every 200 feet along the anticipated alignment of the wall. Barrier wall alignment samples analytical results are presented in Table 4-4 and are summarized on Figure 4-2. A total of 10 barrier wall alignment borings were located on the SCCC Site and the adjacent Seaboard Site (the remaining barrier wall borings were located on the adjacent Diamond Site as the wall was designed to encompass all of the SCCC and Diamond Sites and part of the Seaboard Site).

The results for the Diamond Site are not discussed herein with the exception of one significant observation. Specifically, chlorinated aromatic hydrocarbons were identified in the sand unit at Diamond Site barrier wall alignment boring BW-6 (along the Hackensack River frontage) and consequently, the spoils from this portion of the barrier wall were placed in the SCCC Consolidation Area in accordance with the USEPA- and NJDEP-approved like vs. like demonstration. Geotechnical borings were also completed to support stability analysis for the barrier wall, specifically to determine an appropriate embedment depth for the steel sheet pile wall. Samples for chemical analysis were also obtained from the geotechnical borings.

Benzene, 1,2,4-trichlorobenzene and 1,4-dichlorobenzene were detected in one or more samples at concentrations that exceeded the NRDCSRS. In addition, several samples contained multiple PAHs and/or hexavalent chromium at concentrations in excess of their respective standards/guidelines. The most significant result of the barrier wall alignment investigation was that chlorinated aromatic hydrocarbons (e.g., 1,2,4-trichlorobenzene and 1,4-dichlorobenzene) were present in the sand unit to the south of the SCCC Site beneath the Seaboard Site. For example, 1,4-dichlorobenzene was detected in the sand unit sample from boring BW-20 at a concentration of 3,400 mg/kg. As a result of this information, the planned barrier wall was relocated to extend onto the Seaboard Site as proposed in IRAW Addendum No. 1 submitted to the NJDEP in March 2009 (subsequently approved by the NJDEP). In addition, the barrier wall alignment borings yielded information that indicated that chromium concentrations were most pronounced in the eastern portion of the Site near the lagoons. Total chromium concentrations in fill samples obtained in this area ranged up to 25,200 mg/kg (below the non-promulgated guideline); however, a maximum hexavalent chromium concentration in the fill samples of 3,820 mg/kg, above the NJDEP guideline of 20 mg/kg. Samples obtained along the western property line did not contain hexavalent chromium in excess of the standard and only one sample obtained on the Seaboard Site (BW-21 fill sample) exhibited a hexavalent chromium concentration above the guideline (99.1 mg/kg).

Five borings were installed specifically for the collection of geotechnical information to support steel sheet pile wall design. Four borings were completed in the vicinity of the former lagoons and one was completed in the Hackensack River. These samples were also were also analyzed for VOCs, SVOCs, and metals. The complete analytical results for these samples are presented

in Table 4-5. These samples were found to be relatively clean, with only one detection of naphthalene (39 mg/kg in GT-1, 25-26 feet deep) exceeding the New Jersey standard for non-residential soils.

Pipe run trench spoil samples were collected along planned piping runs from recovery well locations to the HCTS treatment plant to support determination of the appropriate disposition of the spoils. Table 4-6 contains the complete analytical results for these four samples (from three locations, with one reanalysis for dioxins/furans). Each of these samples was analyzed for VOCs, SVOCs, dioxins/furans, PCBs, and metals, as well as for RCRA Characteristics and various indicator parameters.

A few PAHs were detected in the pipe run trench spoil samples at concentrations that exceeded their respective New Jersey non-residential soil standards. Benzo(a)pyrene (maximum concentration of 1.6 mg/kg), benzo(b)fluoranthene (maximum concentration of 2.9 mg/kg), and dibenz(a,h)anthracene (maximum concentration of 0.42 mg/kg) were slightly greater than their respective standards. In addition, the TCDD TEQ in sample TWSC-05 was 1.3 ug/kg, which slightly exceeded the USEPA criterion of 1 ug/kg. Hexavalent chromium was also detected in samples from all three locations, at concentrations ranging from 59.7 to 1,020 mg/kg and chromium was determined to be leachable as a result of TCLP testing. Based on the analytical results for these samples, the excess trench spoils were ultimately placed in the SCCC Consolidation Area as were the spoils from the portions of the slurry wall on the SCCC and Seaboard Sites. The disposition of these materials was in accordance with the NJDEP and USEPA-approved like versus like demonstration under the Area of Contamination Policy as previously discussed in Section 2.5.8. Figure 4-2 shows the spatial distribution of constituents detected in the subsurface soils including the geotechnical boring and pipe run trench spoil samples.

In addition to the subsurface soil sampling and analysis program, additional samples were obtained to determine if a number of septic tanks plumbed to various buildings constituted potential sources of subsurface impacts. Solids and liquids from the septic tanks were sampled and analyzed and these results were used for waste classification purposes to support the

management of the septic tank contents during the IRA. The liquids and solids were ultimately removed from the septic tanks for either onsite treatment (i.e., the liquids were treated in the HCTS) or for offsite disposal (i.e., the solids) and the septic tanks were closed in place.

Upon completion of this activity, borings were completed adjacent to the septic tank locations to determine if any release had occurred. Analytical results for the tank content samples are presented in Tables 4-7 (tank solids) and 4-8 (tank liquids). The samples were analyzed for VOCs, SVOCs, PCBs and metals. The analytical results for the borings completed adjacent to the closed tanks are summarized in Table 4-9. A summary of analytical results for the septic tank samples and adjacent borings is provided on Figure 4-4. The borings completed adjacent to the tanks were analyzed for NJDEP-recommended constituents (VOCs and total and hexavalent chromium). It was determined that several of the septic tanks were installed in locations exhibiting the presence of COPR soils. Hexavalent chromium was detected at concentrations in excess of the 20 mg/kg guidelines in samples from four locations. Hexavalent chromium concentrations in samples obtained adjacent to septic tanks 5, 6, 7, and 8 ranged as high as 11,000 mg/kg (sample number ST-7-W). Given the detection of organic chemicals in the septic tanks, it is likely that they impacted the former South Ditch given the fact that the effluent from the tanks was routed to the ditch. The South Ditch was also remediated during the IRA, as previously discussed.

4.2 GROUNDWATER

Historical investigations of groundwater conditions at the Site have focused on delineation of impacts in the shallow fill and deep sand units as well as on delineation and characterization of the extent of DNAPL associated with former naphthalene and chlorinated aromatic hydrocarbon processing. The shallow fill unit is discussed in Section 4.2.1. The deep sand unit is discussed in Section 4.2.2 and DNAPL is discussed in Section 4.2.3.

4.2.1 Shallow Fill Unit

Historical investigations at the SCCC Site included the installation and sampling of shallow fill unit monitoring wells. At various times, these wells were sampled for VOCs, SVOCs, PCBs,

metals, hexavalent chromium and/or dioxin. Historical groundwater analytical data are presented in Tables B-8 (samples from shallow fill unit monitoring wells) and B-9 (samples from shallow piezometers) in Appendix B. Historically, the shallow groundwater samples were found to contain several VOCs, naphthalene, 1,2,4-trichlorobenzene, and hexavalent chromium at concentrations that exceeded New Jersey Groundwater Quality Standards for Class IIA aquifers.

In 2008 samples were collected by KEY from four shallow monitoring wells and five shallow piezometers. These samples were analyzed for VOCs, SVOCs, PCBs, pesticides, and metals including hexavalent chromium. Figure 4-5 presents a summary of groundwater analytical results that were found to exceed the New Jersey Class II-A Groundwater Quality Criteria. Various chlorobenzenes, naphthalene, 2-methylnaphthalene, phenols and PCBs were detected in at least one sample at concentrations that exceeded the applicable criteria. Samples from wells MW-11U and MW-14U, located in the former lagoon area, contained the highest concentrations of the chlorobenzenes. In addition, chromium was reported in most samples at concentrations that exceeded the criterion of 70 ug/L. Table 4-10 presents the complete analytical results for the 2008 groundwater sampling activity.

Shallow fill unit groundwater is currently contained within a slurry wall, and hydraulic maintenance within the slurry wall is achieved through a series of groundwater collection wells (26) which are routed to the onsite HCTS treatment plant. The treatment plant was designed to remove the various organic constituents of interest as well as metals (via chromium reduction and precipitation processes). Five shallow DNAPL recovery wells were also installed. DNAPL accumulates in sumps at the well locations and is removed from the sumps on a periodic, as-needed, basis. The effluent from the treatment plant is discharged to the Hackensack River via a NJPDES permitted outfall. Sampling and analysis of the effluent is conducted on a routine basis and the results are reported to NJDEP via monthly Discharge Monitoring Reports and are not discussed in the context of this report.

4.2.2 Sand Unit

Between 1988 and 1993, 20 monitoring wells were installed in the deeper sand unit to facilitate water level measurement and sampling and analysis. Analyses included VOCs, SVOCs, PCBs,

dioxins/furans, metals and/or hexavalent chromium. In 1999, two additional deeper wells were installed and sampled for SVOCs. These historical groundwater analytical results are presented in Tables B-10 (samples from sand unit monitoring wells) and B-11 (samples from sand unit piezometers) in Appendix B.

In 2008, eight deeper sand unit monitoring wells were sampled by KEY, and the samples were analyzed for VOCs, SVOCs, PCBs, pesticides, and metals. Table 4-11 presents the complete analytical results for these samples. Exceedances of New Jersey Class II-A Groundwater Quality Criteria are presented in graphical form on Figure 4-6. Similar to the fill unit wells, several chlorinated benzenes, naphthalene, 2-methylnaphthalene, phenols and PCBs were noted in multiple samples at concentrations greater than the New Jersey criteria for Class IIA groundwaters. Samples from wells MW-2L, MW-3L, MW-4L, MW-8L, MW-14L and MW-15L yielded concentrations of various chlorobenzenes in excess of standards. Some of these samples also yielded concentrations of naphthalene and/or phenols in excess of relevant standards. Overall, the concentrations found in the samples from the deeper wells exceeded those reported for the fill unit wells with the exception of hexavalent chromium, which is reduced as a result of the presence of the organic rich Meadow Mat which exists between the units.

As for the fill unit, sand unit groundwater is currently contained within a slurry wall. Eleven DNAPL recovery wells were installed in the sand unit and routed to the onsite HCTS treatment plant. The treatment plant was designed to remove the various organic constituents of interest detected in the sand unit. DNAPL accumulates in sumps at the well locations and is removed from the sumps on a periodic, as-needed, basis. The effluent from the treatment plant is discharged to the Hackensack River via a NJPDES permitted outfall. Sampling and analysis of the effluent is conducted on a routine basis and the results are reported to NJDEP via monthly Discharge Monitoring Reports and are not discussed in the context of this report.

4.2.3 DNAPL

Historically, DNAPL had been observed in several monitoring wells during sampling activities. Samples of the DNAPL submitted for analysis were found to consist primarily of chlorinated aromatic hydrocarbons (i.e., 1,2,4-trichlorobenzene and various dichlorobenzene isomers) and

naphthalene. In addition, a DNAPL sample collected from MW-13L located near the former lagoons was found to contain various polychlorinated-dibenzofurans and PCBs. In addition to historical observations of DNAPL, DNAPL has been encountered in multiple DNAPL recovery wells installed in 2011 as part of the IRA.

In 1999, as part of a supplemental RI performed by KEY, a Laser-Induced Fluorescence technique (Rapid Optical Screening Tool [ROST™]-equipped cone penetrometer system) was used to delineate the extent of DNAPL (KEY, April 1999). The instrument was calibrated to the Site-specific conditions using drops of DNAPL recovered from five onsite monitoring wells. Thirty-one borings were completed in the vicinity of the former lagoons and around Buildings 2, 3 and 4 in the western portion of the Site. At four of the ROST locations, confirmatory soil borings were drilled to the depth at which the presence of DNAPL was indicated, and split spoon samples were examined for the presence of DNAPL as a confirmatory step.

Based on the historical DNAPL analytical data provided in Appendix B, DNAPL in the shallow fill unit appeared to be primarily confined to the area immediately surrounding the former lagoons and near Building 4 on Lot 50. DNAPL in the deeper sand unit was found to be more widely distributed and extends onto the adjacent Seaboard property to the south of the Site as well as the Diamond Site to the north. It was for this reason that the IRA slurry wall extends onto the Seaboard property as previously depicted on Figure 2-4. DNAPL in this unit exists at the top of the varved clay unit between the lagoons and the railroad right-of-way, at the northern Site boundary, and in the area between the lagoons and the river. As of 1999, DNAPL was also inferred to be present in the area south of the lagoons and along the southwest Site boundary near Buildings 2 and 4. Subsequent borings and DNAPL recovery operations have confirmed the presence of DNAPL in these areas. Soil analytical data from 1990 and 1999 DNAPL delineation sampling and analysis activities are presented in Table B-5 in Appendix B.

In addition to the soil sampling associated with the DNAPL delineation activity, samples of free phase DNAPL were collected by KEY from two monitoring wells in 2008. Table 4-12 presents the analytical results for these two samples. These samples differed markedly in composition. The sample from MW-3L (located approximately 100 feet south of Building 1) was primarily

1,4-dichlorobenzene (520,000 mg/kg) and chlorobenzene (8,800 mg/kg) with trace amounts of other chemicals including dioxins/furans (TCDD TEQ = 0.015 mg/kg). The sample from MW-13L was primarily hexachlorobenzene (12,000 mg/kg), and various polychlorinated biphenyls (i.e., Aroclor 1016, 1248, 1260, and 1268 at concentrations ranging to 8,600 mg/kg). Dioxins/furans were also detected in this sample at a TCDD TEQ of 28 mg/kg. The primary contributors to the TEQ for this sample were the penta-, hexa-, and hepta-furans as shown in Table 4-12. Both samples contained 1,4-dichlorobenzene, chlorobenzene and tetrachloroethene at concentrations that exceeded the Toxicity Characteristic Leaching Procedure guidelines. The sample from well MW-3L also failed the RCRA characteristic test for ignitability. The DNAPL collected from the Site is currently being managed as a hazardous waste and in accordance with RCRA and TSCA requirements.

Figure 4-7 presents a summary of the data associated with DNAPL sampling and analysis conducted in 2008. The data shown are a subset of the complete data presented in Table 4-12, and focus only on those analytes that were detected at concentrations that exceeded a potentially relevant standard or criterion.

4.3 SURFACE WATER

Surface water samples have been collected from both onsite drainage ditches and from the Hackensack River. This section focuses on historical results for surface water samples because at the current time, after completion of the 2010-2011 IRA, no perennial surface water bodies exist at the Site. All surface runoff is associated with sheet flow which is collected via storm drains and discharges to the Hackensack River via storm sewers that were either upgraded and repaired to prevent infiltration (i.e., the storm sewer between the SCCC Site and the Diamond Site) or newly installed in a manner which precludes infiltration (i.e., the butt-fused HDPE stormwater system installed along the alignment of the former South Ditch). Surface water may also pond occasionally in upland freshwater emergent wetlands. However, these transient surface waters are expected to be unimpacted given that the wetlands were recently constructed after remediation of the former South Ditch.

Tables B-12 and B-13 in Appendix B contains a summary of historical surface water sample results collected by multiple firms between 1991 and 2002. Surface water samples collected from the South Ditch in both 1991 and 2002 (Table B-12) were found to contain various chlorobenzenes, naphthalene, and chromium; hexavalent chromium was not analyzed. The concentrations of chlorobenzene ranged from non-detected to 760 ug/L in sample SW-21 (2002), which was collected from the headwaters (upstream segment) of the South Ditch. In the 1991 samples, location SSW-4 contained the highest concentrations of 1,2- , 1,3- , and 1,4-dichlorobenzene (2,740 ug/L, 2,920 ug/L, and 4,680 ug/L respectively). The highest concentration of naphthalene reported in the historical surface water samples was 260 ug/L at location SSW-2 at the outlet of the South Ditch. Only total chromium was measured in these historical surface water samples, with the reported concentrations ranging from 150 ug/L at location SC-SW-14 to 1,240,000 ug/L at location SSW-6. This unfiltered sample was obtained from a drainage swale in the former process/lagoon area and drained water from an area of exposed COPR soil. By contrast, a sample obtained from the South Ditch downstream of its confluence with the aforementioned drainage swale (SSW-2) contained only 320 ug/L of total chromium.

In spite of the detection of relatively high concentrations of various organics and chromium in the onsite surface water samples, no significant impact was noted historically in the Hackensack River, likely as a result of the low flow in the drainage channels, which were often observed to be stagnant, and the high flow in the river. Multiple samples were obtained from the Hackensack River over the course of the various investigations. The analytical results for these samples are summarized in Table B-13 and sample locations are depicted on Figure 2-2 and Figure B-1. Four samples were obtained from the river in 1996 during Focused Remedial Investigation conducted by ERM. Samples SW-3 and SW-4 were obtained upstream of the Site. Sample SW-2 was obtained at the outfall of the South Ditch. Sample SW-1 was obtained just downstream of the storm sewer outfall located between the Diamond and SCCC Sites. The samples were analyzed for water soluble constituents (VOCs). Constituents detected in the surface water samples consisted of chlorinated aromatic hydrocarbons (chlorobenzene, three dichlorobenzene isomers, and 1,2,4-trichlorobenzene, and naphthalene. Concentrations of these constituents ranged up to 6.37 ug/L (1,4-dichlorobenzene in SW-3). The measured concentrations were

substantially below New Jersey Surface Water Quality Standards promulgated in N.J.A.C. 7:9. For example, criteria for these constituents range from 42 ug/L (1,2,4-trichlorobenzene) to 8,300 ug/L (1,3-dichlorobenzene) for saline water bodies. Four additional surface water samples were obtained from the Hackensack River by the USEPA Technical Assistance Team in 2002. Three samples (SC-SW-01 through SC-SW-03) were obtained in proximity to the South Ditch outfall. Sample SC-SW-04 was a background sample obtained upstream of the Site. The analytical results for these samples are summarized in Table B-13 and sample locations are depicted on Figure 2-2 and Figure B-1. Samples were analyzed for VOCs, SVOCs, pesticides, PCBs, and metals. Chlorinated aromatics were detected at concentrations below the New Jersey Surface Water Standards and ranged to 12 ug/L (1,2,4-trichlorobenzene in SC-SW-02). Various PAHs were also detected in the surface water samples. Concentrations ranged to 45 ug/L (naphthalene in SC-SW-02). The state of New Jersey has not promulgated a Surface Water Standard for naphthalene. For comparative purposes, the New Jersey Drinking Water Standard for naphthalene is 300 ug/L. Benzo(a)pyrene was detected at a concentration in excess of the New Jersey Surface Water Standard (9.1 ug/L versus 0.018 ug/L in sample SC-SW-01). This sample was obtained downstream of the South Ditch outfall. No PCBs or pesticides were detected in any of the surface water samples. Metals concentrations were greatest in the sample obtained downstream of the Site. Hexavalent chromium was not analyzed for these samples by EPA.

4.4 LAGOON MATERIALS

Residual materials associated with naphthalene and chlorinated aromatic chemical processing and use at the facility existed in the lagoons located in the eastern portion of the property. The lagoons were used for solids settling as part of a wastewater treatment process and consisted of two portions referred to as the East and West Lagoons. The lagoons appear to have been constructed via completion of a single excavation into the fill material with subsequent placement of a berm between the east and west portions. The two lagoons were connected via a shallow, narrow breach in the berm between the two portions. Historically, the lagoons had a combined surface area of approximately 33,000 square feet and, based on work completed by Roy F. Weston, Inc. in 1987, contained approximately 5 to 6 feet of settled solids. Consequently the estimated volume of these materials is approximately 7,300 cubic.

Lagoon solids were sampled by several entities between 1986 and 1991. Tables B-14 and B-15 provided in Appendix B present the analytical results for historical lagoon solid samples as well as for perimeter samples obtained from the lagoon berms. The primary constituent identified in these samples was naphthalene although other organics (including benzene, toluene, ethylbenzene, PAHs, and phenols) were also detected. Naphthalene concentrations in the samples were reported at levels that actually exceed pure product concentrations (i.e., more than 1 million parts per million). This was likely a result of quantitation by the laboratory outside the instruments linear calibration range although it could be attributable to data entry errors on behalf of the consultant. Regardless, it is apparent that naphthalene concentrations in the lagoon solids are extremely high. In addition, 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) was detected in multiple samples. A maximum TCDD concentration of 237 ug/kg was reported. Hexavalent chromium was not detected in these samples. Maximum total chromium and lead concentrations of 2,080 mg/kg and 4,720 mg/kg, respectively, were reported in the lagoon samples

In 2008, as part of the pre-design investigation, additional samples of the lagoon solids were collected by KEY. A total of ten solid samples were obtained, six from the east lagoon and four from the west lagoon. These samples were analyzed for volatile and semi-volatile organics, dioxins/furans, PCBs, and metals. Analysis for RCRA Characteristics (ignitability, reactivity, corrosivity, and toxicity [via TCLP]) as well as indicator parameters was also completed. Two surface water samples (accumulated rainwater and snowmelt) were also collected from each of the lagoons (East and West). These surface water samples were analyzed for volatile and semi-volatile organics, dioxins/furans, PCBs, pesticides, metals, and several indicator parameters.

Naphthalene concentrations in the solid samples ranged as high as 77% (770,000 mg/kg). A number of other constituents were detected at concentrations in excess of NJDEP NRDCSRS although concentrations of these constituents were orders of magnitude lower than the naphthalene concentrations. These constituents consisted of benzene, tetrachloroethylene, 1,2,4-trichlorobenzene, 1,4-dichlorobenzene, hexachlorobenzene, 2-methylnaphthalene, carbazole, 4-methylphenol, arsenic, lead, and hexavalent chromium. Arsenic was detected in excess of the standard in one sample (23.1 mg/kg versus 19 mg/kg NRDCSRS). Lead was detected in all of the samples and exceeded the standard in two of these samples (875 and 2,350 mg/kg versus 800

mg/kg NRDCSRS). Hexavalent chromium was detected in all but one of the samples (maximum of 564 mg/kg versus 20 mg/kg NRDCSRS).

Dioxin/furan concentrations were converted to 2,3,7,8-TCDD toxicity equivalent concentrations (TEQ). The maximum 2,3,7,8-TCDD TEQ concentration in the solid samples was 2,600 ug/kg. The primary contributors to this TEQ were furan congeners, specifically 2,3,7,8-tetrachlorodibenzofuran (150 ug/kg as TEQ), 2,3,4,7,8-pentachlorodibenzofuran (700 as TEQ), 1,2,3,4,6,7,8-heptachlorodibenzofuran (320 ug/kg as TEQ), 1,2,3,6,7,8-hexachlorodibenzofuran (150 ug/kg as TEQ), and 1,2,3,4,7,8-hexachlorodibenzofuran (1,200 ug/kg as TEQ). The actual 2,3,7,8-TCDD isomer was not detected in any of the samples at detection limits ranging from 0.046 to 48 ug/kg.

In spite of the detection of elevated concentrations of naphthalene and the presence of other water soluble constituents in the lagoon solid samples, concentrations in the accumulated rainwater/snowmelt aqueous samples were relatively low. As a point of comparison, the concentrations in the aqueous samples were contrasted to the limits specified in the New Jersey Pollutant Discharge Elimination System (NJPDES) permit for the TCTS and HCTS. Constituents detected in excess of these limits (expressed as daily maxima, monthly averages, or both) consisted of 1,4-dichlorobenzene (45 ug/L versus a 28 ug/L daily maximum), 2,4-dimethylphenol (24 ug/L versus a monthly average of 19 ug/L), phenol (24 ug/L versus a monthly average of 15 ug/L), total chromium (118 ug/L versus a daily maximum of 100 ug/L), and lead (57.7 ug/L versus a monthly average of 50 ug/L). Total Organic Carbon also exceeded the permit limit (138 mg/L versus a daily maximum of 20 mg/L). The surface water ponded within the lagoons was pumped from the lagoons and treated in the TCTS prior to discharge to the Hackensack River (in accordance with the referenced permit).

The complete analytical results for the 2008 lagoon solid and aqueous samples event are presented in Tables 4-13 and 4-14, respectively. Results are summarized on Figure 4-8 in the form of a tag map showing the results for several constituents of interest.

4.5 SEDIMENT

During historical and recent Site investigations, sediment samples have been collected from both on-Site drainage ditches and from the Hackensack River. This section presents a summary of these data, focusing on the primary constituents of concern. Sediment/soft soil results for the former South Ditch are discussed in Section 4.5.1. Sediment results for the Hackensack River are discussed in Section 4.5.2. These sediment results are provided for historical purposes only and are not representative of current conditions given that both the South Ditch sediments/soft soils and the and the near shore Hackensack River sediments were excavated/dredged, solidified and placed in the onsite SCCC Consolidation Area.

4.5.1 South Ditch Sediments/Soft Soils

The South Ditch was a historical drainage channel to the Hackensack River and consequently was subjected to multiple phases of investigation. In 1991, 1996, and 2002, sediment samples were collected from the South Ditch. The analytical results for these samples are presented in Table B-16 and B-17, Appendix B.

Various chlorinated aromatic compounds were detected in almost every historical sample collected. The isomer 1,4-dichlorobenzene was the most frequently detected of these compounds, with a maximum concentration reported as 6,000 ug/kg in sample SED-19 (2002). This sample was obtained at one of the more upstream sample locations. That same location also contained the highest concentrations of 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, and 1,3-dichlorobenzene.

Two additional sediment samples were collected by Weston from the western Site boundary in 1991. The analytical results for these two samples are presented in Table B-17 in Appendix B. The samples were analyzed for selected volatile and semi-volatile organics and metals and cyanide. A sample collected from a drainage swale near Belleville Turnpike (S-1), which feeds into the south ditch, contained 1,4-dichlorobenzene at 2.09 mg/kg. The sample collected from the most upstream end of the South Ditch (S-2) contained 1,4-dichlorobenzene at a concentration of 202 mg/kg. The presence of 1,4-dichlorobenzene and 1,2,4-trichlorobenzene in the upstream

sample (S-1) could be attributable to operations on Lot 50 by Tanatex, an offsite source, or a result of flow reversals associated with high tide events or flooding.

In 2008, five sediment samples were collected by KEY from the South Ditch at the locations shown on Figure 4-9. The analytical results were compared to the New Jersey NRDCSRSs given the absence of sediment criteria for New Jersey, as shown in Table 4-15. Samples from all five locations contained benzo(a)pyrene at concentrations greater than the soil standard of 0.2 mg/kg. Concentrations of benzo(a)pyrene ranged from 0.43 mg/kg to 38 mg/kg. Other PAHs detected in these samples included benzo(a)anthracene and benzo(b)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene and naphthalene. Samples obtained from locations SDWC-1 and SDWC-2 also yielded concentrations of chlorinated aromatic compounds. For example SDWC-1 had a 1,4-dichlorobenzene concentration of 19 mg/kg and SDWC-1 exhibited a concentration of 43 mg/kg.

PCBs and dioxins/furans were also detected in a few samples at concentrations greater than the soil standard used for comparison. PCB concentrations ranged up to 3.3 mg/kg (Aroclor 1254 in SDWC-1). TCDD TEQs ranged from 0.09 ug/kg to 2.5 ug/kg. The maximum TCDD TEQ was detected in the sample obtained closest to the confluence of the South Ditch and the Hackensack River. In contrast to the TCDD TEQs for virtually every other sample of environmental media (and DNAPL) collected at the Site, the TCDD TEQ in sediment was largely contributed by 1,2,3,6,7,8-hexachlorodibenzodioxin rather than by the highly chlorinated dibenzofurans, as was observed in soils and lagoon solids. Given the absence of comparable concentrations of this dioxin congener in the upstream sediment/soft soil samples obtained from the ditch, as well as the tidal nature of the surface waters, it is considered possible that this detection may be associated with regional background concentrations attributable to other sources.

Nonetheless, regardless of the historical observations regarding the sediment impacts in the South Ditch, the South Ditch is no longer considered a potential source of impacts to the Hackensack River given that the sediments were removed in 2011 and were placed in the SCCC Consolidation Area and capped. The stormwater runoff from the Site is now captured by drop inlets and is conveyed to the river via a watertight stormwater system.

4.5.2 Hackensack River Sediments

Sediments in the Hackensack River adjacent to the SCCC Site have been sampled several times in the past. In 1996, sediments were sampled by ERM and analyzed for selected volatile organics and naphthalene, pH and TOC along two transects extending into the river. The analytical results for these samples are presented in Table B-18 in Appendix B.

In 2000, three additional transects were established and sampled by ESI in the north, south, and central reach of the River adjacent to SCCC. Each of these transects was sampled at three depths (1, 5, and 10 feet) at each of three locations extending out from the shoreline. These samples were analyzed for selected VOCs, SVOCs, TCDD, metals and TOC. The analytical results for these samples are presented in Table B-17 in Appendix B. For the most part, hexavalent chromium was not detected in these samples, although two locations (Location A2 at 5 feet and Location C1 at 1 foot) yielded detections of hexavalent chromium above 20 mg/kg. Hexavalent chromium concentrations were below 20 mg/kg (or not detected) in the remainder of the samples (26) and core locations (7). Chlorinated aromatic hydrocarbons and PAHs were detected at almost every location.

Concentrations of the chlorinated aromatics were substantially less than any concentrations observed on Site. For example, the highest concentrations of 1,2,4-trichlorobenzene and 1,4-dichlorobenzene were 43 mg/kg and 759 mg/kg, respectively. These maximum concentrations were detected at a depth of 10 feet (i.e., below the biotic zone) in the sample obtained from location TPS-A2. This sample location was situated adjacent to the upstream end of the SCCC Site. Given the depth and location of these occurrences, the detection of these constituents was most likely attributable to groundwater discharge rather than overland runoff in spite of their location near a storm sewer outfall. By contrast, concentrations in the shallow samples obtained at this location (i.e., a 1 foot sample and a 5 foot sample) yielded non-detects for these two analytes. Concentrations of these analytes in remaining samples ranged to maximum of 2.97 mg/kg for 1,2,4-trichlorobenzene (10 foot sample from location TPS-A3 located near TPS-A2 on the same transect but further from the shorelines) and a maximum of 26.4 mg/kg for 1,4-dichlorobenzene (10 foot sample from location TPS-A1 also located near TPS-A2 on the same transect but closer to shore).

PAHs were detected at relatively low concentrations in sediment samples obtained from depths of 1 foot and 5 feet. Concentrations of relatively water insoluble PAHs ranged as high as 281 mg/kg for benzo(a)pyrene in the TPS-C1 sample (1 foot). This sample was obtained at the downstream end of the Site near the confluence of the South Ditch and the Hackensack River. Similar to the remedial effort completed for the SCCC and Diamond sediments, sediments along the Seaboard Site frontage were also excavated/dredged as part of implementation of the NJDEP-approved Seaboard Site Remedial Action Work Plan. The most notable PAH detections in the SCCC frontage river sediments were the detection of naphthalene at concentrations of 200 mg/kg in the sample from TPS-A1 at a depth of 1 foot and at 4,570 mg/kg in the sample from TPS-B1 (1 foot). As indicated, the A transect was located near the former outfall from the storm sewer located between the SCCC and Diamond Sites and the detection of naphthalene at this location was most likely attributable to either direct discharge to the river via the storm sewer, the storm sewer envelope, or possibly as a result of groundwater discharge from the shallow fill zone.

The B transect was located just downstream of the A transect and was adjacent to location of the former naphthalene subliming building. The concentrations in this sample likely resulted from overland transport from the historical naphthalene processing operations. The naphthalene concentrations in the fill and deep sand wells located near this transect (i.e., MW-14U and MW-14L) were 6,540 ug/L and 5,020 ug/L, respectively. These concentrations are considered insufficient to account for the detection of naphthalene at a concentration of 4,750 mg/kg in the adjacent sediments given the relatively low sorption potential of naphthalene. TCDD was not reported as being present in any of the sediment samples obtained during the 2000 sampling event.

In 2008, sediments from 13 locations in the Hackensack River were sampled by KEY. Eight of these locations fronted the SCCC Site, and the samples were analyzed for VOCs, SVOCs, dioxins/furans, PCBs (including all congeners and homologues), pesticides and herbicides, metals, hexavalent chromium, RCRA characteristics and some indicator parameters. Four of the locations fronted the Diamond Site and the samples were analyzed for VOCs, SVOCs, dioxins/furans, PCBs, metals, RCRA characteristics and some indicator parameters. Sampling

occurred at two depths (0 to 1 foot and 2 to 3 feet) at each location. The sampling was conducted to determine both the lateral and vertical extent of potentially impacted sediments in the river, as well as to determine the appropriate placement location of excavated sediments (SCCC vs. Diamond Consolidation Areas) based on comparison to the on-Site chemical characteristics of environmental media in accordance with the USEPA Area of Contamination Policy, as previously discussed.

The analytical results for the sediment samples collected along the SCCC Site frontage are presented in Table 4-16, and those for the Diamond Site frontage are presented in Table 4-17. Figure 4-10 shows the physical distribution of PAHs, PCBs and chromium for all of these samples. Samples along the SCCC Site frontage exhibited consistent concentrations of PAHs, while two sample locations from the Diamond Site frontage appeared similar to those from the SCCC Site frontage.

All sediments from this entire study area have been excavated to a depth of a minimum of three feet, to a distance of 50 feet from the shoreline. Sediments from the SCCC Site frontage and the two locations from the Diamond Site frontage (HRWC-4 and HRWC-2) that were similar in chemical make-up were placed in the SCCC Consolidation Area in accordance with the USEPA- and NJDEP-approved like-versus-like demonstration. Remaining sediments from the Diamond Site frontage were excavated and placed in the Diamond Consolidation Area.

5.0 PRELIMINARY CONCEPTUAL SITE MODEL

A preliminary Conceptual Site Model (CSM) was developed for the SCCC Site under current (2012) Site conditions. This model is based on consideration of the Site modifications resulting from the implementation of the IRA, including but not necessarily limited to, the existence of the fully-enclosing perimeter subsurface barrier wall system, the operation of the groundwater and DNAPL collection and treatment system (i.e., the HCTS), the presence of historical and new cover materials, the existence of a replacement storm water control system (i.e., butt-fused high density polyethylene storm water conveyance piping and associated appurtenances), and onsite consolidation and capping of impacted materials including the South Ditch soft soils/sediments and near shore Hackensack River sediments. Under current Site conditions, the potential for Site-related exposures is considered minimal as is the potential for migration of any constituents to offsite locations. Figure 5-1 is a graphical representation of the CSM. Constituents of Interest (COI), fate and transport characteristics of the COI, potential migration pathways, potential receptors and exposure routes are discussed in the remainder of this section.

5.1 CONSTITUENTS OF INTEREST

Based on chemical-analytical data generated as a result of sampling and analysis over approximately 30 years, multiple constituents of interest have been identified for the Site. In broad terms, these constituents, or classes of constituents, are as follows:

- Chlorinated benzenes
- PAHs (primarily naphthalene)
- Polychlorinated Biphenyls (PCBs)
- Dioxins/Furans (PCDDs/PCDFs)
- Hexavalent chromium

While other specific analytes have been detected in various Site media, these constituents constitute the COI based on their historical use (or placement at the Site), their prevalence in environmental media, and the measured concentrations.

5.2 FATE AND TRANSPORT EVALUATION

This section presents a brief summary of general fate and transport information for the major chemicals or classes of chemicals observed in various environmental media at the Site as well as general information indicative to transport at the Site. Major classes of chemicals detected include chlorinated aromatic compounds such as chlorobenzene, dichlorobenzene isomers (1,4-dichlorobenzene being the most prominent) and 1,2,4-trichlorobenzene; PCBs (Aroclor 1260 being the most prominent); PCDDs/PCDFs (1,2,3,6,7,8-heptachlorodibenzofuran [or HCDF] being a representative congener); and PAHs (naphthalene being the most prominent by far). In addition, various metals have been detected in Site media, with chromium being the metal most frequently detected.

A general indication of the fate and potential environmental mobility of the various organic chemicals, or classes of organic chemicals is provided by typical chemical-physical property information. A summary of relevant chemical-physical information for selected organic constituents, including molecular weight (MW) water solubility (S), vapor pressure (P_v), organic carbon partition coefficient (K_{oc}), dimensionless Henry's Law Constant (H'), and bioconcentration factor (BCF) for aquatic organisms is provided in the following table.

Representative Constituents of Interest	MW (g/mol)	S (mg/L)	P_v (mm Hg)	K_{oc} (L/kg)	H' (none)	BCF (L/kg)
Chlorobenzene	1.13E+02	4.98E+02	1.20E+01	2.34E+02	1.27E-01	1.78E+01
1,4-Dichlorobenzene	1.47E+02	8.13E+01	1.74E+00	3.75E+02	9.85E-02	4.20E+02
1,2,4-Trichlorobenzene	1.81E+02	4.90E+01	4.60E-01	1.36E+03	5.81E-02	2.08E+03
Aroclor 1260	3.95E+02	1.44E-02	1.30E-07	3.50E+05	1.37E-02	-
HCDF	4.09E+02	1.35E-06	3.53E-11	6.50E+05	5.76E-04	-
Naphthalene	1.28E+02	3.10E+01	8.50E-02	1.54E+03	1.80E-02	8.45E+01

Physical property information obtained from the Oak Ridge National Laboratory Risk Assessment Information System. Available online at http://rais.ornl.gov/cgi-bin/tools/TOX_search?select=chem_spef.

As is shown in the preceding table, the various chlorinated aromatic hydrocarbons and naphthalene are sparingly soluble in water and exhibit some volatility in comparison to the representative dioxin/furan and representative PCB. The distribution of these constituents at the Site is consistent with their physical properties; these compounds have been identified in groundwater samples obtained at the Site. PCBs and PCDDs/PCDFs have been identified in

DNAPL samples obtained at the Site given that they are expected to be soluble in organic solvents such as the chlorinated aromatic hydrocarbons that constituent a large fraction of the DNAPL.

All of the chemicals exhibit some affinity for sorption to soils as evidenced by their organic carbon partition coefficients, although the representative dioxin/furan and representative PCB have a much greater propensity for sorption to the solid phase which renders these COI essentially immobile in the aqueous phase. The detection of relatively high concentrations of all of these compounds in solid media such as the lagoon solids, soil, and sediment, particularly in comparison to the concentrations detected in ground water and surface water, is consistent with their sorptive nature. Although the referenced source does not report BCFs for the representative dioxin/furan and the representative PCB, these compounds are considered highly lipophilic in general and are expected to bioaccumulate. The more heavily chlorinated aromatics can also be expected to bioaccumulate.

All of the representative chemicals are considered relatively persistent in the environment, particularly the representative dioxin/furan and PCB. Chlorinated aromatics are more resistant to biodegradation than many commonly encountered classes of chemicals. While naphthalene is generally recognized to be somewhat biodegradable, such biodegradation is more likely to occur in locations where concentrations are relatively low (i.e., downgradient ground waters and sediments). Biodegradation of naphthalene in potential source areas at the Site is expected to be limited given the very high concentrations encountered in source materials such as the lagoon solids (e.g., percent levels).

Of the various metals detected in Site media, chromium is considered to be of the greatest potential concern from an environmental fate and transport perspective given the fact that high concentrations of hexavalent chromium, the water soluble species, are present at the Site. However, Site conditions are somewhat favorable in that an organic rich carbon layer (i.e., the Meadow Mat) exists directly below the fill. Hexavalent chromium has not penetrated this organic layer to any appreciable extent given the ability of organic compounds to act as reducing agents for chromium. Chromium fate appears to be largely controlled by reductive processes; it is reduced to the relatively insoluble trivalent species by either the Meadow Mat or by sediments

high in organic carbon content. Lead has been encountered primarily in solid media sampled at the Site, and appears to be bound to soils and sediments. Migration of lead at the site is expected to be primarily controlled by erosional processes (particulate transport).

In general, Site conditions appear to be somewhat favorable with respect to the fate and transport of the constituents of interest. Although some limited migration of the constituents of interest is evidenced by the river sediment samples, as previously discussed, and by offsite migration of DNAPL in the sand unit to the south onto the Seaboard Site and to the north onto the Diamond Site (possibly as a result of movement along the top of the varved clay), the constituents appear to have migrated to a much lesser extent than might be expected given the high concentrations encountered. This is particularly true for the constituents present in the former lagoons. For example, although percent levels of naphthalene were encountered in the lagoon solids, groundwater concentrations were substantially lower, and concentrations in sediment samples obtained near the lagoons were many orders of magnitude lower.

The migration of dioxins/furans also appears to have been similarly limited. In spite of the detection of high concentrations on the Site, concentrations in sediment in the potential receiving surface water body are relatively low and the constituent make up with respect to PCDD/PCDF in the river is markedly different than that in on-site soil or sediment. Similarly, hexavalent chromium has not been detected to any significant extent in the adjacent river.

5.3 POTENTIAL MIGRATION PATHWAYS

Historically, the analytical data for various Site media provided direct indications of the potential for migration of constituents via multiple pathways. Evidence of prior potential subsurface migration and discharge of constituents to the Hackensack River is apparent based on the concentrations of chlorinated aromatic hydrocarbons in deep sediment samples although such compounds appear to have been attenuated prior to reaching the biotic zone. Evidence of potential gravimetric migration of DNAPL was apparent via consideration of the presence of DNAPL at offsite locations to the south of the Site. Although overland runoff was considered to be of particular concern given the detection of high concentrations of constituents in ditch sediments/soft soils and in the lagoon solids, this potential migration pathway appears to have

been limited based on the measurements obtained for samples from the end of the South Ditch and from the Hackensack River. Atmospheric erosion and transport of wind-blown dust was also considered a potentially significant migration pathway and, in part, precipitated the installation of IRM cover materials and dust fences and the process area Removal Action required by the USEPA.

Under existing conditions, all potential migration pathways have been substantially addressed. Installation of the slurry wall and steel sheet pile wall has effectively addressed the potential for discharge of constituents to adjacent properties (beyond the barrier wall) and the Hackensack River via subsurface routes. In addition, the slurry wall was designed to encompass the DNAPL that extended onto the Seaboard Site to the south of the SCCC Site and this objective was also accomplished. The groundwater collection and treatment system is operational and is effectively reducing the mobility and the volume of constituents of interest at the Site and will continue through long term operation and maintenance of the system. The removal of sediments/soft soils from the South Ditch and from the Hackensack River, in concert with construction of a water tight stormwater management system, has also served to address potential overland transport pathways. Finally, the construction of the SCCC Consolidation Area, and the consolidation therein of various impacted materials under a cover, coupled with the construction of the IRMs has served to address the potential for atmospheric transport of Site-related constituents. The IRMs and the Consolidation Area will require ongoing maintenance and monitoring.

5.4 POTENTIAL RECEPTORS AND EXPOSURE ROUTES

Surrounding land use was reviewed with a primary emphasis on the location of sensitive environmental areas and human receptors. Land use within the 1,000-foot radius of the Site is industrial in nature and no residential areas or sensitive human receptors are known to exist within this radius.

The following is a list of the closest known schools, medical facilities, day care centers, and recreational areas, including the type, name, address, approximate ordinal direction relative to the Site, and approximate distance from the Site:

Type	Name	Address	Direction	Distance	
				Feet	Miles
School	Elementary School 23	143 Romaine Ave. Jersey City, NJ	SE	9,350	1.77
School	Dr. Charles P DeFuccio School	214 Plainfield Ave. Jersey City, NJ	SE	8,450	1.60
Recreation Area	Laurel Hill Park	New County Road Secaucus, NJ	NNE	2,750	0.52
Recreation Area	Lincoln Park	State Route 440 Jersey City, NJ	SSE	5,700	1.08
Daycare	St. Elizabeth Child Care Center	129 Garrison Ave. Jersey City, NJ	SE	9,650	1.83
Hospital	West Hudson Hospital	206 Bergen Ave. Kearny, NJ	WNW	13,350	2.53
Hospital	Jersey City Medical Center	50 Baldwin Ave. Jersey City, NJ	SW	12,720	2.41

As shown in the preceding table, no sensitive human receptors are located proximate to the Site. A Public Health Assessment was completed for the Site in 2005 (ATSDR, April 5, 2005). At that time, no completed human exposure pathways were identified because the Site had restricted entry from the land-side, and no Site-related constituents of interest had been measured in marine life. However, ATSDR considered recreational users of the river to be potential intermittent receptors, as well as Site trespassers and Site visitors, but these exposures were considered to be minimal and infrequent.

Fisherman at Laurel Hill Park (located approximately 0.5 miles upstream of the Site) and at the confluence of Penhorn Creek and the Hackensack River (located approximately 0.5 miles downstream of the Site) were identified by the ATSDR as potential receptors in spite of the fish consumption advisories in place, although a complete exposure pathway had not been confirmed. Fish consumption advisories have been issued for the River as part of the Newark Bay complex advisory, and there are no commercial fisheries. As a result of the completion of the IRA and other responses at the Site, this is no longer considered a viable exposure pathway from the Site.

The ATSDR concluded that the Site posed an *indeterminate public health hazard* via fish/shellfish consumption and air pathways. The ATSDR also concluded that the Site posed *no apparent public health hazard* as a result of potential exposure associated with trespassing and/or

recreational use of the river. Given the completion of the IRA and the various other responses, including the Removal Action, these pathways are also considered incomplete under current Site conditions.

The Site is located adjacent to the Hackensack River at the southern end of the Hackensack Meadowlands District (HMD). The HMD is an important ecological resource and is an Atlantic flyway stopover and nesting point for migratory birds. No federally-listed threatened or endangered species have been observed onsite to date. According to the ATSDR Public Health Assessment, state-listed species such as northern harrier hawks (*Circus cyaneus* – state endangered list), black-crowned night herons (*Nycticorax nycticorax* – state threatened list), and yellow-crowned night herons (*Nyctanassa violacea* – state threatened list) were alleged to roost at the Site, but no actual observation of these species has occurred at the Site. Additionally, according to the United States Fish and Wildlife Service, state- and federally-listed threatened or endangered species have historically been observed in the Hackensack River watershed, and include the following: bald eagle (*Haliaeetus leucocephalus* – state endangered list); shortnose sturgeon (*Acipenser brevirostrum* – federal endangered list), dwarf wedgemussel (*Alasmidonta heterodon* – federal endangered list), bog turtle (*Clemmys muhlenbergii* – federal threatened list), and Indiana bat (*Myotis sodalist* – federal endangered list).

Prior to implementation of the IRA, the lagoons represented a potential source of constituent releases at the Site. The South Ditch, which historically received surface runoff from production areas, was also a potential source of constituent releases at the Site prior to implementation of the IRA. However, at the current time, both of these potential sources have been eliminated as a result of the IRA remedial actions, including stabilization, backfilling, and covering of the lagoons; removal of the South Ditch sediments; and concurrent stormwater management system improvements and expansion of cover material.

DNAPLs are considered to be on-going potential sources of dissolved-phase constituents in groundwater in both the fill material and the deeper sand unit. However, pathways associated with the DNAPL are also currently incomplete as the Site is now fully enclosed by a slurry wall and sheet pile barrier wall, with collection and treatment of onsite groundwater in the HCTS.

There are no known wells for private or public drinking water supply within one mile of the Site (KEY, May 2011). No drinking water intakes are located in the Hackensack River in this tidal reach and the Town of Kearny is supplied by the Wanaque Reservoir in Bergen County.

At this time, the following potential exposure pathways have been identified:

- Potential inhalation of volatile organic compounds associated with former industrial releases – This pathway is not considered to be significant, even with no administrative or engineering controls in place because volatile organics are not significant component in surface matrices.

- Potential inhalation of fugitive dust emissions – This pathway is considered to be potentially significant in the future, although minimal at present. If the existing cover materials were disturbed by future construction or utility work, workers potentially could be exposed to multiple constituents of interest present in the fill material. Fugitive dust emissions from disturbed areas could pose a risk to on-Site employees or occasional Site visitors/trespassers barring the use of administrative controls at the Site. In addition, offsite industrial employees could experience minor exposures from disturbed soils if they were to be disturbed during construction.

- Potential contact with surface or subsurface soils – This pathway is currently incomplete as a result of the extensive interim measures and interim response actions undertaken to date as part of the IRA and the IRMs. However, if the existing covers were to be disturbed, onsite workers or visitors potentially could experience a risk associated with such exposure.

- Potential contact with groundwater, surface water or sediments impacted by DNAPL or leaching from fill materials – At the current time, these pathways are also incomplete. The barrier walls contain all DNAPL. Recoverable DNAPL is currently collected in multiple DNAPL recovery wells and is containerized for offsite disposal. While DNAPL may have migrated in the past, this pathway is currently under control

because the barrier walls were aligned to encompass all DNAPL locations. Likewise, groundwater is contained within the limits of the barrier walls, and no potable wells currently exist in the vicinity of or near to the Site.

In conclusion, under current Site conditions, there are no known complete exposure pathways. The IRMs and IRA completed as of 2012 have covered and/or capped all surficial materials, removed significant structures with the exception of four historical structures associated with the historic operations of Thomas A. Edison, Inc., encircled the Site and all or parts of adjacent properties with a subsurface barrier wall, stabilized soft surficial materials in the former lagoons, and removed sediments and impacted soils and placed them in an engineered consolidation area within the Site.

However, the absence of complete exposure pathways relies on the maintenance of these engineered controls and a continued prohibition against disturbance of the cover materials. Although development of groundwater as a drinking water source is considered a virtual impossibility in this area, an institutional control (e.g., groundwater use prohibition) is considered an appropriate and necessary response. Access to the Site is restricted by a chain-link fence along Belleville Turnpike, a high railroad bed elevation north of the Diamond Site, and major roadways and access ramps as well as railroad tracks along the Seaboard Site south of the SCCC Site. These difficult access conditions greatly reduce the potential for trespassers to access the Site. Under foreseeable circumstances, the primary potential exposure route is associated with disturbance of the soil by construction or utility workers and potential exposures to these workers via inhalation of fugitive dust or dermal contact with and incidental ingestion of the soils located beneath the covers. However, these potential exposures can be effectively managed via administrative controls (i.e., the establishment of appropriate institutional control and procedures to be followed during any future construction that involves disturbance of the IRM/IRA covers).

6.0 POTENTIAL DATA NEEDS

The SCCC Site has been investigated over approximately 30 years. Numerous samples of every environmental medium have been collected and analyzed to characterize the Site in terms of the primary constituents of interest, and to assess potential migration pathways through which these materials may result in human or ecological exposures. As appropriate, development of the RI/FFS Work Plan will consider potential data needs for the purposes of developing exposure point concentrations for human health and ecological risk assessments. The primary environmental media are discussed below, with the identified data gaps that remain to be filled.

6.1 BUILDINGS AND PROCESS STRUCTURES

All buildings on the property have been characterized and demolished, with the exception of four structures identified as potential structures of historic significance located in Lot 50 in the southwestern corner of the Site. These buildings (identified as Buildings 1, 2, 3, and 4) are currently dilapidated, but access to the Site is partially restricted by fencing along Belleville Turnpike, as well as by topographic and land use conditions that impede access. The HCTS treatment building is a new corrugated steel building housing the groundwater treatment system. This structure is located in the south central portion of the Site. No additional analytical data needs have been identified for the remaining buildings and slabs on the Site. Should the remaining Lot 50 buildings be demolished, some characterization of the demolition debris may be necessary to complete waste profiles for disposal facility acceptance.

Additional cultural resources data for the Edison Battery Plant area on Lot 50 will be acquired in conjunction with the RI as necessary to fulfill the requirements of the National Historic Preservation Act. Ultimately, it is anticipated that a Memorandum of Agreement will be drafted and an architectural recordation effort will be undertaken. EPA will serve as the lead contact for all consultations with the New Jersey State Historic Preservation Office and the Advisory Council on Historic Preservation.

6.2 SOILS

Additional sampling of surface soils was proposed in the SRI work plan to further delineate the extent of PCDD/PCDFs. These samples were collected in conjunction with the PDI field effort. No additional surface soil sampling is necessary. Subsurface soils at the SCCC Site have been characterized through numerous soil borings and borings drilled for well or piezometer installation. Any subsurface soil materials located above the varved clay are at present contained within the boundaries of the subsurface slurry and sheet pile walls.

In an effort to confirm the limited potential for downward vertical migration of impacted groundwater and DNAPL at the SCCC Site, samples of the varved clay underlying the sand unit will be collected and analyzed. In addition, further investigation of the horizontal extent of DNAPL in the vicinity of DNAPL delineation boring D-4, where a 1,4-dichlorobenzene concentration of 5,200 mg/kg was detected at a depth of 14.5-15 feet, is considered appropriate. The majority of the historical investigations have focused heavily on the former process area. However, as a result of the detection of DNAPL on the western portion of the property (i.e., on Lot 50) additional subsurface investigation efforts are considered appropriate for this area as well.

6.3 GROUNDWATER

A series of 26 hydraulic control wells located on the SCCC Site (10), the Diamond Site (11) and the Seaboard Site (5) are piped to the HCTS and pumped to convey groundwater to the treatment facility. Treated water from the HCTS is discharged to the Hackensack River via a permitted outfall. These wells are effectively removing impacted groundwater from within the barrier wall containment system. The network was designed based on historical groundwater information, numerical groundwater modeling, and a comprehensive round of groundwater sampling and analysis during the PDI. No additional groundwater characterization is needed to assess Site conditions or to continue to operate the collection and treatment activities.

Boundary piezometers are in place to monitor the effectiveness of the hydraulic control wells in maintaining an inward hydraulic gradient across the subsurface slurry wall. Routine monitoring of these piezometers is a necessary element of the program to monitor the effectiveness of the groundwater control systems. In addition, monitoring of inflow to and outflow from the HCTS is ongoing.

6.4 SURFACE WATER AND SEDIMENT

Impacted sediments identified in the former South Ditch have been removed, and the ditch has been backfilled and a new storm drainage system has been installed. The excavated sediments were placed in the SCCC Consolidation Area. The former Dead Horse Creek was long ago replaced with an underground stormwater drain. No intermittent or permanent surface waters

currently exist on the Site. Hence no additional surface water or sediment sampling is required for onsite areas.

Near-shore sediments have been removed from portions of the Hackensack River fronting both the SCCC and Diamond Sites. Prior to their removal, sampling and analysis of the sediments were performed in accordance with the Phase II SRIWP. These sediments were placed in the respective onsite consolidation areas located on each Site. All potential for discharges to the river are currently incomplete as a result of the presence of the slurry wall and the sheet pile wall, or as a result of the improvements to the stormwater management system, and therefore no onsite materials have the potential to migrate to the river in the future. No additional surface water or sediment characterization within the Hackensack River in the vicinity of the SCCC Site is considered necessary at this time.

6.5 DATA NEEDS SUMMARY

In conclusion, a limited number of additional data needs have been identified for the Site. It is considered appropriate that a detailed RI work plan be prepared to address the collection of additional data for the Site, and that this RI work plan supplants the existing Phase II Supplemental Work Plan previously provided to the NJDEP. The following have been identified as additional data needs for the Site:

- Sampling and analysis of the varved clay to verify the vertical extent of impacts;
- DNAPL delineation on the western portion of the SCCC property (i.e., Lot 50); and,
- DNAPL delineation in the vicinity of boring D-4 on the Seaboard property.

Additional information such as groundwater elevation data and DNAPL thickness measurements are acquired as part of the ongoing monitoring program for the completed groundwater remedial measures and are not, therefore, an additional data need for the Site.

7.0 SUMMARY AND CONCLUSIONS

The SCCC Site has been investigated since the early 1980s in response to an Administrative Consent Order with the NJDEP. Under the conditions of this ACO, SCCC was required to implement interim remedial measures to prevent contact with materials in the lagoons, to conduct a remedial investigation and feasibility study, and to implement remedial alternative(s) as appropriate.

Sections 2 through 6 of this report summarized the investigations conducted to date and the chemical-analytical data collected to characterize the Site and to facilitate the design and installation of several interim measures, interim response actions, and removal actions. Some of these activities have been quite extensive (e.g., removal of impacted sediment from the Hackensack River, the installation of a slurry wall/sheet pile wall to prevent off-Site migration of Site-related constituents, or the construction of an on-Site consolidation area to isolate solid materials removed during implementation of such measures and prevent contact with such materials). Other activities have been more localized (e.g., the removal of a former transformer pad and the removal of soils/sediments from the former South Ditch). Other activities have been completed to mitigate exposures or migration of Site constituents (e.g., the upgrade of the northern storm sewer, the removal of buildings including asbestos-containing materials, and closure of septic tanks).

This widespread and detailed scope of investigations and activities conducted to date, with the remaining minor field activities discussed in Section 6, have or will adequately define the Site and the nature and extent of Site impacts in order to assess whatever potential, if any, may remain for exposures to Site-related constituents either on-Site or off-Site. Continued operation and monitoring of the hydraulic control system and associated DNAPL removal, as well as maintenance of the cover materials on the Site will minimize future potential risks associated with the Site. In particular, operation of the hydraulic control system in concert with the presence of the barrier walls ensures that no Site-impacted groundwater or soils migrate outside the containment barriers.

In summary, existing data are considered adequate to characterize Site conditions although it is considered appropriate that limited additional investigation activities be completed for the Site in accordance with an approved RI work plan. Furthermore, a Focused Feasibility Study of remedial alternatives should be prepared to assess the efficacy of existing remedial measures and to identify the need for any additional remediation work for the Site.

8.0 REFERENCES

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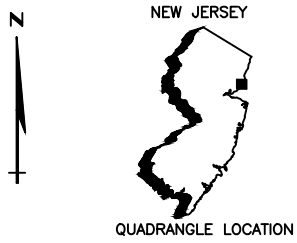
FIGURES



COOPERATING PARTIES GROUP

DRWN: SCC	DATE: 11/05/12	KEY ENVIRONMENTAL INCORPORATED
CHKD: RJH	DATE: 11/05/12	
APPD: JSZ	DATE: 11/05/12	
SCALE: 1"= 2000'		

SITE CHARACTERIZATION SUMMARY REPORT
STANDARD CHLORINE CHEMICAL CO., INC. SITE
KEARNY, HUDSON COUNTY, NEW JERSEY

REFERENCE: USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLES OF JERSEY CITY, AND WEEHAWKEN, NEW JERSEY

ISSUE DATE:

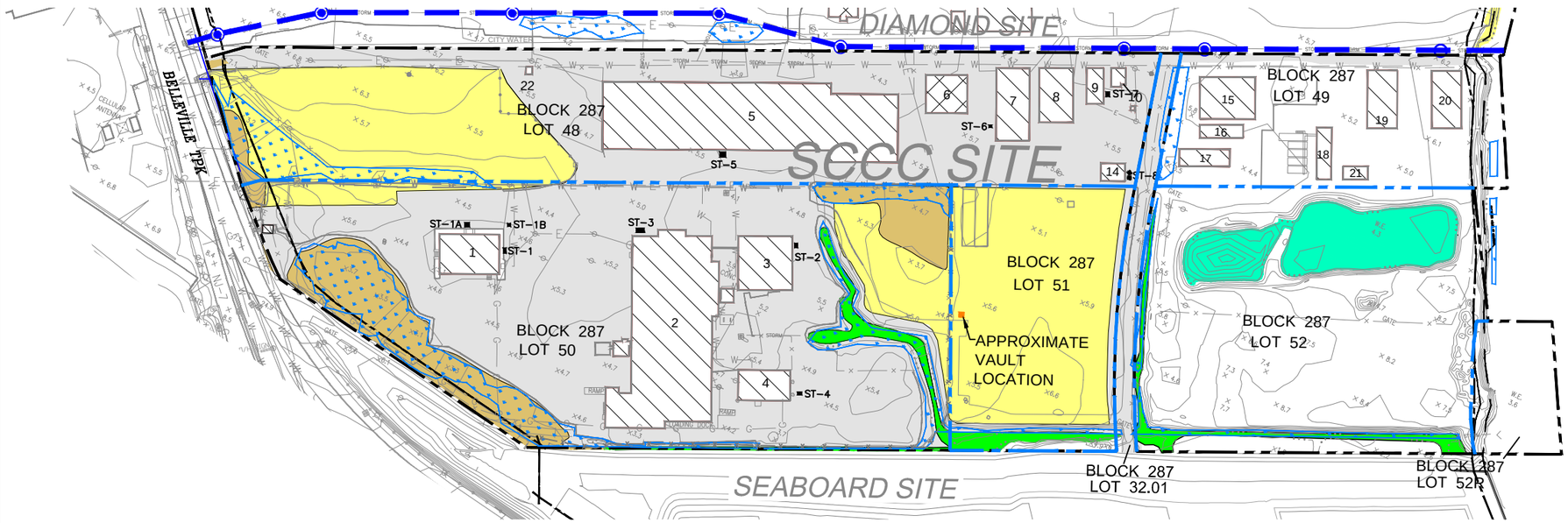
KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

SITE LOCATION MAP

PROJECT NO: 2012-14

FIGURE 1-1

y:\00civil\kearny\site characterization summary report\figure 1-1 site location map.dwg Last Saved By: Scomer 11/26/2012 2:58 PM Plotted By: Shelly Comer 12/7/2012 12:11 PM Scale: 1:1.016827



LEGEND

- PROPERTY BOUNDARY
- EXISTING SURFACE COVER IRM COMPRISED OF ASPHALTIC CONCRETE
- EXISTING SURFACE COVER IRM COMPRISED OF SOIL
- EXISTING SURFACE COVER IRM COMPRISED OF GEOMEMBRANE OVERLAIN WITH AGGREGRATE
- EAST AND WEST LAGOONS
- SOUTH DITCH SOFT SOILS
- EXISTING WETLANDS
- EXISTING BUILDING
- FORMER BUILDING FOUNDATION
- EXISTING UTILITY POLES
- EXISTING LIGHT STANDARD
- EXISTING OVERHEAD POWER LINE
- EXISTING WATER LINES
- EXISTING GAS LINES
- EXISTING STORM DRAIN
- 8-FOOT HIGH SECURITY FENCE WITH DUST CONTROL
- EXISTING STORM DRAIN (48" PIPE)
- EXISTING DROP INLET
- SEPTIC TANK LOCATION
- LOT BOUNDARY
- APPROXIMATE VAULT LOCATION (CONTENTS REMOVED ON JUNE 26, 2008)

0 200 400 FEET

COOPERATING PARTIES GROUP

DRWN:	SCC	DATE:	11/05/12
CHKD:	RJH	DATE:	11/05/12
APPD:	JSZ	DATE:	11/05/12
SCALE:	AS SHOWN		

KEY ENVIRONMENTAL INCORPORATED

SITE CHARACTERIZATION SUMMARY REPORT
STANDARD CHLORINE CHEMICAL CO., INC. SITE
KEARNY, HUDSON COUNTY, NEW JERSEY

HISTORICAL SITE ARRANGEMENT SHOWING INTERIM MEASURES (2008)

PROJECT NO: 2012-14

FIGURE 2-1

REV #	DATE	DESCRIPTION	APPD
1	03/22/13	ADDED VAULT LOCATION.	JSZ

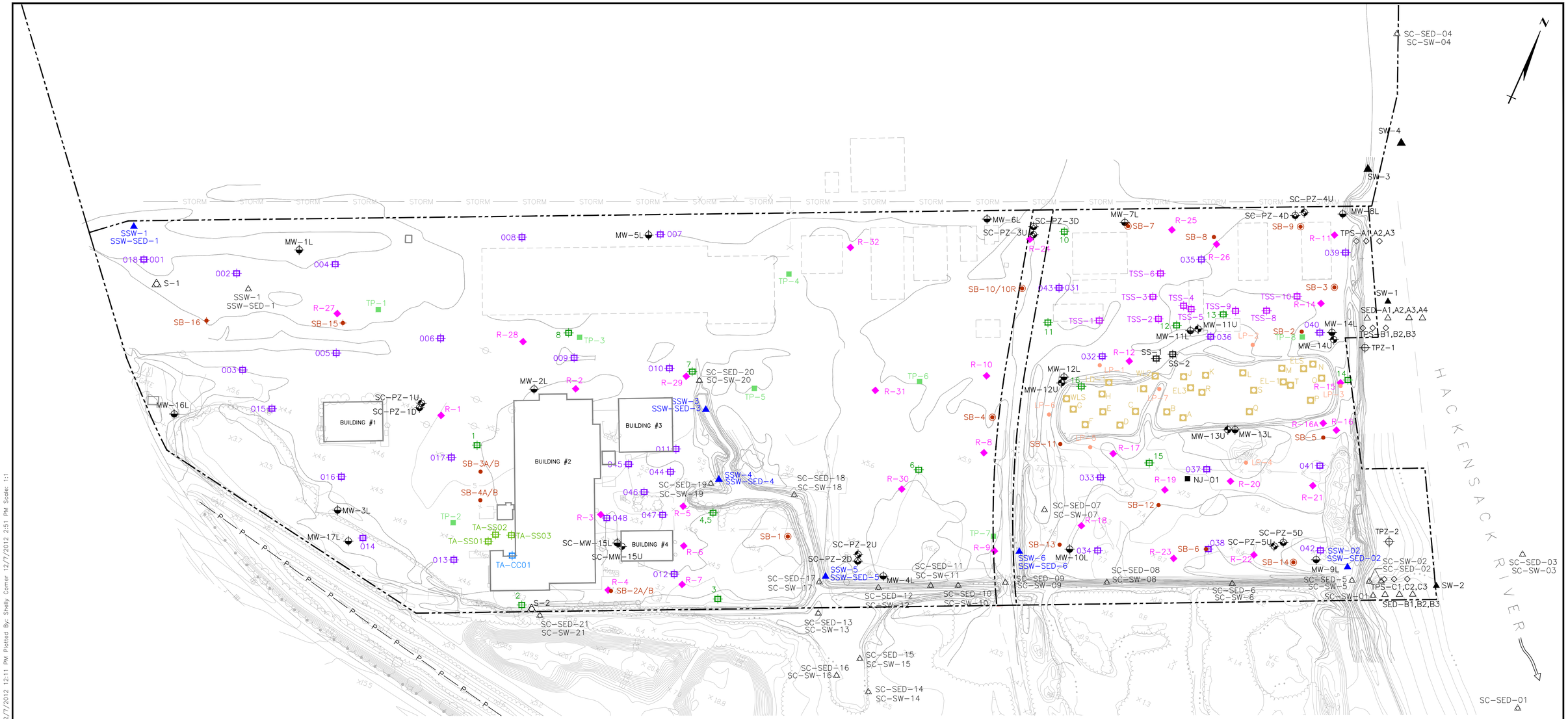
REFERENCE:

1. EXISTING GROUND SURFACE CONTOURS PER AIR SURVEY, DULLES, VIRGINIA, APRIL 14, 2001. HORIZONTAL REFERENCE: NEW JERSEY STATE PLANE COORDINATES (NAD 1927). VERTICAL REFERENCE:NATIONAL GEODETIC VERTICAL DATUM (NGVD 1929).
2. PROPERTY BOUNDARY SHOWN HEREON FROM SHEET 1 OF 1 TITLED "SURVEY OF PROPERTY, TAX LOTS 32.02, 46, 47 & 47R, BLOCK 287, TAX LOTS 48, 49, 50, 51, 52 AND 52R, BLOCK 287, TOWN OF KEARNY, HUDSON COUNTY, NEW JERSEY," DATED JULY 1, 2009 (REVISION 2: JULY 29, 2009), PREPARED BY DYKSTRA ASSOCIATES, PC.
3. EXISTING WETLANDS PER WETLAND DELINEATION BY PRINCETON HYDRO, LLC FOR KEY ENVIRONMENTAL, INC. PERFORMED IN MARCH 2009.

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

y:\0Civil\kearny\site characterization summary report\figure 2-1 historical site conditions.dwg Last Saved By: Scomer 3/15/2013 8:18 AM Plotted By: Shelly Comer 3/22/2013 4:40 PM Scale: 1:1



LEGEND

- SITE BOUNDARY
- FENCELINE
- EXISTING BUILDING/STRUCTURES
- FORMER BUILDING/STRUCTURES
- BUSH/TREELINE
- RIVER/CHANNEL/ LAGOON
- EXISTING GROUND SURFACE ELEVATION
- UTILITY POLE
- GUARD RAIL
- STORM DRAIN
- RAILROAD LINE

- 8 SURFACE SOIL SAMPLE LOCATION (WESTON–1985)
- SS–1 SURFACE SOIL SAMPLE LOCATION (WESTON–1987)
- TSS–1 TANK AREA SURFACE SOIL SAMPLE LOCATION (WESTON–1990)
- TA–SS01 TRANSFORMER AREA SURFACE SOIL SAMPLE LOCATION (KEY–1998)
- TA–CC01 TRANSFORMER AREA CONCRETE CHIP SAMPLE LOCATION (KEY–1998)
- 001 SURFACE SOIL SAMPLE LOCATION (FRENCH AND PARRELLO–1991)
- SB–1 SOIL BORING LOCATION (SAMPLE COLLECTED)(ERM–1996)
- SB–2 SOIL BORING LOCATION (VISUAL/FIELD SCREENING)(ERM–1996)
- SB–2A/B SOIL BORING LOCATION (WESTON–1992)
- SB–15 SOIL BORING LOCATION (KEY–1998)
- LP–5 LAGOON PERIMETER SOIL BORING LOCATION (WESTON–1985)
- R–25 ROST BORING LOCATION (KEY–1998)
- B, LD–1, WL2, ELS LAGOON SAMPLES (WESTON–1985, 1987, 1991)
- TP–1 TEST PIT SUBSURFACE SOIL SAMPLE LOCATION (WESTON–1993)

- SC–PZ–1U SHALLOW (FILL) ZONE PIEZOMETER LOCATION (WESTON–1983)
- SC–PZ–1D SAND ZONE PIEZOMETER LOCATION (WESTON–1983)
- TPZ–1 TEMPORARY PIEZOMETER LOCATION (WESTON–1992)
- MW–11U SHALLOW (FILL) ZONE MONITORING WELL LOCATION (WESTON–1990)
- MW–11L SAND ZONE MONITORING WELL LOCATION (WESTON–1990; KEY–1998)
- SW–1 SURFACE WATER SAMPLE LOCATION (ERM–1996)
- SSW–1, SSW–SED–1 SURFACE WATER AND SEDIMENT SAMPLE LOCATION (WESTON–1991)
- SC–SED–04, SC–SW–04 SURFACE WATER AND SEDIMENT SAMPLE LOCATION (USEPA–2002)
- S–1 SEDIMENT SAMPLE LOCATION (WESTON–1991)
- SED–A1,A2,A3,A4 SEDIMENT SAMPLE LOCATION (ERM–1996)
- TPS–A1,A2,A3 SEDIMENT SAMPLE LOCATION (ESI–2000)

0 150 300 FEET

COOPERATING PARTIES GROUP

DRWN: SCC	DATE: 11/13/12	KEY ENVIRONMENTAL INCORPORATED
CHKD: RJH	DATE: 11/13/12	
APPD: JSZ	DATE: 11/13/12	
SCALE: AS SHOWN		

SITE CHARACTERIZATION SUMMARY REPORT
STANDARD CHLORINE CHEMICAL CO., INC. SITE
KEARNY, HUDSON COUNTY NEW JERSEY

REV #	DATE	DESCRIPTION	APPD
3			
2			
1			

REFERENCE:

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

SAMPLE LOCATION MAP
(PRE–IRA DATA COLLECTION)

PROJECT NO: 2012–14

FIGURE 2–2

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LEGEND

	PROPERTY BOUNDARY
	EXISTING FENCE
	EXISTING STRUCTURES
5	EXISTING GROUND SURFACE ELEVATION CONTOURS
ELWC-01	LAGOON SOLIDS SAMPLE LOCATION
ELWS-01	LAGOON SURFACE WATER SAMPLE LOCATION
BW-5	BARRIER WALL ALIGNMENT SOIL BORING LOCATION
GT-1	GEOTECHNICAL SOIL BORING LOCATION (STABILITY/SETTLEMENT ANALYSIS)
HRWC-03	HACKENSACK RIVER SEDIMENT SAMPLE LOCATION
SDWC-01	SOUTH DITCH SEDIMENT SAMPLE LOCATION
SC-MW-13L	SAND UNIT GROUNDWATER MONITORING WELL LOCATION
SC-MW-11U	SHALLOW (FILL) UNIT GROUNDWATER MONITORING WELL LOCATION
SC-PZ-5U	SHALLOW (FILL) UNIT PIEZOMETER LOCATION
TSWC-01	HYDRAULIC CONTROL SYSTEM IN-SITU TRENCH SPOIL WASTE CLASSIFICATION (TSWC) SAMPLE LOCATION
CR-3	CHROMIUM DELINEATION BORING (3 SAMPLE DEPTHS)
SC-SS-06	SURFACE SOIL SAMPLE LOCATION
	SEPTIC TANK LOCATION

0 250 500 FEET

COOPERATING PARTIES GROUP

DRWN: CC	DATE: 11/14/12	KEY ENVIRONMENTAL INCORPORATED
CHKD: RH	DATE: 11/14/12	
APPD: DJS	DATE: 11/14/12	
SCALE: AS SHOWN		

SITE CHARACTERIZATION SUMMARY REPORT
STANDARD CHLORINE CHEMICAL CO., INC. SITE
KEARNY, HUDSON COUNTY, NEW JERSEY

REV #	DATE	DESCRIPTION	APPD
3			
2			
1			

REFERENCE:

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

PHASE II SUPPLEMENTAL RI
AND IRA PRE-DESIGN
SAMPLE LOCATION MAP

PROJECT NO: 2012-14

FIGURE 2-3

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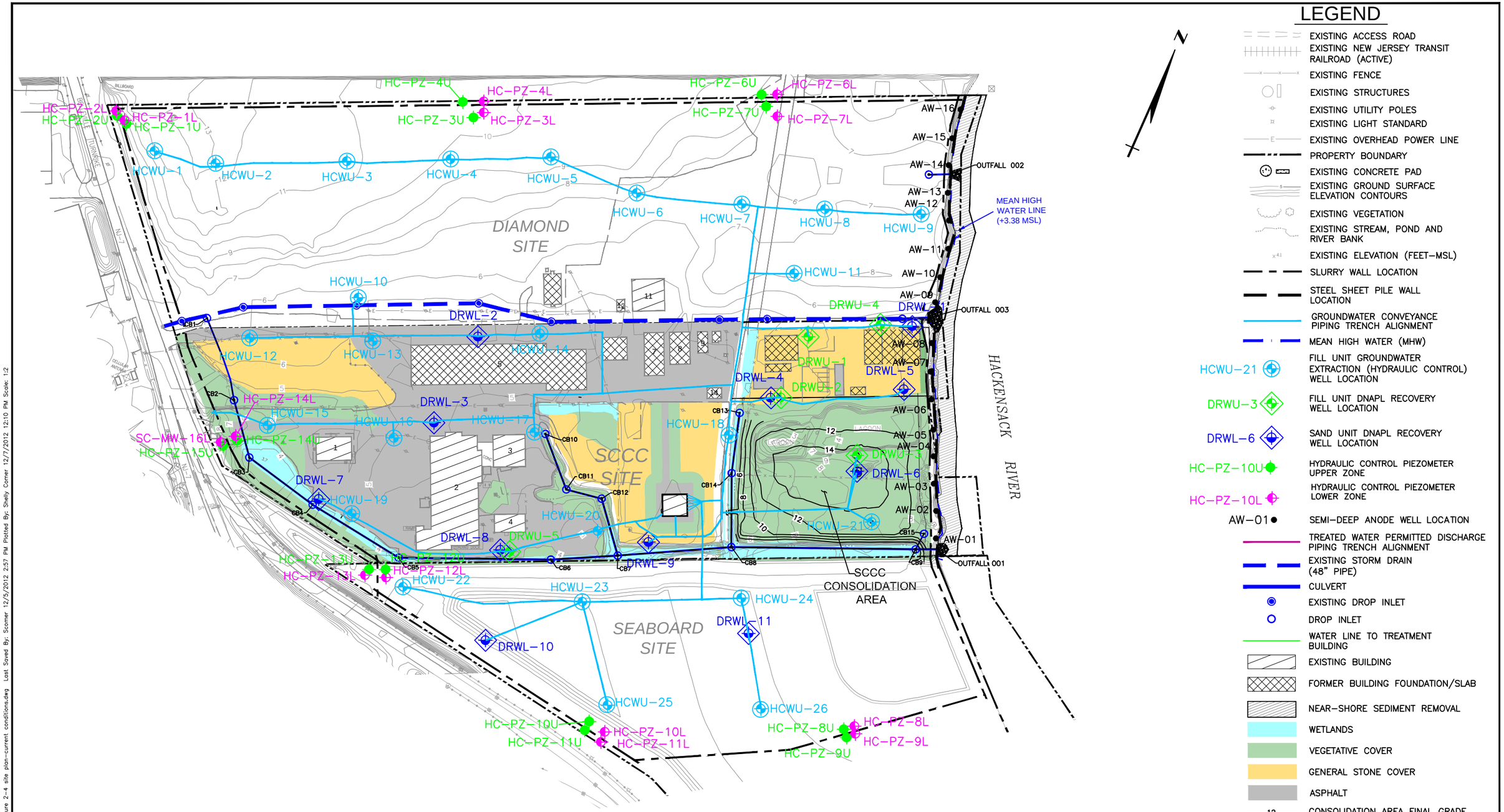

LEGEND

- EXISTING ACCESS ROAD
- EXISTING NEW JERSEY TRANSIT RAILROAD (ACTIVE)
- EXISTING FENCE
- EXISTING STRUCTURES
- EXISTING UTILITY POLES
- EXISTING LIGHT STANDARD
- EXISTING OVERHEAD POWER LINE
- PROPERTY BOUNDARY
- EXISTING CONCRETE PAD
- EXISTING GROUND SURFACE ELEVATION CONTOURS
- EXISTING VEGETATION
- EXISTING STREAM, POND AND RIVER BANK
- EXISTING ELEVATION (FEET–MSL)
- SLURRY WALL LOCATION
- STEEL SHEET PILE WALL LOCATION
- GROUNDWATER CONVEYANCE PIPING TRENCH ALIGNMENT
- MEAN HIGH WATER (MHW)
- HCWU–21 — FILL UNIT GROUNDWATER EXTRACTION (HYDRAULIC CONTROL) WELL LOCATION
- DRWU–3 — FILL UNIT DNAPL RECOVERY WELL LOCATION
- DRWL–6 — SAND UNIT DNAPL RECOVERY WELL LOCATION
- HC–PZ–10U — HYDRAULIC CONTROL PIEZOMETER UPPER ZONE
- HC–PZ–10L — HYDRAULIC CONTROL PIEZOMETER LOWER ZONE
- AW–01 — SEMI–DEEP ANODE WELL LOCATION
- TREATED WATER PERMITTED DISCHARGE PIPING TRENCH ALIGNMENT
- EXISTING STORM DRAIN (48" PIPE)
- CULVERT
- EXISTING DROP INLET
- DROP INLET
- WATER LINE TO TREATMENT BUILDING
- EXISTING BUILDING
- FORMER BUILDING FOUNDATION/SLAB
- NEAR–SHORE SEDIMENT REMOVAL
- WETLANDS
- VEGETATIVE COVER
- GENERAL STONE COVER
- ASPHALT
- 12 — CONSOLIDATION AREA FINAL GRADE

COOPERATING PARTIES GROUP

DRWN: WAA	DATE: 02/18/09	KEY ENVIRONMENTAL INCORPORATED
CHKD: JAB	DATE: 02/18/09	
APPD: JSZ	DATE: 02/18/09	
SCALE: AS SHOWN		

SITE CHARACTERIZATION SUMMARY REPORT
STANDARD CHLORINE CHEMICAL CO., INC. SITE
KEARNY, NEW JERSEY

CURRENT SITE CONDITIONS (2012)

PROJECT NO: 2012–14

FIGURE 2–4

REV #	DATE	DESCRIPTION	APPD

REFERENCE:

1. EXISTING GROUND SURFACE CONTOURS PER AIR SURVEY, DULLES, VIRGINIA, APRIL 14, 2001. HORIZONTAL REFERENCE: NEW JERSEY STATE PLANE COORDINATES (NAD 1927). VERTICAL REFERENCE:NATIONAL GEODETIC VERTICAL DATUM (NGVD 1929).
2. PROPERTY BOUNDARY SHOWN HEREON FROM SHEET 1 OF 1 TITLED "SURVEY OF PROPERTY, TAX LOTS 32.02, 46, 47 & 47R, BLOCK 287, TAX LOTS 48, 49, 50, 51, 52 AND 52R, BLOCK 287, TOWN OF KEARNY, HUDSON COUNTY, NEW JERSEY, DATED JULY 1, 2009 (REVISION 2: JULY 29, 2009), PREPARED BY DYKSTRA ASSOCIATES, PC.
3. EXISTING WETLANDS PER WETLAND DELINEATION BY PRINCETON HYDRO, LLC FOR KEY ENVIRONMENTAL, INC. PERFORMED IN MARCH 2009.

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

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LEGEND

PROPERTY BOUNDARY

0 150 300 FEET

COOPERATING PARTIES GROUP

DRWN: SCC	DATE: 11/05/12	KEY ENVIRONMENTAL INCORPORATED
CHKD: RJH	DATE: 11/05/12	
APPD: JSZ	DATE: 11/05/12	
SCALE: AS SHOWN		

SITE CHARACTERIZATION SUMMARY REPORT
STANDARD CHLORINE CHEMICAL CO., INC. SITE
KEARNY, HUDSON COUNTY, NEW JERSEY

2012 AERIAL PHOTOGRAPH

PROJECT NO: 2012-14

FIGURE 2-5

REV #	DATE	DESCRIPTION	APPD
1			
2			
3			

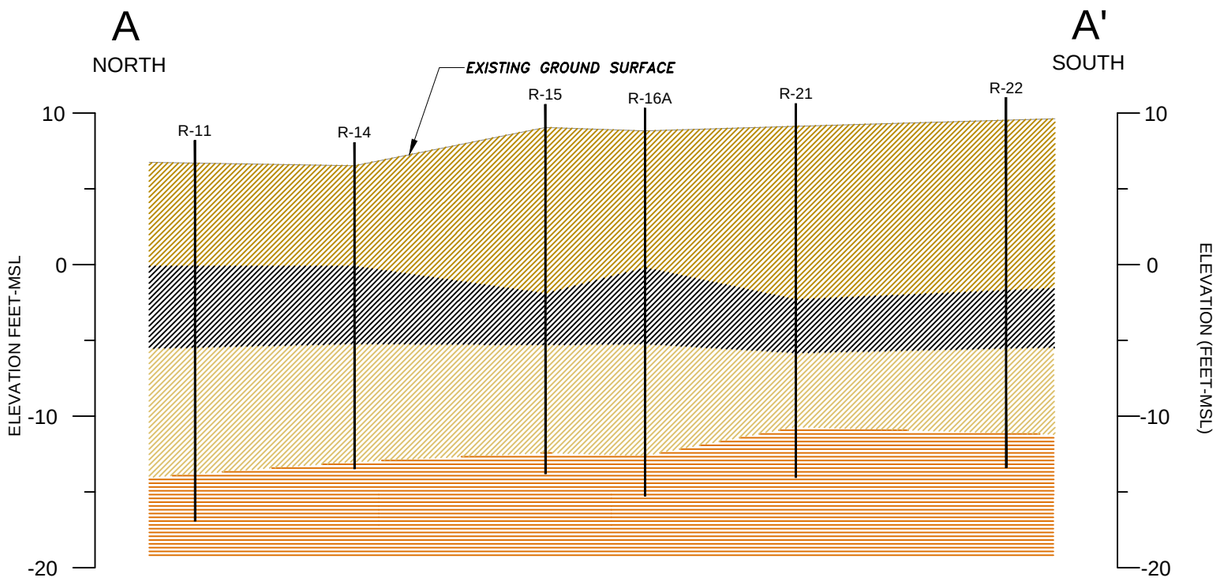
REFERENCE:

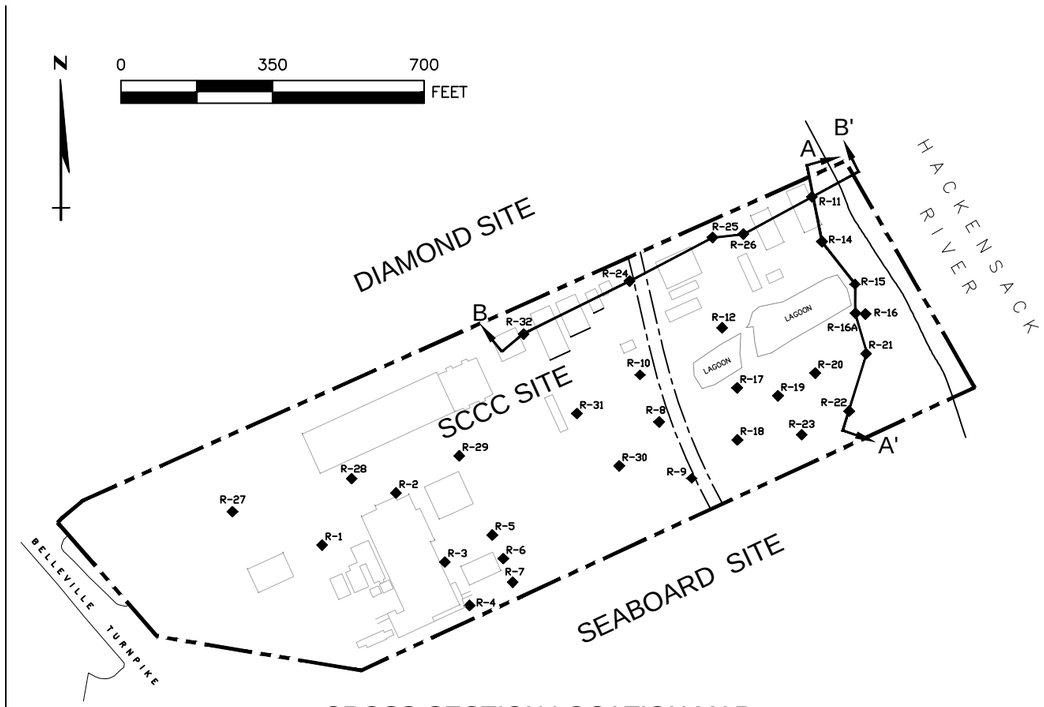
1. PROPERTY BOUNDARY SHOWN HEREON FROM SHEET 1 OF 1 TITLED "SURVEY OF PROPERTY, TAX LOTS 32.02, 46, 47 & 47R, BLOCK 287, TAX LOTS 48, 49, 50, 51, 52 AND 52R, BLOCK 287, TOWN OF KEARNY, HUDSON COUNTY, NEW JERSEY," DATED JULY 1, 2009 (REVISION 2: JULY 29, 2009), PREPARED BY DYKSTRA ASSOCIATES, PC.
2. IMAGE PROVIDED BY GOOGLE EARTH DATED JUNE, 2012.

ISSUE DATE:

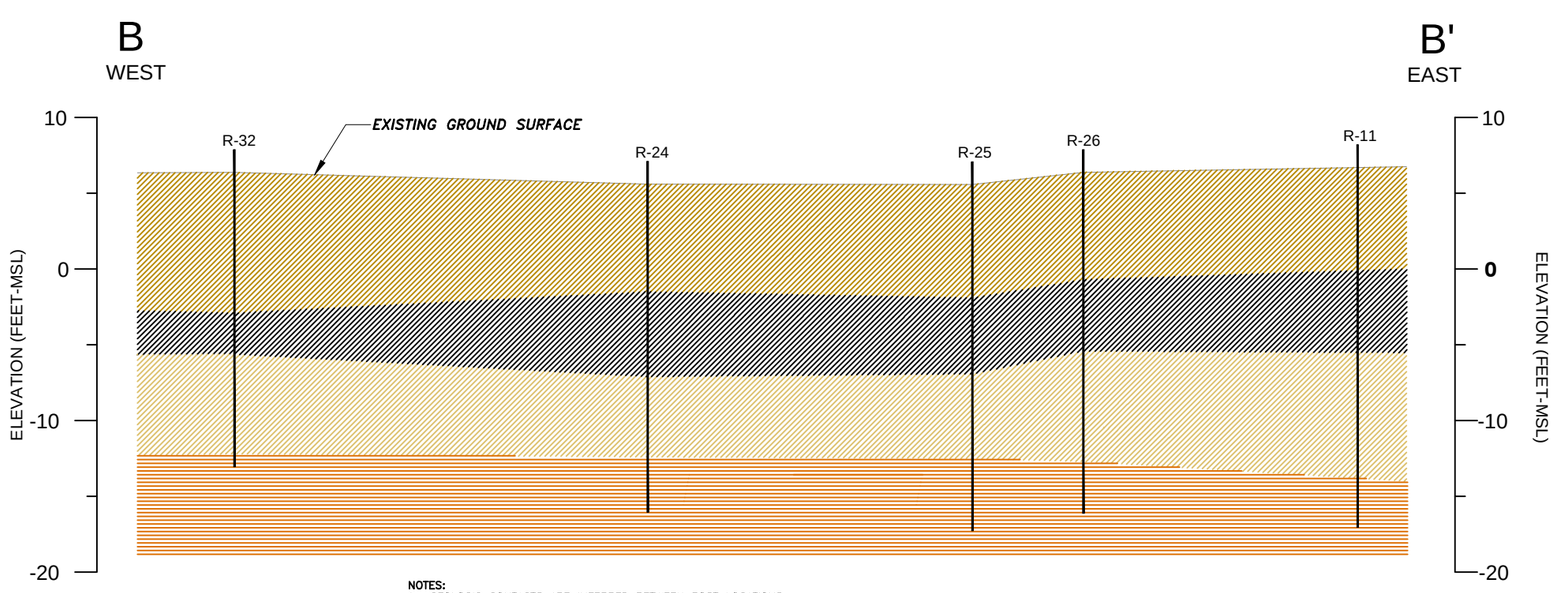
KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

y:\06civil\kearny\site characterization summary report\figure 2-5 2012 aerial photograph.dwg Last Saved By: Scomer 11/26/2012 3:38 PM Plotted By: Shelly Comer 12/7/2012 12:12 PM Scale: 1:1





CROSS-SECTION LOCATION MAP



LEGEND

- SHALLOW FILL MATERIAL
- MEADOW MAT
- DEEPER FINE SAND
- VARVED CLAY
- R-16A — ROST BORING LOCATION (CROSS-SECTION)
- R-27 — ROST BORING LOCATION
- SITE BOUNDARY
- STRUCTURES/BUILDINGS
- RIGHT OF WAY
- B B' — CROSS SECTION LOCATION

10 0 100

SCALES IN FEET

NOTES:
1. GEOLOGIC CONTACTS ARE INFERRED BETWEEN ROST LOCATIONS.
2. HISTORICAL SITE CONDITIONS DEPICTED ON CROSS-SECTION LOCATION MAP.

REV #	DATE	DESCRIPTION	APPD
△			
△			
△1			

REFERENCE: 1. STANDARD CHLORINE CHEMICAL COMPANY SITE SURVEY, NEGLIA ENGINEERING ASSOCIATES, JANUARY 1999. ADDITIONAL BUILDING LOCATIONS OBTAINED FROM ERM, INC. FIGURES 1, 3-1, 3-2, 3-3 AND 3-4, PROPOSED REMEDIAL ACTION PLAN, STANDARD CHLORINE SITE, KEARNY NEW JERSEY.

2. VERTICAL REFERENCE: NATIONAL GEODETIC VERTICAL DATUM (NGVD 1929).

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

COOPERATING PARTIES GROUP

DRWN: SCC	DATE: 11/14/12	KEY ENVIRONMENTAL INCORPORATED
CHKD: RJH	DATE: 11/14/12	
APPD: JSZ	DATE: 11/14/12	
SCALE: AS SHOWN		

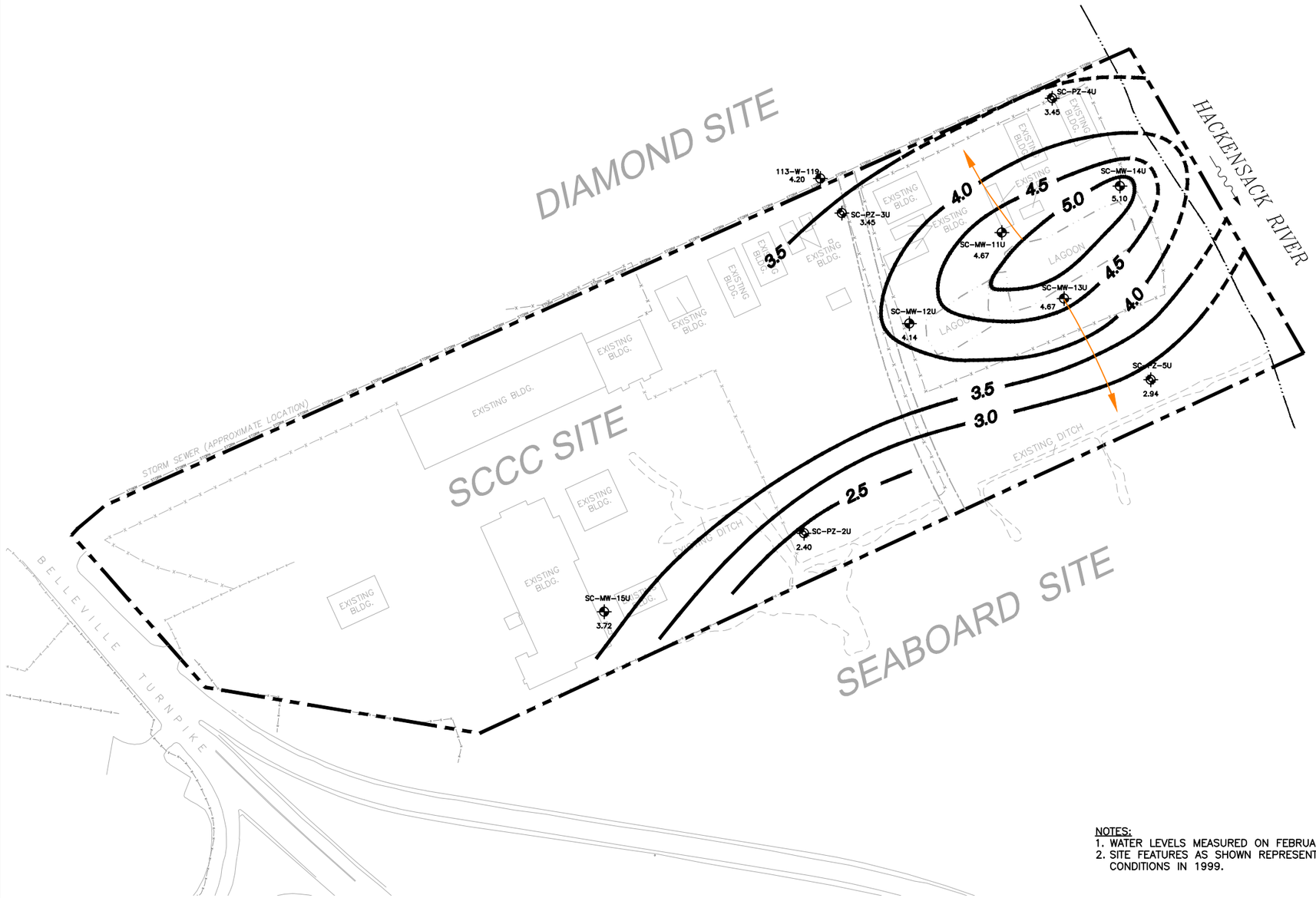
SITE CHARACTERIZATION SUMMARY REPORT
STANDARD CHLORINE CHEMICAL CO., INC. SITE
KEARNY, HUDSON COUNTY, NEW JERSEY

GEOLOGIC CROSS-SECTION LOCATIONS AND GEOLOGIC CROSS SECTIONS

PROJECT NO: 2012-14

FIGURE 3-1

y:\00civil\kearny\site characterization summary report\figure 3-1 geologic cross-section.dwg Last Saved By: Scomer 12/5/2012 2:54 PM Plotted By: Shelly Comer 12/7/2012 12:09 PM Scale: 1:1



LEGEND

- SITE BOUNDARY
- STRUCTURES/BUILDINGS
- RAILROAD RIGHT OF WAY
- EXISTING DITCH
- EXISTING LAGOON
- EDGE OF RIVER
- FENCE LINE
- STORM — STORM — EXISTING STORM SEWER LOCATION (APPROXIMATE)
- SC-MW-15U — EXISTING SHALLOW FILL UNIT MONITORING WELL LOCATION
- SC-PZ-1U — EXISTING PIEZOMETER LOCATION
- 25 — CONTOURS ON POTENTIOMETRIC SURFACE FILL UNIT (DASHED WHERE INFERRED)
- GENERALIZED DIRECTION OF GROUNDWATER FLOW

0 200 400 FEET

NOTES:
1. WATER LEVELS MEASURED ON FEBRUARY 2, 1999.
2. SITE FEATURES AS SHOWN REPRESENTATIVE OF CONDITIONS IN 1999.

COOPERATING PARTIES GROUP

DRWN: SCC	DATE: 11/14/12	KEY ENVIRONMENTAL INCORPORATED
CHKD: RJH	DATE: 11/14/12	
APPD: JSZ	DATE: 11/14/12	
SCALE: AS SHOWN		

SITE CHARACTERIZATION SUMMARY REPORT
STANDARD CHLORINE CHEMICAL CO., INC. SITE
KEARNY, HUDSON COUNTY, NEW JERSEY

REV #	DATE	DESCRIPTION	APPD
3			
2			
1			

REFERENCE: 1. VERTICAL REFERENCE: NATIONAL GEODETIC VERTICAL DATUM (NGVD 1929).

ISSUE DATE:

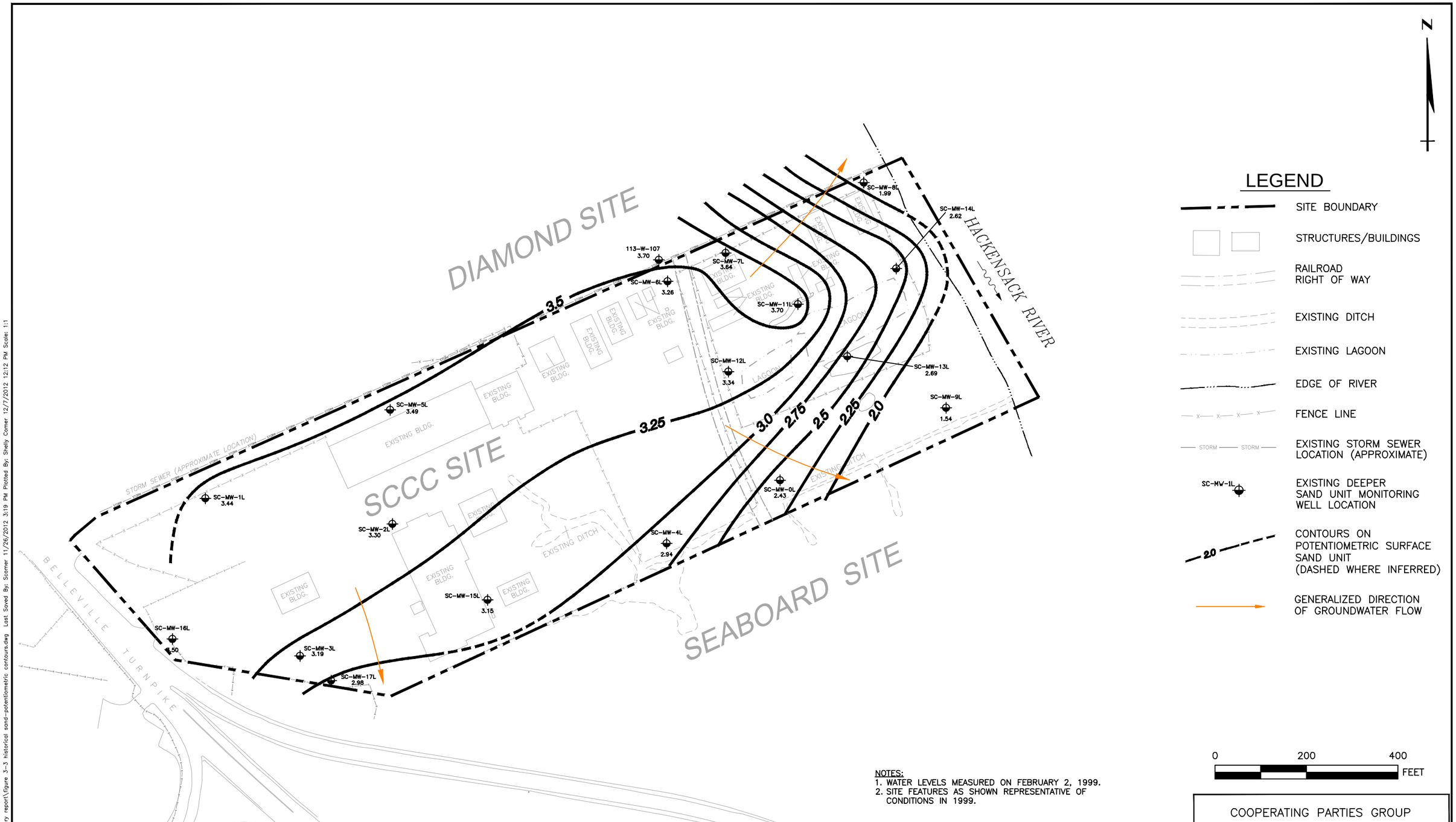
KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

HISTORICAL POTENTIOMETRIC SURFACE MAP–FILL UNIT

PROJECT NO: 2012–14

FIGURE 3–2

y:\0Civil\kearny\site characterization summary report\figure 3-2 historical fill-potentiometric contours.dwg Last Saved By: Scomer 11/26/2012 2:43 PM Plotted By: Shelly Comer 12/7/2012 12:09 PM Scale: 1:1



NOTES:
1. WATER LEVELS MEASURED ON FEBRUARY 2, 1999.
2. SITE FEATURES AS SHOWN REPRESENTATIVE OF CONDITIONS IN 1999.

COOPERATING PARTIES GROUP

DRWN: SCC	DATE: 11/14/12	KEY ENVIRONMENTAL INCORPORATED
CHKD: RJH	DATE: 11/14/12	
APPD: JSZ	DATE: 11/14/12	
SCALE: AS SHOWN		

SITE CHARACTERIZATION SUMMARY REPORT
STANDARD CHLORINE CHEMICAL CO., INC. SITE
KEARNY, HUDSON COUNTY NEW JERSEY

REV #	DATE	DESCRIPTION	APPD
3			
2			
1			

REFERENCE: 1. VERTICAL REFERENCE: NATIONAL GEODETIC VERTICAL DATUM (NGVD 1929).

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

HISTORICAL POTENTIOMETRIC SURFACE MAP–SAND UNIT

PROJECT NO: 2012–14

FIGURE 3–3

y:\00civil\kearny\site characterization summary report\figure 3-3 historical sand-potentiometric contours.dwg Last Saved By: Scomer 11/26/2012 3:19 PM Plotted By: Shelly Corner 12/7/2012 12:12 PM Scale: 1:1

COI	001 08/01/91 0-0.5		002 08/01/91 0-0.5		003 08/01/91 0-0.5		004 08/01/91 0-0.5		005 08/01/91 0-0.5		006 08/01/91 0-0.5		015 08/01/91 0-0.5		018 08/01/91 0-0.5	
Metals																
Cr	722		17.5		1990		21.4		733		2000		520		224	
Cr+6	2.7	U	3	U	**270**		3	U	8.2		16		3.4		3	

COI	007 08/01/91 0-0.5		008 08/01/91 0-0.5		009 08/01/91 0-0.5		010 08/01/91 0-0.5	
Metals								
Cr	2520		1490		2540		529	
Cr+6	13		15		**110**		8.6	

COI	SC-SS-02 0.0-0.5 ft 04/15/09	
SVOCs		
BaA	**4.5**	
BaP	**5.2**	
BbF	**10**	
DahA	**1.3**	
HCB	0.16	U
I123P	**6.6**	
PCBs		
1248	**1.1**	

COI	031 08/01/91 0-0.5		032 08/01/91 0-0.5		043 08/01/91 0-0.5	
Metals						
Cr	9900		5330		8570	
Cr+6	14	U	0.65		0.15	U

COI	SC-SS-01 0.0-0.5 ft 04/15/09	
SVOCs		
BaA	**14**	
BaP	**22**	
BbF	**27**	
DahA	**4.8**	
HCB	0.08	U
I123P	**15**	
PCBs		
1248	0.31	

COI	TSS-1 12/01/90 0-0.5		TSS-2 12/01/90 0-0.5		TSS-3 12/01/90 0-0.5		TSS-4 12/01/90 0-0.5		TSS-5 12/01/90 0-0.5		TSS-6 12/01/90 0-0.5		TSS-7 12/01/90 0-0.5		TSS-8 12/01/90 0-0.5		TSS-9 12/01/90 0-0.5		TSS-9D 12/01/90 0-0.5		TSS-10 12/01/90 0-0.5	
VOCs																						
124-TCB	**75000**		**3040**		6.36		**14100**		**68200**		30.1		25.4		28.3		**100000**		**200000**		62.8	
14-DCB	**2230**		**4840**		**54.6**		15		**52.2**		**15.7**		7.4	U	6.6	U	**876**		**1200**		**41.7**	
SVOCs																						
BaA	49	U	11	U	13	U	12	U	20	U	13	U	13	U	12	U	14	U	12	U	12	U
BaP	16	U	**3.84**		**34.1**		**6.58**		6.4	U	**4.91**		**4.95**		3.8	U	4.6	U	3.7	U	3.9	U
BbF	30	U	6.9	U	**65.8**		**16.7**		**14**		**11.6**		**8.7**		7.2	U	**33.1**		7.1	U	7.5	U
DahA	16	U	3.6	U	**7.28**		3.8	U	6.4	U	4.3	U	4.2	U	3.8	U	4.6	U	3.7	U	3.9	U
HCB	**45**		**137**		3.1	U	**30.4**		**359**		**56.9**		**21.1**		2.9	U	**34.8**		**23.8**		3	U
I123P	23	U	5.4	U	**35.9**		**10.5**		9.5	U	**10.1**		**11.3**		5.6	U	**11.1**		**7.66**		5.8	U
NAP	**2370000**		**167**		**191**		5.02		4.1	U	**51.8**		7.31		16.7		3	U	2.4	U	**448**	

COI	SC-SB-16 01/14/99 0-2	
SVOCs		
BaA	0.47	U
BaP	0.47	U
BbF	0.47	U
DahA	0.47	U
HCB	0.47	U
I123P	0.47	U

COI	SC-SB-15 01/14/99 0-2	
SVOCs		
BaA	1.5	
BaP	0.12	U
BbF	2.2	
DahA	0.45	
HCB	0.12	U
I123P	0.86	

COI	SC-MW-16L 0-2 01/13/99	
SVOCS		
BaA	0.28	
BaP	**0.36**	
BbF	0.45	
DahA	0.12	U
HCB	0.12	U
I123P	0.19	

COI	SC-MW-17L 0-2 01/13/99	
SVOCS		
BaA	0.24	
BaP	**0.38**	
BbF	0.48	
DahA	0.13	U
HCB	0.13	U
I123P	0.13	U

COI	013 08/01/91 0-0.5		014 08/01/91 0-0.5		016 08/01/91 0-0.5		017 08/01/91 0-0.5	
Metals								
Cr	1100		2240		769		511	
Cr+6	7.3		13		12		3.8	

COI	SC-MW-2L 0-0.5 12/01/90	
SVOCS		
BaA	1.9	U
BaP	0.61	U
BbF	1.8	
DahA	--	
HCB	--	
I123P	0.9	U

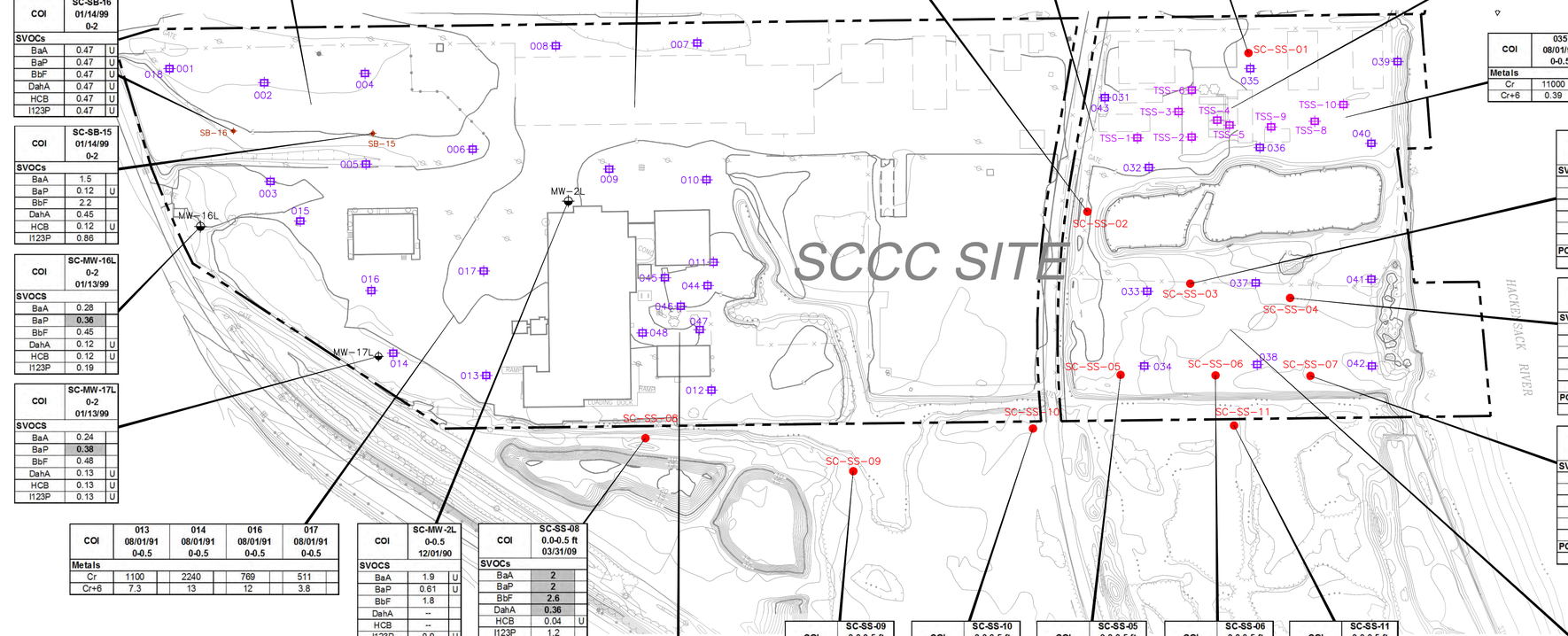
COI	SC-SS-08 0.0-0.5 ft 03/31/09	
SVOCs		
BaA	**2**	
BaP	**2**	
BbF	**2.6**	
DahA	**0.36**	
HCB	0.04	U
I123P	1.2	
PCBs		
1248	0.0025	U

COI	035 08/01/91 0-0.5		036 08/01/91 0-0.5		039 08/01/91 0-0.5		040 08/01/91 0-0.5	
Metals								
Cr	11000		6460		11500		7050	
Cr+6	0.39		0.26	U	**195**		0.24	U

COI	SC-SS-03 0.0-0.5 ft 04/15/09	
SVOCs		
BaA	0.17	
BaP	0.17	
BbF	0.42	
DahA	0.029	J
HCB	0.017	U
I123P	0.31	
PCBs		
1248	0.1	

COI	SC-SS-04 0.0-0.5 ft 04/15/09	
SVOCs		
BaA	**22**	
BaP	**37**	
BbF	**47**	
DahA	**8.8**	
HCB	0.95	
I123P	**27**	
PCBs		
1248	**2.5**	

COI	SC-SS-07 0.0-0.5 ft 04/15/09	
SVOCs		
BaA	0.95	
BaP	0.95	
BbF	**2.8**	
DahA	**0.29**	
HCB	**1.4**	
I123P	1.4	
PCBs		
1248	0.0019	U



COI	SC-SS-09 0.0-0.5 ft 03/30/09	
SVOCs		
BaA	**2**	
BaP	1.5	
BbF	1.7	
DahA	**0.27**	
HCB	0.028	U
I123P	0.75	
PCBs		
1248	0.0017	U

COI	SC-SS-10 0.0-0.5 ft 03/30/09	
SVOCs		
BaA	1.1	
BaP	**1**	
BbF	1.2	
DahA	0.19	
HCB	0.016	U
I123P	0.55	
PCBs		
1248	0.002	U

COI	SC-SS-05 0.0-0.5 ft 04/15/09	
SVOCs		
BaA	**3.4**	
BaP	**5**	
BbF	**7.6**	
DahA	**1.2**	
HCB	0.03	U
I123P	**3.9**	
PCBs		
1248	0.0019	U

COI	SC-SS-06 0.0-0.5 ft 04/15/09	
SVOCs		
BaA	0.063	U
BaP	**0.81**	
BbF	**4**	
DahA	**0.37**	J
HCB	0.96	
I123P	1.9	
PCBs		
1248	**1.1**	

COI	SC-SS-11 0.0-0.5 ft 03/30/09	
SVOCs		
BaA	**4.7**	
BaP	**7.5**	
BbF	**7.6**	
DahA	**1.5**	
HCB	0.075	U
I123P	**4.9**	
PCBs		
1248	0.0047	U

COI	011 08/01/91 0-0.5		012 08/01/91 0-0.5		044 08/01/91 0-0.5		045 08/01/91 0-0.5		046 08/01/91 0-0.5		047 08/01/91 0-0.5		048 08/01/91 0-0.5	
Metals														
Cr	579		129		579		95.7		59.7		142		188	
Cr+6	**30**	U	3.6	U	0.26	U	0.13	U	0.14	U	0.14	U	0.28	U

COI	033 08/01/91 0-0.5		034 08/01/91 0-0.5		037 08/01/91 0-0.5		038 08/01/91 0-0.5		041 08/01/91 0-0.5		042 08/01/91 0-0.5	
Metals												
Cr	9900		18000		5120		18800		9390		11900	
Cr+6	**244**		0.11	U	**54**		0.23	U	0.15		0.12	U

Constituent of Interest (COI)	Abbreviation	Units	Criterion[1]
Volatile Organics (VOCs)			
1,2,4-Trichlorobenzene	124-TCB	mg/Kg	820
1,4-Dichlorobenzene	14-DCB	mg/Kg	13
Semivolatile Organic Compounds (SVOCs)			
Benzo(a)anthracene	BaA	mg/Kg	2
Benzo(a)pyrene	BaP	mg/Kg	0.2
Benzo(b)fluoranthene	BbF	mg/Kg	2
Dibenzo(a,h)anthracene	DahA	mg/Kg	0.2
Hexachlorobenzene	HCB	mg/Kg	1
Indeno(1,2,3-cd)pyrene	I123P	mg/Kg	2
Polychlorinated Biphenyls (PCBs)			
Aroclor 1248	1248	mg/Kg	1
Metals			
Chromium[2]	Cr	mg/kg	120,000
Chromium (Hexavalent)[2]	Cr+6	mg/kg	20

NOTE:
1. Criteria are the NJDEP Non-Residential Direct Contact Soil Remediation Standards (online at www.nj.gov/dep/srp/regs/rs/rs_appendix1.pdf) unless noted otherwise.
2. Nonpromulgated criteria for total (trivalent) and hexavalent chromium determined by chromium workgroup (www.state.nj.us/dep/srp/guidance). Criterion for residential exposure to trivalent chromium was used for total chromium

Exceedances are shown in bold, shaded typeface. Data qualifiers are as follows:
U - Not detected at the detection limit indicated.

LEGEND

- PROPERTY BOUNDARY
- EXISTING FENCE
- STREAM / CREEK
- BUSH / TREELINE
- GUARD RAIL
- EXISTING GROUND SURFACE ELEVATION CONTOURS
- EXISTING BUILDING/STRUCTURES
- FORMER BUILDING/STRUCTURES
- UTILITY POLE
- SC-SS-06 SURFACE SOIL SAMPLE LOCATION
- SB-15 SOIL BORING LOCATION (KEY-1998)
- TSS-1 TANK AREA SURFACE SOIL SAMPLE LOCATION (WESTON-1990)
- 001 SURFACE SOIL SAMPLE LOCATION (FRENCH AND PARRELLO-1991)
- MW-11L SAND UNIT MONITORING WELL LOCATION (WESTON-1990; KEY-1998)

0 200 400 FEET

NOTES:
ALL SAMPLE LOCATIONS IN THE EASTERN PORTION OF THE SITE ARE BELOW COVER MATERIALS PLACED DURING IMPLEMENTATION OF THE IRA.

HISTORICAL SAMPLE LOCATIONS BASED ON PREVIOUS REPORTS BY OTHERS. MANY HISTORICAL SAMPLE LOCATIONS NOT SURVEYED. TSS-7 LOCATION NOT DEPICTED IN SOURCE DOCUMENT AND LOCATION CANNOT BE SHOWN.

REV #	DATE	DESCRIPTION	APPD
3			
2			
1			

REFERENCE:
1. VERTICAL REFERENCE: NATIONAL GEODETIC VERTICAL DATUM (NGVD 1929).
2. EXISTING GROUND SURFACE ELEVATION CONTOURS PER AIR SURVEY, DULLES, VIRGINIA, APRIL 14, 2001. HORIZONTAL REFERENCE NEW JERSEY STATE PLANE COORDINATES (NAD 1927). VERTICAL REFERENCE NATIONAL GEODETIC VERTICAL DATUM (NGVD 1929).
3. PROPERTY BOUNDARY PER PAULUS, SOKOLOWSKI, SARTOR, CONSULTING ENGINEERS, AUGUST 1995.

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

COOPERATING PARTIES GROUP

DRWN: SCC	DATE: 11/14/12
CHKD: RJH	DATE: 11/14/12
APPD: JSZ	DATE: 11/14/12
SCALE: AS SHOWN	

KEY ENVIRONMENTAL INCORPORATED

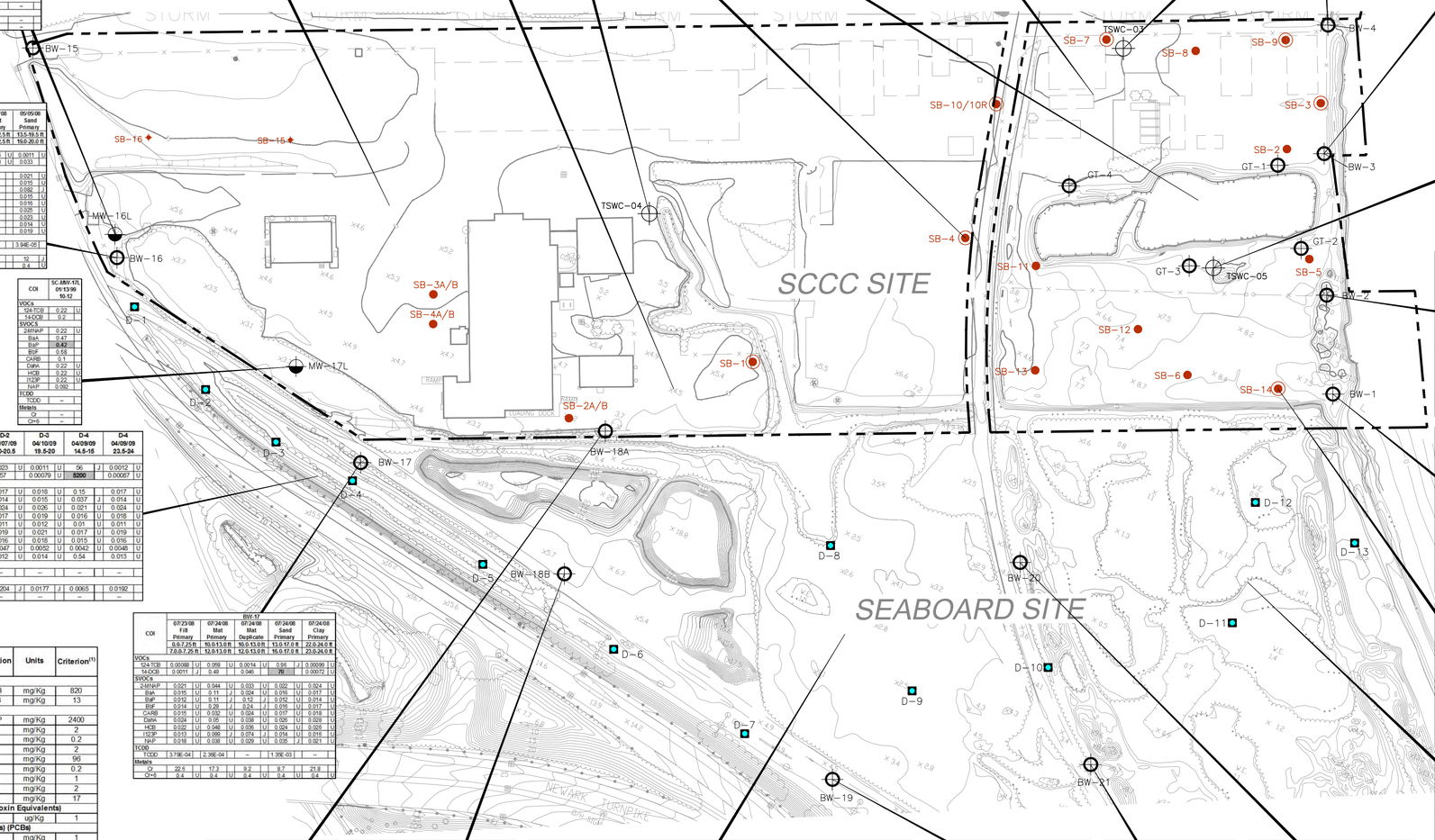
SITE CHARACTERIZATION SUMMARY REPORT
STANDARD CHLORINE CHEMICAL CO., INC. SITE
KEARNY, HUDSON COUNTY, NEW JERSEY

SURFACE SOIL ANALYTICAL RESULTS (1990-2009)

PROJECT NO: 2012-14

FIGURE 4-1

y:\00civil\kearny\site characterization summary report\figure 4-1 surface soil analytical results.dwg Last Saved By: Scamer 12/7/2012 12:34 PM Plotted By: Shelly Corner 12/7/2012 2:54 PM Scale: 1:0.5



COI	SC-SB-15 8-10 05/14/99	SC-SB-15 16-18 05/14/99	SC-SB-16 10-12 05/14/99	SC-SB-16 16-18 05/14/99	SB-3A Fill 1992	SB-3B Sand 1992	SB-4A Fill 1992	SB-4B Sand 1992
VOCs								
124-TCB	0.4 U	0.15 U	0.14 U	0.12 U	34	260 U	12 U	12 U
14-DCB	0.4 U	0.15 U	0.14 U	0.12 U	430	260 U	7 J	12 U
SVOCs								
2-MNAP	0.4 U	0.15 U	0.14 U	0.12 U	12 U	260 U	12 U	12 U
BaA	0.2 J	0.15 U	0.14 U	0.12 U	12 U	260 U	12 U	12 U
BaP	0.21 J	0.15 U	0.14 U	0.12 U	12 U	260 U	12 U	12 U
BbF	0.3 J	0.15 U	0.14 U	0.12 U	12 U	260 U	12 U	12 U
CARB	0.4 U	0.15 U	0.14 U	0.12 U	12 U	260 U	12 U	12 U
DiAA	0.4 U	0.15 U	0.14 U	0.12 U	–	–	–	–
HCB	0.4 U	0.15 U	0.14 U	0.12 U	–	–	–	–
I123P	0.4 U	0.15 U	0.14 U	0.12 U	12 U	260 U	12 U	12 U
NAP	0.4 U	0.07 J	0.14 U	0.12 U	12 U	260 U	12 U	12 U
TCDD								
TCDD	–	–	–	–	–	–	–	–
Metals								
Cr	–	–	–	–	685	0.39	428	130
CrVI	–	–	–	–	–	–	–	–

COI	SB-01 15.5-16 08/16/96	SB-2A Fill 1992	SB-2B Sand 1992
VOCs			
14-TCB	0.002	6	71 U
14-DCB	0.089 J	3.4	130 J
SVOCs			
2-MNAP	–	6.6	120 U
BaA	–	87	120 U
BaP	–	82	120 U
BbF	–	58	120 U
CARB	–	10	120 U
DiAA	–	–	–
HCB	–	–	–
I123P	–	54	120 U
NAP	0.026	5.3	120 U
TCDD			
TCDD	–	–	–
Metals			
Cr	–	35.7	4.45
CrVI	–	–	–

COI	TSWC-04 05/07/08 Primary 1.0-3.0 ft 2.0-3.0 ft
VOCs	
124-TCB	0.0012 U
14-DCB	0.0013 U
SVOCs	
2-MNAP	0.21 J
BaA	1.6
BaP	1.6
BbF	2.8
CARB	0.18 J
DiAA	0.42
HCB	0.023 U
I123P	1.1
NAP	0.34 J
TCDD	
TCDD	8.7E-04 J
PCBs	
1016	0.0029 U
1232	0.0034 U
1248	0.0019 U
1254	0.0028 U
1260	0.0049 J
Metals	
Cr	867
CrVI	56.7

COI	SB-04 15-15.5 08/12/96
VOCs	
14-TCB	1870
14-DCB	677
SVOCs	
2-MNAP	–
BaA	–
BaP	–
BbF	–
CARB	–
DiAA	–
HCB	–
I123P	–
NAP	2400
TCDD	
TCDD	–
Metals	
Cr	–
CrVI	–

COI	GT-1 05/14/08 26-28 ft Primary		GT-2 05/12/08 19-20 ft Primary		GT-3 05/08/08 22-24 ft Primary		GT-4 05/13/08 29-30 ft Primary	
VOCs								
124-TCB	0.013	U	0.014	U	0.03	J	0.013	U
14-DCB	0.0092	U	0.015	U	0.015	U	0.014	U
SVOCs								
2-MNAP	0.24	U	0.22	U	1.1	J	17	
BaA	0.17	U	0.16	U	0.17	U	0.6	J
BaP	0.13	U	0.12	U	0.13	U	0.5	J
BbF	0.16	U	0.15	U	0.16	U	0.72	J
CARB	0.16	U	0.16	U	0.17	U	0.37	J
DiAA	0.27	U	0.26	U	0.27	U	0.29	U
HCB	0.26	U	0.24	U	0.25	U	3.6	J
I123P	0.15	U	0.14	U	0.15	U	0.39	J
NAP	29		0.19	U	3.8	J	47	
Metals								
Cr	18.5	J	21.7	J	19.7	J	22.3	J
CrVI	NA		0.4	U	0.4	U	0.4	U

COI	SB-03 14.5-15 08/05/96	SB-07 15.5-16 08/16/96	SB-09 1.5-2 08/12/96	SB-09 15-15.5 08/12/96	SB-10/10 16-16.5 08/16/96
VOCs					
14-TCB	6540	ND	0.0203	1180	2290
14-DCB	1630	ND	0.00559	257	1160
SVOCs					
2-MNAP	–	–	–	–	–
BaA	–	–	–	–	–
BaP	–	–	–	–	–
BbF	–	–	–	–	–
CARB	–	–	–	–	–
DiAA	–	–	–	–	–
HCB	–	–	–	–	–
I123P	–	–	–	–	–
NAP	1010	1820	0.191	181	5750
TCDD					
TCDD	–	–	–	–	–
Metals					
Cr	–	–	–	–	–
CrVI	–	–	–	–	–

COI	TSWC-03 05/07/08 Primary 1.0-3.0 ft 2.0-3.0 ft	TSWC-03-2 10/21/08 Resample 0.0-3.0 ft
VOCs		
124-TCB	0.067 U	–
14-DCB	2.5	–
SVOCs		
2-MNAP	9.2	–
BaA	0.72	–
BaP	0.6	–
BbF	1	–
CARB	0.15 J	–
DiAA	0.11 J	–
HCB	0.029 U	–
I123P	0.4 J	–
NAP	14	–
TCDD		
TCDD	8.1E-04	3.1E-01
PCBs		
1016	0.0035 U	–
1232	0.0041 U	–
1248	0.0022 U	–
1254	0.0034 U	–
1260	0.011 J	–
Metals		
Cr	3040	–
CrVI	800	–

COI	BW-04 05/08/08 Fill Primary 0.0-6.33 ft 6.0-6.33 ft		05/08/08 Mat Primary 6.33-8.0 ft 7.0-8.0 ft		05/08/08 Sand Primary 14.0-20.0 ft 18.0-19.0 ft		05/09/08 Clay Primary 30.0-32.0 ft 31.0-32.0 ft	
VOCs								
124-TCB	0.082	J	0.0019	U	270		0.0014	U
14-DCB	0.55		0.002	U	43		0.0015	U
SVOCs								
2-MNAP	1.2		0.036	U	1.2		0.025	U
BaA	0.89		0.026	U	0.017	U	0.018	U
BaP	0.76		0.02	U	0.013	U	0.014	U
BbF	1.5		0.025	U	0.016	U	0.017	U
CARB	0.46	J	0.027	U	0.016	U	0.018	U
DiAA	0.18	J	0.042	U	0.027	U	0.028	U
HCB	0.032	U	0.028	U	0.064	J	0.027	U
I123P	0.54		0.023	U	0.015	U	0.016	U
NAP	170		15		13		0.022	U
TCDD								
TCDD	1.34E-02		1.48E-04		9.90E-02		–	
Metals								
Cr	21000	J	88.8	J	17.1	J	24.7	J
CrVI	2150		0.4	U	0.4	U	0.4	U

COI	BW-03 05/14/08 Fill Primary 0.0-6.25 ft 6.0-6.25 ft		05/14/08 Mat Primary 10.0-12.0 ft 11.0-12.0 ft		05/14/08 Sand Primary 16.0-18.0 ft 17.0-18.0 ft		05/14/08 Clay Primary 22.0-24.0 ft 23.0-24.0 ft	
VOCs								
124-TCB	5.3	U	0.11		0.22		0.0046	J
14-DCB	5.7	U	0.075		0.21		0.00583	U
SVOCs								
2-MNAP	35	J	16	J	5.3	J	0.023	U
BaA	2		3.1	U	0.42	U	0.015	U
BaP	1.5	J	2.4	U	0.33	U	0.013	U
BbF	2.3	J	3	U	0.41	U	0.015	U
CARB	1	J	4.7	U	1.2	J	0.017	U
DiAA	3.2	U	5	U	0.68	U	0.026	U
HCB	3	U	4.7	U	0.65	U	0.025	U
I123P	1.8	U	2.8	U	0.38	U	0.015	U
NAP	2000		2000		270		0.02	U
TCDD								
TCDD	2.66E-02		8.33E-03		6.33E-04		–	
Metals								
Cr	25200	J	1070	J	192	J	13.7	J
CrVI	2830		12.4		4.6		0.4	U

COI	TSWC-05 05/07/08 Primary 1.0-3.0 ft 2.0-3.0 ft
VOCs	
124-TCB	0.0012 U
14-DCB	0.0013 U
SVOCs	
2-MNAP	0.2 J
BaA	0.43
BaP	0.2 J
BbF	0.45
CARB	0.033 J
DiAA	0.041 J
HCB	0.024 U
I123P	0.14 J
NAP	0.57
TCDD	
TCDD	1.3E+00
PCBs	
1016	0.003 U
1232	0.13
1248	0.0019 U
1254	0.0029 U
1260	0.03 JPS
Metals	
Cr	9110
CrVI	1020

COI	BW-05 05/15/08 Fill Primary 0.0-9.75 ft 9.0-9.75 ft		05/15/08 Mat Primary 10.0-12.0 ft 10.0-11.0 ft		05/15/08 Sand Primary 16.5-21.7 ft 21.0-21.7 ft		05/15/08 Clay Primary 24.0-26.0 ft 25.0-26.0 ft	
VOCs								
124-TCB	0.001	U	0.0019	U	0.0011	U	0.0011	U
14-DCB	0.00075	U	0.0014	U	0.00075	U	0.0008	U
SVOCs								
2-MNAP	0.27	J	0.056	J	0.09	U	0.023	U
BaA	0.14	J	0.02	U	0.064	U	0.017	U
BaP	0.14	J	0.016	U	0.05	U	0.013	U
BbF	0.22	J	0.02	U	0.062	U	0.015	U
CARB	0.088	J	0.021	U	0.067	U	0.017	U
DiAA	0.027	J	0.032	U	0.1	U	0.027	U
HCB	0.025	U	0.031	U	0.098	U	0.025	U
I123P	0.074	J	0.018	U	0.058	U	0.015	U
NAP	3.4		1.9		0.079	U	0.02	U
TCDD								
TCDD	2.15E-03		5.01E-05		9.61E-05		–	
Metals								
Cr	14100	J	342	J	20.3	J	18.3	J
CrVI	2160		56.2		0.4	U	0.4	U

COI	BW-01 05/19/08 Fill Primary 0.0-7.0 ft 6.5-7.0 ft		05/19/08 Mat Primary 10.0-15.0 ft 11.0-12.0 ft		05/19/08 Sand Primary 18.0-21.0 ft 19.0-20.0 ft	
VOCs						
124-TCB	0.007	J	0.0012	U	0.0011	U
14-DCB	0.0029	U	0.00087	U	0.00078	U
SVOCs						
2-MNAP	0.525	U	0.093	U	0.021	U
BaA	0.19	J	0.055	U	0.015	U
BaP	0.19	J	0.052	U	0.012	U
BbF	0.31	J	0.064	U	0.015	U
CARB	0.025	J	0.069	U	0.016	U
DiAA	0.035	J	0.11	U	0.024	U
HCB	0.027	U	0.1	U	0.023	U
I123P	0.11	J	0.059	U	0.014	U
NAP	0.91		0.8	J	0.019	U
TCDD						
TCDD	9.79E-02		1.10E-03		5.93E-04	
Metals						
Cr	15200		55.7		33.6	
CrVI	3620		0.4	U	3.3	

COI	SB-14 18.5-19 08/07/96
VOCs	
14-TCB	0.35
14-DCB	0.0035
SVOCs	
2-MNAP	–
BaA	–
BaP	–
BbF	–
CARB	–
DiAA	–
HCB	–
I123P	–
NAP	0.0572
TCDD	
TCDD	--
Metals	
Cr	–
CrVI	–

COI	D-1 04/07/09 18-18.5		D-2 04/07/09 20-20.5		D-3 04/10/09 19.5-20		D-4 04/09/09 14.5-15		D-4 04/09/09 23.5-24	
VOCs										
124-TCB	0.028	J	0.023	U	0.0011	U	56	J	0.0012	U
14-DCB	1.8		0.57		0.00079	U	5200		0.00067	U
SVOCS										
2-MNAP	0.49		0.017	U	0.018	U	0.15		0.017	U
BaA	0.087		0.014	U	0.015	U	0.037	J	0.014	U
BaP	0.051	J	0.024	U	0.026	U	0.021	U	0.024	U
BbF	0.3		0.017	U	0.019	U	0.016	U	0.016	U
CARB	0.032	J	0.011	U	0.012	U	0.01	U	0.011	U
DiAA	0.018	U	0.019	U	0.021	U	0.017	U	0.019	U
HCB	0.064	J	0.016	U	0.018	U	0.015	U	0.016	U
I123P	0.021	J	0.0047	U	0.0052	U	0.0042	U	0.0045	U
NAP	1.6		0.012	U	0.014	U	0.54		0.013	U
TCDD										
TCDD	–		–		–		–		–	
Metals										
Cr	0.0084	J	0.0204	J	0.0177	J	0.0065		0.0192	
CrVI	–		–		–		–		–	

COI	BW-11 07/23/08 Fill Primary 0.0-7.25 ft 7.0-7.25 ft		07/24/08 Mat Primary 10.0-13.0 ft 10.0-13.0 ft		07/24/08 Mat Duplicate 12.0-15.0 ft 12.0-15.0 ft		07/24/08 Sand Primary 13.0-17.0 ft 15.0-17.0 ft		07/24/08 Clay Primary 22.0-24.0 ft 23.0-24.0 ft	
VOCs										
124-TCB	0.00088	U	0.059	U	0.0014	U	0.95	J	0.00096	U
14-DCB	0.0011	J	0.49		0.046		70		0.00072	U
SVOCs										
2-MNAP	0.021	U	0.044	U	0.033	U	0.022	U	0.024	U
BaA	0.015	U	0.11	J	0.024	U	0.016	U	0.017	U
BaP	0.012	U	0.11	J	0.12	J	0.012	U	0.014	U
BbF	0.014	U	0.29	J	0.24	J	0.015	U	0.017	U
CARB	0.015	U	0.032	U	0.024	U	0.017	U	0.018	U
DiAA	0.024	U	0.05	U	0.038	U	0.026	U	0.028	U
HCB	0.022	U	0.046	U	0.036	U	0.024	U	0.026	U
I123P	0.013	U	0.092	J	0.074	J	0.014	U	0.016	U
NAP	0.018	U	0.038	U	0.029	U	0.035	J	0.021	U
TCDD										
TCDD	3.79E-04		2.39E-04		–		1.39E-03		–	
Metals										
Cr	22.6		17.3		9.2		8.7		21.8	
CrVI	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U

COI	D-11 04/14/09 17-17.5		D-12 04/15/09 15-16.5		D-13 04/06/09 18-18.5	
VOCs						
124-TCB	0.0011	U	0.0011	U	0.0011	U
14-DCB	0.00081	U	0.00075	U	0.00077	U
SVOCS						
2-MNAP	0.017	U	0.017	U	0.016	U
BaA	0.014	U	0.013	U	0.013	U
BaP	0.024	U	0.023	U	0.026	J
BbF	0.017	U	0.017	U	0.29	
CARB	0.011	U	0.011	U	0.011	U
DiAA	0.019	U	0.018	U	0.018	U
HCB	0.016	U	0.016	U	0.016	U
I123P	0.0047	U	0.0046	U	0.015	J
NAP	0.013	U	0.028	J	0.056	J
TCDD						
TCDD	–		–		–	
Metals						
Cr	0.0181		0.0167		0.0166	J
CrVI	–		–		–	

COI	BW-18A 04/29/09 Fill Primary 0.5-7.5 ft 7.0-7.5 ft		04/29/09 Mat Primary 8.0-10.0 ft 9.0-10.0 ft		04/29/09 Sand Primary 10.0-15.0 ft 15.0-17.0 ft	
VOCs						
124-TCB	1300		55		90	
14-DCB	1500		660		110	
SVOCs						
2-MNAP	0.25	J	0.34	U	0.033	J
BaA	4.5		1.2	J	0.17	J
BaP	5.1		1.3	J	0.15	J
BbF	6.4		1.5	J	0.21	J
CARB	0.3	J	0.25	U	0.016	U
DiAA	0.95		0.39	U	0.029	J
HCB	0.051	U	0.37	U	0.023	U
I123P	3.8		0.89	J	0.11	J
NAP	1		0.3	U	0.058	J
TCDD						
TCDD	2.93E-02		5.26E-03		2.70E-03	
Metals						
Cr	168	J	28.7	J	8.1	J
CrVI	13.4		0.4	U	0.4	U

COI	BW-18B 07/25/08 Fill Primary 0.0-5.75 ft 5.0-5.75 ft		07/28/08 Mat Primary 8.0-13.0 ft 12.0-13.0 ft		07/28/08 Sand Primary 13.0-17.75 ft 17.0-17.75 ft		07/28/08 Clay Primary 22.0-24.0 ft 23.0-24.0 ft	
VOCs								
124-TCB	0.11	U	0.0012	U	210	J	0.00098	U
14-DCB	2.1		0.16		6400		0.0022	J
SVOCs								
2-MNAP	0.073	J	0.028	U	0.023	U	0.024	U
BaA	6		0.02	U	0.015	U	0.017	U
BaP	4.7		0.015	U	0.013	U	0.014	U
BbF	5.5		0.019	U	0.016	U	0.017	U
CARB	0.16	J	0.021	J	0.017	U	0.018	U
DiAA	0.63	J	0.032	U	0.025	U	0.028	U
HCB	0.051	U	0.03	U	0.025	U	0.026	U
I123P	2.4		0.016	U	0.015	U	0.016	U
NAP	1.3		0.075	J	0.22	J	0.021	U
TCDD								
TCDD	3.07E-02		1.49E-04		3.69E-03		–	
Metals								
Cr	279		18.5		12.3		17.6	
CrVI	0.4	U	0.4	U	0.4	U	0.4	U

COI	D-6 04/09/09 25.5-26	D-6 04/08/09 15.5-16	D-6 04/08/09 20-20.5	D-6 04/08/09 20-20.5	D-7 04/08/09 14.8-15.3	D-7 04/08/09 18-18.5	D-8 04/13/09 29-29.5	D-9 04/13/09 22-22.5	D-10 04/14/09 21.5-22
VOCs									
124-TCB	0.028 J	0.049 J	0.0011 U	0.0013 U	0.02 U	0.0013 U	0.0012 U	0.001 U	0.0012 U
14-DCB	0.45	4.5	0.00081 U	0.00092 U	0.9	0.00091 U	0.00083 U	0.00076 U	0.00084 U
SVOCS									
2-MNAP	0.017 U	0.051 J	0.017 U	0.018 U	0.015 U	0.017 U	0.017 U	0.016 U	0.017 U
BaA	0.014 U	0.09	0.014 U	0.014 U	0.012 U	0.014 U	0.014 U	0.014 U	0.014 U
BaP	0.025 U	0.062 J	0.024 U	0.025 U	0.021 U	0.024 U	0.024 U	0.025 U	0.024 U
BbF	0.018 U	0.18	0.018 U	0.018 U	0.015 U	0.017 U	0.018 U	0.016 U	0.018 U
CARB	0.012 U	0.026 J	0.011 U	0.012 U	0.0099 U	0.011 U	0.011 U	0.012 U	0.011 U
DiAA	0.019 U	0.017 U	0.019 U	0.02 U	0.017 U	0.019 U	0.019 U	0.02 U	0.019 U
HCB	0.017 U	0.015 U	0.016 U	0.017 U	0.014 U	0.016 U	0.016 U	0.017 U	0.016 U
I123P	0.0048 U	0.16	0.0046 U	0.005 U	0.0041 U	0.0047 U	0.0048 U	0.0049 U	0.0048 U
NAP	0.013 U	0.58	0.12	0.11	0.011 U	0.013 J	0.013 U	0.013 U	0.013 U
TCDD									
TCDD	–	–	–	–	–	–	–	–	–
Metals									
Cr	0.0182	0.0083	0.0183	0.02	0.0067	0.0151	0.0232 JE	0.0217 J	0.0203
CrVI	–	–	–	–	–	–	–	–	–

COI	BW-19 07/28/08 Fill Primary 0.0-7.5 ft 7.0-7.5 ft		07/29/08 Sand Primary 12.0-16.25 ft 16.0-16.25 ft		07/29/08 Sand Duplicate 12.0-16.25 ft 16.0-16.25 ft		07/29/08 Clay Primary 22.0-24.0 ft 23.0-24.0 ft	
VOCs								
124-TCB	0.0009	U	0.058	U	0.061	U	0.0011	U
14-DCB	0.00065	U	1.2		0.88		0.0008	U
SVOCs								
2-MNAP	0.63	J	0.023	U	0.023	U	0.024	U
BaA	12		0.12	J	0.11	J	0.017	U
BaP	15		0.12	J	0.08	J	0.013	U
BbF	21		0.18	J	0.12	J	0.017	U
CARB	4.5		0.017	U	0.02	J	0.018	U
DiAA	2.6		0.026	U	0.026	U	0.027	U
HCB	0.049	U	0.026	U	0.025	U	0.026	U
I123P	5.1		0.076	J	0.037	J	0.015	U
NAP	2		0.02	U	0.02	U	0.021	U
TCDD								
TCDD	1.78E-02		2.54E-06		–		–	
Metals								
Cr	107		8.9		8.7		19.4	
CrVI	0.4	U	0.4	U	0.4	U	0.4	U

COI	BW-21 07/29/08 Fill Primary 0.0-6.0 ft 5.0-6.0 ft		BW-21 07/29/08 Mat Primary 8.0-10.5 ft 10.0-10.5 ft		BW-21 07/29/08 Sand Primary 10.5-15.0 ft 15.0-15.0 ft	
VOCs						
124-TCB	0.00092	U	0.0011	U	0.00094	U
14-DCB	0.00066	U	0.00083	U	0.00068	U
SVOCs						
2-MNAP	0.5	J	0.038	J	0.023	U
BaA	7.2		0.17	J	0.017	U
BaP	7.5		0.17	J	0.013	U
BbF	12		0.19	J	0.016	U
CARB	0.7	J	0.047	J	0.017	U
DiAA	1.3		0.034	U	0.027	U
HCB	0.055	U	0.032	U	0.025	U
I123P	4.9		0.063	J	0.015	U
NAP	1.4		0.057	J	0.02	U
TCDD						
TCDD	1.22E-02		2.99E-04		2.27E-05	
Metals						
Cr	1070		33.9		13.3	
CrVI	96.1		0.4	U	0.4	U

COI	BW-20 07/24/08 Fill Primary 0.0-6.0 ft 5.0-6.0 ft		BW-20 07/25/08 Mat Primary 6.0-10.0 ft 9.0-10.0 ft		BW-20 07/25/08 Sand Primary 15.0-15.25 ft 15.0-15.25 ft		BW-20 07/25/08 Clay Primary 24.0-26.0 ft 25.0-26.0 ft	
VOCs								
124-TCB	16	U	0.21	U	58	J	0.057	U
14-DCB	17	U	0.69	J	3400		0.66	
SVOCs								
2-MNAP	370		95		2.8		0.024	U
BaA	400		150		0.67		0.017	U
BaP	330		90		0.53		0.013	U
BbF	470		140		0.72		0.016	U
CARB	190		58		0.31	J	0.018	U
DiAA	52		13	J	0.084	J	0.027	U
HCB	1.1	U	2.5	U	0.024	U	0.026	U
I123P	150		47		0.29	J	0.015	U
NAP	1600		300		13		0.021	U
TCDD								
TCDD	4.36E-02		3.94E-02		3.60E-01		–	
Metals								
Cr	2650		1040		10.4		21.2	
CrVI	0.4	U	0.4	U	0.4	U	0.4	U

Constituent of Interest (COI)	Abbreviation	Units	Criterion(1)
Volatile Organics (VOCs)			
1,2,4-Trichlorobenzene	124-TCB	mg/Kg	820
1,4-Dichlorobenzene	14-DCB	mg/Kg	13
Semivolatile Organics (SVOCs)			
2-Methylnaphthalene	2-MNAP	mg/Kg	2400
Benzo(a)anthracene	BaA	mg/Kg	2
Benzo(a)pyrene	BaP	mg/Kg	0.2
Benzo(b)fluoranthene	BbF	mg/Kg	2
Carbazole	CARB	mg/Kg	96
Dibenzo(a,h)anthracene	DiAA	mg/Kg	0.2
Hexachlorobenzene	HCB	mg/Kg	1
Indeno(1,2,3-cd)pyrene	I123P	mg/Kg	2
Naphthalene	NAP	mg/Kg	17
Polychlorinated Dioxins/Furans (Dioxin Equivalents)			
2,3,7,8-TCDD	TCDD	ug/Kg	1
Polychlorinated Biphenyls (Aroclors) (PCBs)			
Aroclor 1016	1016	mg/Kg	1
Aroclor 1232	1232	mg/Kg	1
Aroclor 1248	1248	mg/Kg	1
Aroclor 1254	1254	mg/Kg	1
Aroclor 1260	1260	mg/Kg	1
Metals			
Chromium(3)	Cr	mg/Kg	120,000
Chromium (Hexavalent)(2)	CrVI	mg/Kg	20

NOTES:
1. Criteria are the NJDEP Non-Residential Direct Contact Soil Remediation Standards (online at www.nj.gov/dep/srp/regs/rs/rs_appendix1.pdf) unless noted otherwise.
2. The 1 ug/kg benchmark for 2,3,7,8-TCDD equivalents is the United States Environmental Protection Agency residential guideline per OSWER Directive 9200.4-26.
3. Nonpromulgated criteria for total (trivalent) and hexavalent chromium determined by chromium workgroup (www.state.nj.us/dep/srp/guidance). Criterion for residential exposure to trivalent chromium was used for total chromium.

Exceedances are shown in bold, shaded typeface. Data qualifiers are as follows:
J - Inorganic results. Result is an estimated concentration. Quantitated below the reporting limit.
U - Not detected at the detection limit indicated.
P - Organic results. Percent difference between initial and confirmation column results is greater than 40%.

REV #	DATE	DESCRIPTION	APPD
△			
△			
△			
△			

REFERENCE:

LEGEND

- PROPERTY BOUNDARY
- EXISTING FENCE
- EXISTING BUILDING/STRUCTURES
- FORMER BUILDING/STRUCTURES
- EXISTING GROUND SURFACE ELEVATION CONTOURS
- BW-5 — BARRIER WALL ALIGNMENT SOIL BORING LOCATION
- GT-1 — GEOTECHNICAL SOIL BORING LOCATION (STABILITY/SETTLEMENT ANALYSIS)
- SC-MW-13L — SAND UNIT GROUNDWATER MONITORING WELL LOCATION
- TSWC-01 — HYDRAULIC CONTROL SYSTEM IN-SITU TRENCH SPOIL WASTE CLASSIFICATION (TSWC) SAMPLE LOCATION
- SB-1 — SOIL BORING LOCATION (SAMPLE COLLECTED)(ERM-1996)
- SB-2 — SOIL BORING LOCATION (VISUAL/FIELD SCREENING)(ERM-1996)
- SB-2A/B — SOIL BORING LOCATION (WESTON-1992)
- SB-15 — SOIL BORING LOCATION (KEY-1998)
- D-7 — DNAPL DELINEATION BORING

0 200 400 FEET

COOPERATING PARTIES GROUP

DRWN: SCC	DATE: 11/14/12
CHKD: RJH	DATE: 11/14/12
APPD: JSZ	DATE: 11/14/12
SCALE: AS SHOWN	

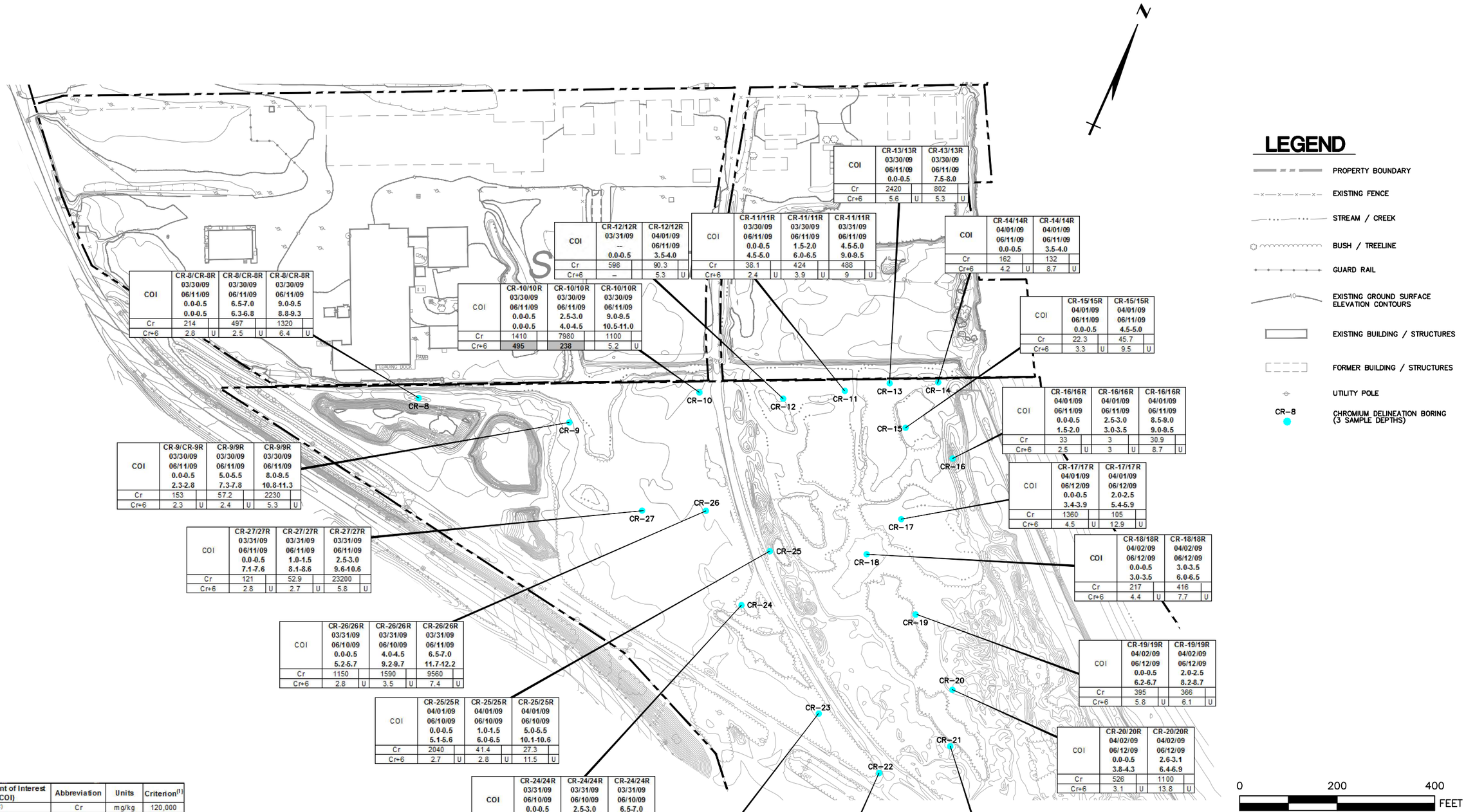
KEY ENVIRONMENTAL INCORPORATED

SITE CHARACTERIZATION SUMMARY REPORT
STANDARD CHLORINE CHEMICAL CO., INC. SITE
KEARNY, HUDSON COUNTY, NEW JERSEY

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

SUBSURFACE S



COI	CR-8/CR-8R 03/30/09 06/11/09 0.0-0.5 0.0-0.5		CR-8/CR-8R 03/30/09 06/11/09 6.5-7.0 6.3-6.8		CR-8/CR-8R 03/30/09 06/11/09 9.0-9.5 8.8-9.3	
Cr	214		497		1320	
Cr+6	2.8	U	2.5	U	6.4	U

COI	CR-9/CR-9R 03/30/09 06/11/09 0.0-0.5 2.3-2.8		CR-9/9R 03/30/09 06/11/09 5.0-5.5 7.3-7.8		CR-9/9R 03/30/09 06/11/09 8.0-9.5 10.8-11.3	
Cr	153		57.2		2230	
Cr+6	2.3	U	2.4	U	5.3	U

COI	CR-10/10R 03/30/09 06/11/09 0.0-0.5 0.0-0.5		CR-10/10R 03/30/09 06/11/09 2.5-3.0 4.0-4.5		CR-10/10R 03/30/09 06/11/09 9.0-9.5 10.5-11.0	
Cr	1410		7980		1100	
Cr+6	**495**		**238**		5.2	U

COI	CR-12/12R 03/31/09 -- 0.0-0.5		CR-12/12R 04/01/09 06/11/09 3.5-4.0	
Cr	598		90.3	
Cr+6	--		5.3	U

COI	CR-11/11R 03/30/09 06/11/09 0.0-0.5 4.5-5.0		CR-11/11R 03/30/09 06/11/09 1.5-2.0 6.0-6.5		CR-11/11R 03/31/09 06/11/09 4.5-5.0 9.0-9.5	
Cr	38.1		424		488	
Cr+6	2.4	U	3.9	U	9	U

COI	CR-13/13R 03/30/09 06/11/09 0.0-0.5		CR-13/13R 03/30/09 06/11/09 7.5-8.0	
Cr	2420		802	
Cr+6	5.6	U	5.3	U

COI	CR-14/14R 04/01/09 06/11/09 0.0-0.5		CR-14/14R 04/01/09 06/11/09 3.5-4.0	
Cr	162		132	
Cr+6	4.2	U	8.7	U

COI	CR-15/15R 04/01/09 06/11/09 0.0-0.5		CR-15/15R 04/01/09 06/11/09 4.5-5.0	
Cr	22.3		45.7	
Cr+6	3.3	U	9.5	U

COI	CR-16/16R 04/01/09 06/11/09 0.0-0.5 1.5-2.0		CR-16/16R 04/01/09 06/11/09 2.5-3.0 3.0-3.5		CR-16/16R 04/01/09 06/11/09 8.5-9.0 9.0-9.5	
Cr	33		3		30.9	
Cr+6	2.5	U	3	U	8.7	U

COI	CR-17/17R 04/01/09 06/12/09 0.0-0.5 3.4-3.9		CR-17/17R 04/01/09 06/12/09 2.0-2.5 5.4-5.9	
Cr	1360		105	
Cr+6	4.5	U	12.9	U

COI	CR-18/18R 04/02/09 06/12/09 0.0-0.5 3.0-3.5		CR-18/18R 04/02/09 06/12/09 3.0-3.5 6.0-6.5	
Cr	217		416	
Cr+6	4.4	U	7.7	U

COI	CR-19/19R 04/02/09 06/12/09 0.0-0.5 6.2-6.7		CR-19/19R 04/02/09 06/12/09 2.0-2.5 8.2-8.7	
Cr	395		366	
Cr+6	5.8	U	6.1	U

COI	CR-20/20R 04/02/09 06/12/09 0.0-0.5 3.8-4.3		CR-20/20R 04/02/09 06/12/09 2.6-3.1 6.4-6.9	
Cr	526		1100	
Cr+6	3.1	U	13.8	U

COI	CR-21/21R 04/02/09 06/12/09 0.0-0.5 3.3-3.8		CR-21/21R 04/02/09 06/12/09 3.5-4.0 6.8-7.3	
Cr	26.1		692	
Cr+6	2.5	U	13.8	U

COI	CR-22/22R 04/01/09 06/10/09 0.0-0.5 6.9-7.4		CR-22/22R 04/02/09 06/10/09 3.0-3.5 9.9-10.4	
Cr	96.6		42.1	
Cr+6	3.1	U	10.1	U

COI	CR-23/23R 04/01/09 06/10/09 0.0-0.5 8.0-8.5		CR-23/23R 04/01/09 06/10/09 2.0-2.5 10.0-10.5	
Cr	246		6120	
Cr+6	5		5.7	U

COI	CR-24/24R 03/31/09 06/10/09 0.0-0.5 7.5-8.0		CR-24/24R 03/31/09 06/10/09 2.5-3.0 10.0-10.5		CR-24/24R 03/31/09 06/10/09 6.5-7.0 14.0-14.5	
Cr	5290		6180		6170	
Cr+6	**121**		**173**		**21.3**	

COI	CR-25/25R 04/01/09 06/10/09 0.0-0.5 5.1-5.6		CR-25/25R 04/01/09 06/10/09 1.0-1.5 6.0-6.5		CR-25/25R 04/01/09 06/10/09 5.0-5.5 10.1-10.6	
Cr	2040		41.4		27.3	
Cr+6	2.7	U	2.8	U	11.5	U

COI	CR-26/26R 03/31/09 06/10/09 0.0-0.5 5.2-5.7		CR-26/26R 03/31/09 06/10/09 4.0-4.5 9.2-9.7		CR-26/26R 03/31/09 06/11/09 6.5-7.0 11.7-12.2	
Cr	1150		1590		9560	
Cr+6	2.8	U	3.5	U	7.4	U

COI	CR-27/27R 03/31/09 06/11/09 0.0-0.5 7.1-7.6		CR-27/27R 03/31/09 06/11/09 1.0-1.5 8.1-8.6		CR-27/27R 03/31/09 06/11/09 2.5-3.0 9.6-10.6	
Cr	121		52.9		23200	
Cr+6	2.8	U	2.7	U	5.8	U

Constituent of Interest (COI)	Abbreviation	Units	Criterion[1]
Chromium[2]	Cr	mg/kg	120,000
Chromium (Hexavalent)[2]	Cr+6	mg/kg	20

NOTES:
1. Samples for hexavalent chromium analysis were recollected and analyzed after completion of data validation on the initial samples was completed. PDM fill had been placed during the interim and consequently differences in depths between the June and March samples are evident. The June depths correspond to the pre-fill March depths.
2. Nonpromulgated criteria for total (trivalent) and hexavalent chromium determined by chromium workgroup (www.state.nj.us/dep/srp/guidance). Criterion for residential exposure to trivalent chromium was used for total chromium.

Exceedances are shown in bold, shaded typeface. Data qualifiers are as follows:
U - Not detected at the detection limit indicated.

REV #	DATE	DESCRIPTION	APPD
3			
2			
1			

REFERENCE:
1. VERTICAL REFERENCE: NATIONAL GEODETIC VERTICAL DATUM (NGVD 1929).
2. EXISTING GROUND SURFACE ELEVATION CONTOURS PER AIR SURVEY, DULLES, VIRGINIA, APRIL 14, 2001. HORIZONTAL REFERENCE NEW JERSEY STATE PLANE COORDINATES (NAD 1927). VERTICAL REFERENCE NATIONAL GEODETIC VERTICAL DATUM (NGVD 1929).
3. PROPERTY BOUNDARY PER PAULUS, SOKOLOWSKI, SARTOR, CONSULTING ENGINEERS, AUGUST 1995.

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

COOPERATING PARTIES GROUP

DRWN: SCC	DATE: 11/14/12
CHKD: RJH	DATE: 11/14/12
APPD: JSZ	DATE: 11/14/12
SCALE: AS SHOWN	

KEY ENVIRONMENTAL INCORPORATED

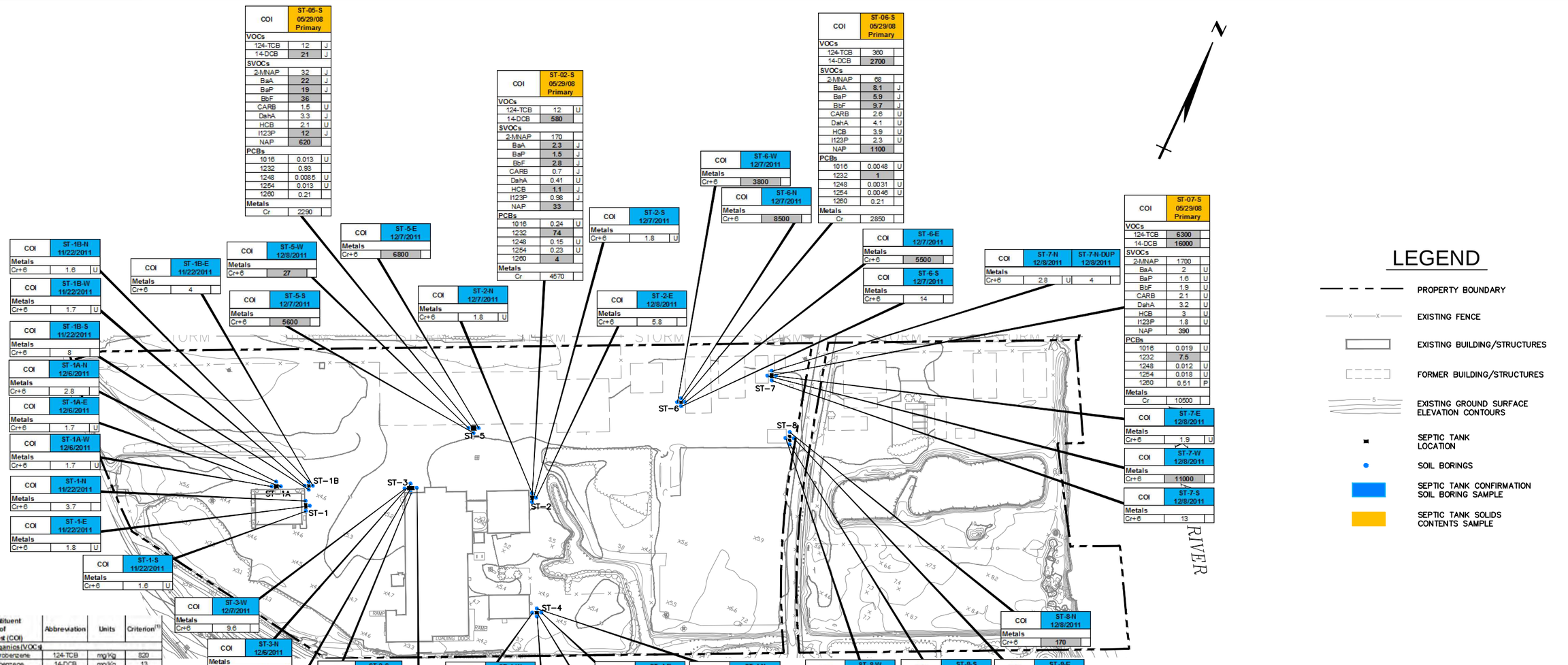
SITE CHARACTERIZATION SUMMARY REPORT
STANDARD CHLORINE CHEMICAL CO., INC. SITE
KEARNY, HUDSON COUNTY, NEW JERSEY

SURFACE AND SUBSURFACE SOIL
CHROMIUM RESULTS
SEABOARD PROPERTY (2009)

PROJECT NO: 2012-14

FIGURE 4-3

y:\00civil\kearny\site characterization summary report\figure 4-3 copr analytical results.dwg Last Saved By: Scomer 12/7/2012 11:48 AM Plotted By: Shelly Comer 12/7/2012 12:15 PM Scale: 1:1



COI	ST-05-S 05/29/08 Primary	
VOCs		
124-TCB	12	J
14-DCB	21	J
SVOCs		
2-MNAP	32	J
BaA	22	J
BaP	19	J
BbF	36	
CARB	1.5	U
DahA	3.3	J
HCB	2.1	U
I123P	12	J
NAP	620	
PCBs		
1016	0.013	U
1232	0.93	
1248	0.0085	U
1254	0.013	U
1260	0.21	
Metals		
Cr	2290	

COI	ST-02-S 05/29/08 Primary	
VOCs		
124-TCB	12	U
14-DCB	580	
SVOCs		
2-MNAP	170	
BaA	2.3	J
BaP	1.5	J
BbF	2.8	J
CARB	0.7	J
DahA	0.41	U
HCB	1.1	J
I123P	0.98	J
NAP	33	
PCBs		
1016	0.24	U
1232	74	
1248	0.15	U
1254	0.23	U
1260	4	
Metals		
Cr	4570	

COI	ST-06-S 05/29/08 Primary	
VOCs		
124-TCB	360	
14-DCB	2700	
SVOCs		
2-MNAP	68	
BaA	8.1	J
BaP	5.9	J
BbF	9.7	J
CARB	2.6	U
DahA	4.1	U
HCB	3.9	U
I123P	2.3	U
NAP	1100	
PCBs		
1016	0.0048	U
1232	1	
1248	0.0031	U
1254	0.0046	U
1260	0.21	
Metals		
Cr	2850	

COI	ST-07-S 05/29/08 Primary	
VOCs		
124-TCB	6300	
14-DCB	16000	
SVOCs		
2-MNAP	1700	
BaA	2	U
BaP	1.6	U
BbF	1.9	U
CARB	2.1	U
DahA	3.2	U
HCB	3	U
I123P	1.8	U
NAP	390	
PCBs		
1016	0.019	U
1232	7.5	
1248	0.012	U
1254	0.018	U
1260	0.51	P
Metals		
Cr	10500	

COI	ST-1B-N 11/22/2011
Metals	
Cr+6	1.6 U

COI	ST-1B-W 11/22/2011
Metals	
Cr+6	1.7 U

COI	ST-1B-S 11/22/2011
Metals	
Cr+6	8

COI	ST-1A-N 12/6/2011
Metals	
Cr+6	2.8

COI	ST-1A-E 12/6/2011
Metals	
Cr+6	1.7 U

COI	ST-1A-W 12/6/2011
Metals	
Cr+6	1.7 U

COI	ST-1-N 11/22/2011
Metals	
Cr+6	3.7

COI	ST-1-E 11/22/2011
Metals	
Cr+6	1.8 U

COI	ST-1-S 11/22/2011
Metals	
Cr+6	1.6 U

COI	ST-1B-E 11/22/2011
Metals	
Cr+6	4

COI	ST-5-W 12/8/2011
Metals	
Cr+6	27

COI	ST-5-S 12/7/2011
Metals	
Cr+6	5600

COI	ST-5-E 12/7/2011
Metals	
Cr+6	6800

COI	ST-2-N 12/7/2011
Metals	
Cr+6	1.8 U

COI	ST-2-S 12/7/2011
Metals	
Cr+6	1.8 U

COI	ST-2-E 12/8/2011
Metals	
Cr+6	5.8

COI	ST-6-W 12/7/2011
Metals	
Cr+6	3800

COI	ST-6-N 12/7/2011
Metals	
Cr+6	8500

COI	ST-6-E 12/7/2011
Metals	
Cr+6	5500

COI	ST-6-S 12/7/2011
Metals	
Cr+6	14

COI	ST-7-N 12/8/2011	ST-7-N-DUP 12/8/2011
Metals		
Cr+6	2.8 U	4

COI	ST-7-E 12/8/2011
Metals	
Cr+6	1.9 U

COI	ST-7-W 12/8/2011
Metals	
Cr+6	11000

COI	ST-7-S 12/8/2011
Metals	
Cr+6	13

COI	ST-8-N 12/8/2011
Metals	
Cr+6	170

COI	ST-8-W 12/8/2011
Metals	
Cr+6	2.2 J

COI	ST-8-S 12/8/2011
Metals	
Cr+6	1.9 U

COI	ST-8-E 12/8/2011
Metals	
Cr+6	6900

COI	ST-3-W 12/7/2011
Metals	
Cr+6	9.6

COI	ST-3-N 12/6/2011
Metals	
Cr+6	1.8 U

COI	ST-3-S 12/7/2011
Metals	
Cr+6	5.1

COI	ST-3-E 12/7/2011	ST-3-E DUP 12/7/2011
Metals		
Cr+6	1.7 U	0.17 U

COI	ST-4-W 12/7/2011
Metals	
Cr+6	2 U

COI	ST-4-S 12/7/2011
Metals	
Cr+6	1.8 U

COI	ST-4-E 12/7/2011
Metals	
Cr+6	1.8 U

COI	ST-4-N 12/7/2011
Metals	
Cr+6	2 U

COI	ST-03-S 05/29/08 Primary	
VOCs		
124-TCB	120	
14-DCB	680	
SVOCs		
2-MNAP	6	J
BaA	3.7	J
BaP	3.9	J
BbF	4	J
CARB	2.5	J
DahA	2.1	U
HCB	2	U
I123P	2.4	J
NAP	81	
PCBs		
1016	0.013	U
1232	0.015	U
1248	0.0081	U
1254	0.012	U
1260	0.012	U
Metals		
Cr	2360	

COI	ST-04-S 05/29/08 Primary	
VOCs		
124-TCB	2600	
14-DCB	6400	
SVOCs		
2-MNAP	4500	
BaA	4.8	U
BaP	6.7	J
BbF	4.7	U
CARB	5	U
DahA	7.7	U
HCB	7.3	U
I123P	4.3	U
NAP	1100	
PCBs		
1016	0.018	U
1232	1.5	
1248	0.011	U
1254	0.017	U
1260	0.18	P
Metals		
Cr	701	

Constituent of Interest (COI)	Abbreviation	Units	Criterion[1]
Volatile Organics (VOCs)			
1,2,4-Trichlorobenzene	124-TCB	mg/Kg	820
1,4-Dichlorobenzene	14-DCB	mg/Kg	13
Semivolatile Organics (SVOCs)			
2-Methylnaphthalene	2-MNAP	mg/Kg	2400
Benzo(a)anthracene	BaA	mg/Kg	2
Benzo(a)pyrene	BaP	mg/Kg	0.2
Benzo(b)fluoranthene	BbF	mg/Kg	2
Carbazole	CARB	mg/Kg	96
Dibenz o(a, h)anthracene	DahA	mg/Kg	0.2
Hexachlorobenzene	HCB	mg/Kg	1
Indeno(1,2,3-cd)pyrene	I123P	mg/Kg	2
Naphthalene	NAP	mg/Kg	17
Polychlorinated Dioxins/Furans (Dioxin Equivalents)			
2,3,7,8-TCDD	TCDD	ug/Kg	1
Polychlorinated Biphenyls (Aroclors) (PCBs)			
Aroclor 1016	1016	mg/Kg	1
Aroclor 1232	1232	mg/Kg	1
Aroclor 1248	1248	mg/Kg	1
Aroclor 1254	1254	mg/Kg	1
Aroclor 1260	1260	mg/Kg	1
Metals			
Chromium[3]	Cr	mg/Kg	120,000
Chromium (Hexavalent)[3]	Cr+6	mg/Kg	20

NOTES:
1. Criteria are the NJDEP Non-Residential Direct Contact Soil Remediation Standards (online at www.nj.gov/dep/srp/regs/rs/rs_appendix1.pdf) unless noted otherwise.
2. The 1 ug/kg benchmark for 2,3,7,8-TCDD equivalents is the United States Environmental Protection Agency residential guideline per OSWER Directive 9200.4-26.
3. Nonpromulgated criteria for total (trivalent) and hexavalent chromium determined by chromium workgroup (www.state.nj.us/dep/srp/guidance). Criterion for residential exposure to trivalent chromium was used for total chromium.

Exceedances are shown in bold, shaded typeface. Data qualifiers are as follows:
J - Inorganic results. Result is an estimated concentration. Quantitated below the reporting limit.
U - Not detected at the detection limit indicated.
P - Organic results. Percent difference between initial and confirmation column results is greater than 40%.

LEGEND

- PROPERTY BOUNDARY
- EXISTING FENCE
- EXISTING BUILDING/STRUCTURES
- FORMER BUILDING/STRUCTURES
- EXISTING GROUND SURFACE ELEVATION CONTOURS
- SEPTIC TANK LOCATION
- SOIL BORINGS
- SEPTIC TANK CONFIRMATION SOIL BORING SAMPLE
- SEPTIC TANK SOLIDS CONTENTS SAMPLE

0 200 400 FEET

COOPERATING PARTIES GROUP

DRWN: SCC	DATE: 11/14/12
CHKD: RJH	DATE: 11/14/12
APPD: JSZ	DATE: 11/14/12
SCALE: AS SHOWN	

KEY ENVIRONMENTAL INCORPORATED

SITE CHARACTERIZATION SUMMARY REPORT
STANDARD CHLORINE CHEMICAL CO., INC. SITE
KEARNY, HUDSON COUNTY, NEW JERSEY

REV #	DATE	DESCRIPTION	APPD
3			
2			
1			

REFERENCE:

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

SEPTIC TANK SOLIDS AND ADJACENT BORING ANALYTICAL RESULTS (2008–2011)

PROJECT NO: 2012–14

FIGURE 4–4

y:\0Civil\kearny\site characterization summary report\figure 4-4 septic tank solids analytical results.dwg Last Saved By: Scomer 12/7/2012 12:02 PM Plotted By: Shelly Comer 12/7/2012 12:27 PM Scale: 1:1

COI	SC-PZ-1U 04/23/08 Primary	
VOCs		
1,2,4-TCB	0.42	U
1,2-DCB	0.65	U
1,3-DCB	0.66	U
1,4-DCB	0.6	U
BNZ	0.81	U
CB	0.71	U
SVOCs		
2,4,6-TCP	0.71	U
2,4-DCP	0.61	U
2,4-DMP	0.65	U
2-CP	0.57	U
2-MNAP	0.59	U
B(a)A	0.51	U
B(a)P	0.55	U
B(b)F	0.39	U
B(k)F	0.49	U
HCB	0.54	U
I(1,2,3)P	0.59	U
NAP	0.54	U
PCP	1	U
PHL	0.28	U
Metals		
Cr	**119**	
PCBs		
1016	0.12	U
1248	0.11	U
1260	0.066	U

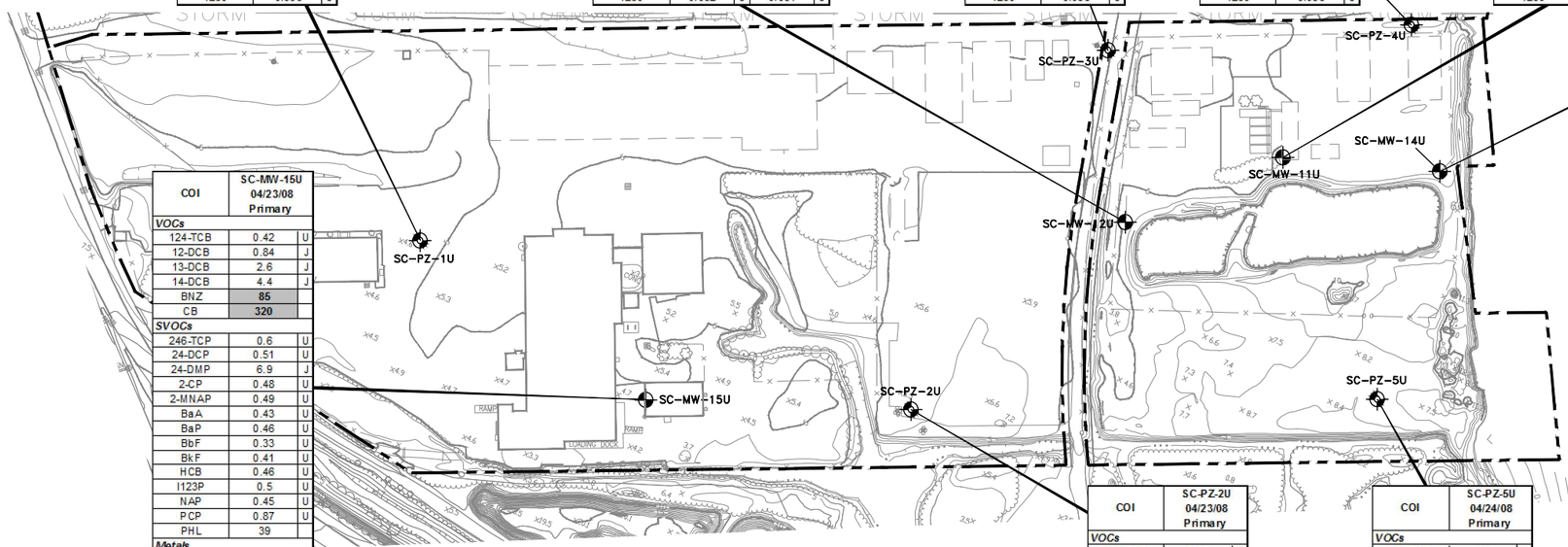
COI	SC-MW-12U 04/23/08 Primary		SC-MW-12U 04/23/08 Duplicate	
VOCs				
124-TCB	0.42	U	1.2	J
12-DCB	4	J	11	
13-DCB	10		18	
14-DCB	35		55	
BNZ	0.81	U	0.91	J
CB	37		**53**	
SVOCs				
246-TCP	0.65	U	0.62	U
24-DCP	1.4	J	1.1	J
24-DMP	12		29	
2-CP	0.52	U	0.49	U
2-MNAP	0.69	J	14	
BaA	0.47	U	0.45	U
BaP	0.5	U	0.48	U
BbF	0.36	U	0.34	U
BkF	0.45	U	0.43	U
HCB	0.5	U	0.47	U
I123P	0.54	U	0.52	U
NAP	6.2	J	**310**	
PCP	0.95	U	0.9	U
PHL	5.1	J	36	
Metals				
Cr	32.6		6.4	
PCBs				
1016	0.11	U	0.11	U
1248	0.1	U	0.1	U
1260	0.062	U	0.061	U

COI	SC-PZ-3U 04/23/08 Primary	
VOCs		
124-TCB	0.42	U
12-DCB	4.5	J
13-DCB	0.66	U
14-DCB	1	J
BNZ	**10**	
CB	2.4	J
SVOCs		
246-TCP	0.62	U
24-DCP	0.53	U
24-DMP	12	
2-CP	0.49	U
2-MNAP	**590**	
BaA	0.45	U
BaP	0.48	U
BbF	0.34	U
BkF	0.43	U
HCB	0.47	U
I123P	0.52	U
NAP	**5000**	
PCP	0.9	U
PHL	5.8	J
Metals		
Cr	**142**	
PCBs		
1016	0.11	U
1248	0.099	U
1260	0.059	U

COI	SC-PZ-4U 04/25/08 Primary	
VOCs		
1,2,4-TCB	4.1	J
1,2-DCB	4.2	J
1,3-DCB	2.6	J
1,4-DCB	4.4	J
BNZ	0.81	U
CB	17	
SVOCs		
2,4,6-TCP	0.65	U
2,4-DCP	0.56	U
2,4-DMP	9.8	J
2-CP	0.52	U
2-MNAP	1.4	J
B(a)A	**2.3**	J
B(a)P	**2.2**	J
B(b)F	**3.8**	J
B(k)F	0.45	U
HCB	0.5	U
I(1,2,3)P	**1.7**	J
NAP	21	
PCP	0.95	U
PHL	29	
Metals		
Cr	**3650**	
PCBs		
1016	0.1	U
1248	0.095	U
1260	0.056	U

COI	SC-MW-11U 04/24/08 Primary	
VOCs		
124-TCB	**5000**	
12-DCB	**5200**	
13-DCB	**1100**	
14-DCB	**1800**	
BNZ	**36**	J
CB	**450**	
SVOCs		
246-TCP	11	
24-DCP	**46**	
24-DMP	99	
2-CP	0.5	U
2-MNAP	**260**	
BaA	**1.6**	J
BaP	**0.72**	J
BbF	**1.1**	J
BkF	0.53	J
HCB	0.48	U
I123P	0.52	U
NAP	**14000**	
PCP	**10**	J
PHL	49	
Metals		
Cr	**396**	
PCBs		
1016	**1.3**	
1248	0.094	U
1260	0.056	U

COI	SC-MW-14U 04/24/08 Primary	
VOCs		
124-TCB	**230**	J
12-DCB	**7200**	
13-DCB	**5600**	
14-DCB	**9000**	
BNZ	41	U
CB	**490**	
SVOCs		
246-TCP	0.63	U
24-DCP	0.54	U
24-DMP	7.8	J
2-CP	0.5	U
2-MNAP	3.6	J
BaA	0.46	U
BaP	0.49	U
BbF	0.35	U
BkF	0.44	U
HCB	0.48	U
I123P	0.53	U
NAP	**740**	
PCP	0.92	U
PHL	5.1	J
Metals		
Cr	**427**	
PCBs		
1016	0.1	U
1248	0.095	U
1260	0.056	U



COI	SC-MW-15U 04/23/08 Primary	
VOCs		
124-TCB	0.42	U
12-DCB	0.84	J
13-DCB	2.6	J
14-DCB	4.4	J
BNZ	**85**	
CB	**320**	
SVOCs		
246-TCP	0.6	U
24-DCP	0.51	U
24-DMP	6.9	J
2-CP	0.48	U
2-MNAP	0.49	U
BaA	0.43	U
BaP	0.46	U
BbF	0.33	U
BkF	0.41	U
HCB	0.46	U
I123P	0.5	U
NAP	0.45	U
PCP	0.87	U
PHL	39	
Metals		
Cr	3.1	B
PCBs		
1016	0.11	U
1248	0.098	U
1260	0.059	U

COI	SC-PZ-2U 04/23/08 Primary	
VOCs		
124-TCB	0.89	J
12-DCB	10	
13-DCB	3.4	J
14-DCB	3.2	J
BNZ	1.5	J
CB	10	
SVOCs		
246-TCP	0.6	U
24-DCP	0.51	U
24-DMP	3.3	J
2-CP	0.48	U
2-MNAP	1.2	J
BaA	0.44	U
BaP	0.46	U
BbF	0.33	U
BkF	0.42	U
HCB	0.46	U
I123P	0.5	U
NAP	2.1	J
PCP	0.88	U
PHL	6.9	J
Metals		
Cr	**4690**	
PCBs		
1016	0.11	U
1248	0.1	U
1260	0.06	U

COI	SC-PZ-5U 04/24/08 Primary	
VOCs		
124-TCB	11	
12-DCB	3.4	J
13-DCB	0.66	U
14-DCB	3.5	J
BNZ	**15**	
CB	25	
SVOCs		
246-TCP	0.69	U
24-DCP	0.59	U
24-DMP	13	
2-CP	0.55	U
2-MNAP	4.3	J
BaA	0.5	U
BaP	0.53	U
BbF	0.38	U
BkF	0.48	U
HCB	0.53	U
I123P	0.58	U
NAP	50	
PCP	1	U
PHL	870	
Metals		
Cr	**2090**	
PCBs		
1016	0.1	U
1248	0.094	U
1260	0.056	U

Constituent of Interest (COI)	Abbreviation	Units	Criterion[1]
Volatile Organics (VOCs)			
1,2,4-Trichlorobenzene	124-TCB	ug/L	9
1,2-Dichlorobenzene	12-DCB	ug/L	600
1,3-Dichlorobenzene	13-DCB	ug/L	600
1,4-Dichlorobenzene	14-DCB	ug/L	75
Benzene	BNZ	ug/L	1
Chlorobenzene	CB	ug/L	50
Semivolatile Organics (SVOCs)			
2,4,6-Trichlorophenol	246-TCP	ug/L	20
2,4-Dichlorophenol	24-DCP	ug/L	20
2,4-Dimethylphenol	24-DMP	ug/L	100
2-Chlorophenol	2-CP	ug/L	40
2-Methylnaphthalene[2]	2-MNAP	ug/L	30
Benzo(a)anthracene	BaA	ug/L	0.1
Benzo(a)pyrene	BaP	ug/L	0.1
Benzo(b)fluoranthene	BbF	ug/L	0.2
Benzo(k)fluoranthene	BkF	ug/L	0.5
Hexachlorobenzene	HCB	ug/L	0.02
Indeno(1,2,3-cd)pyrene	I123P	ug/L	0.2
Naphthalene	NAP	ug/L	300
Pentachlorophenol	PCP	ug/L	0.3
Phenol	PHL	ug/L	2000
Metals			
Chromium (Total)	Cr	ug/L	70
PCBs			
Aroclor 1016	1016	ug/L	0.5
Aroclor 1248	1248	ug/L	0.5
Aroclor 1260	1260	ug/L	0.5

NOTES:
1. Specific Ground Water Quality Criteria - Class IIA - from Appendix Table 1 New Jersey Administrative Code 7:9C unless otherwise noted. Last amended July 7, 2008.
2. Interim Ground Water Quality Criteria as listed at www.nj.gov/dep/wms/bwqsa/gwqs_interim_criteria_table.htm.

Exceedances are shown in bold, shaded typeface. Data qualifiers are as follows:
U - Not detected at the detection limit indicated.
J - Inorganic results. Result is an estimated concentration. Quantitated below the reporting limit.
B - Inorganic results. Result is an estimate. Quantitation between the detection limit and the reporting limit.
P - Organic results. Percent difference between initial and confirmation column results is greater than 40%.

0 200 400 FEET

LEGEND

- PROPERTY BOUNDARY
- EXISTING FENCE
- EXISTING BUILDING/STRUCTURES
- FORMER BUILDING/STRUCTURES
- EXISTING GROUND SURFACE ELEVATION CONTOURS
- SC-MW-11U — SHALLOW (FILL) UNIT GROUNDWATER MONITORING WELL LOCATION
- SC-PZ-5U — SHALLOW (FILL) UNIT PIEZOMETER LOCATION

COOPERATING PARTIES GROUP

DRWN: SCC	DATE: 11/14/12	KEY ENVIRONMENTAL INCORPORATED
CHKD: RJH	DATE: 11/14/12	
APPD: JSZ	DATE: 11/14/12	
SCALE: AS SHOWN		

SITE CHARACTERIZATION SUMMARY REPORT
STANDARD CHLORINE CHEMICAL CO., INC. SITE
KEARNY, HUDSON COUNTY, NEW JERSEY

REV #	DATE	DESCRIPTION	APPD
3			
2			
1			

REFERENCE:

NOTE:
GROUNDWATER ON THE SCCC SITE IS CURRENTLY CONFINED WITHIN THE LIMITS OF THE SLURRY/SHEET PILE WALLS.

ISSUE DATE:

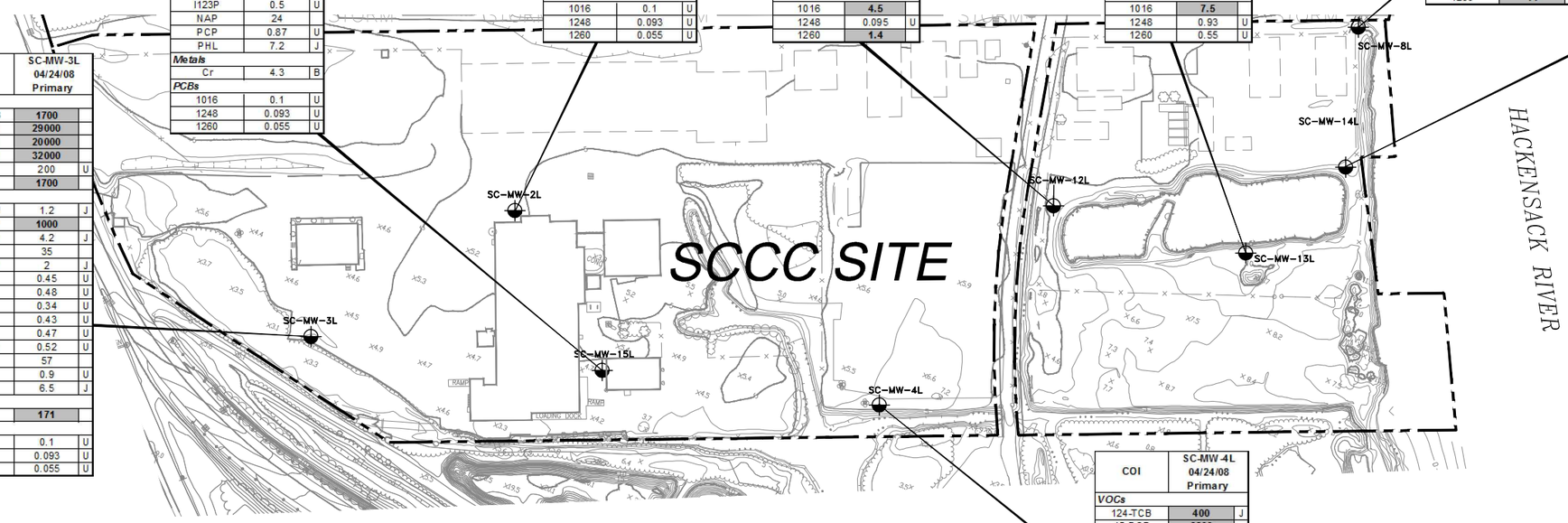
KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

SHALLOW GROUNDWATER ANALYTICAL RESULTS (2008)

PROJECT NO: 2012-14

FIGURE 4-5

y:\00civil\kearny\site characterization summary report\figure 4-5 shallow groundwater analytical.dwg Last Saved By: Scomer 12/7/2012 11:59 AM Plotted By: Shelly Comer 12/7/2012 12:30 PM Scale: 1:1



COI	SC-MW-15L 04/24/08 Primary	
VOCs		
124-TCB	**440**	J
12-DCB	**36000**	
13-DCB	**26000**	
14-DCB	**42000**	
BNZ	**350**	J
CB	**7800**	
SVOCs		
246-TCP	0.6	U
24-DCP	**48**	
24-DMP	3.9	J
2-CP	0.48	U
2-MNAP	0.89	J
BaA	0.43	U
BaP	0.46	U
BbF	0.33	U
BkF	0.41	U
HCB	0.46	U
I123P	0.5	U
NAP	24	
PCP	0.87	U
PHL	7.2	J
Metals		
Cr	4.3	B
PCBs		
1016	0.1	U
1248	0.093	U
1260	0.055	U

COI	SC-MW-2L 04/24/08 Primary	
VOCs		
1,2,4-TCB	**840**	
1,2-DCB	**12000**	
1,3-DCB	**9700**	
1,4-DCB	**15000**	
BNZ	81	U
CB	**730**	
SVOCs		
2,4,6-TCP	0.6	U
2,4-DCP	**360**	
2,4-DMP	6.7	J
2-CP	18	
2-MNAP	0.73	J
B(a)A	0.43	U
B(a)P	0.46	U
B(b)F	0.33	U
B(k)F	0.41	U
HCB	0.46	U
I(1,2,3)P	0.5	U
NAP	30	
PCP	0.87	U
PHL	8.2	J
Metals		
Cr	**12100**	
PCBs		
1016	0.1	U
1248	0.093	U
1260	0.055	U

COI	SC-MW-12L 04/25/08 Primary	
VOCs		
1,2,4-TCB	**4200**	
1,2-DCB	**12000**	
1,3-DCB	**4600**	
1,4-DCB	**6200**	
BNZ	**280**	J
CB	**770**	
SVOCs		
2,4,6-TCP	0.62	U
2,4-DCP	0.53	U
2,4-DMP	**2500**	
2-CP	26	
2-MNAP	**150**	J
B(a)A	0.45	U
B(a)P	0.48	U
B(b)F	0.34	U
B(k)F	0.43	U
HCB	**43**	
I(1,2,3)P	0.52	U
NAP	**2400**	
PCP	0.9	U
PHL	**3700**	
Metals		
Cr	57.4	
PCBs		
1016	**4.5**	
1248	0.095	U
1260	**1.4**	

COI	SC-MW-13L 04/25/08 Primary	
VOCs		
124-TCB	**2400**	
12-DCB	**700**	
13-DCB	160	
14-DCB	380	
BNZ	20	U
CB	33	J
SVOCs		
246-TCP	**170**	
24-DCP	2.6	U
24-DMP	**3100**	J
2-CP	2.5	U
2-MNAP	**790**	
BaA	2.2	U
BaP	2.4	U
BbF	1.7	U
BkF	2.1	U
HCB	2.4	U
I123P	2.6	U
NAP	**1700**	J
PCP	4.5	U
PHL	**19000**	
Metals		
Cr	**6930**	
PCBs		
1016	**7.5**	
1248	0.93	U
1260	0.55	U

COI	SC-MW-8L 04/24/08 Primary	
VOCs		
124-TCB	**6700**	
12-DCB	**10000**	
13-DCB	**3700**	
14-DCB	**4900**	
BNZ	**270**	J
CB	**1700**	
SVOCs		
246-TCP	**120**	
24-DCP	**450**	
24-DMP	**660**	
2-CP	**75**	
2-MNAP	**290**	
BaA	**0.99**	J
BaP	0.5	U
BbF	**1**	J
BkF	0.45	U
HCB	**7.8**	J
I123P	0.54	U
NAP	**5300**	
PCP	0.95	U
PHL	1500	
Metals		
Cr	**281**	
PCBs		
1016	**78**	
1248	**58**	
1260	**14**	

COI	SC-MW-14L 04/24/08 Primary	
VOCs		
1,2,4-TCB	**3400**	
1,2-DCB	**5300**	
1,3-DCB	**1900**	
1,4-DCB	**2400**	
BNZ	**150**	
CB	**920**	
SVOCs		
2,4,6-TCP	0.61	U
2,4-DCP	0.52	U
2,4-DMP	**28000**	
2-CP	0.49	U
2-MNAP	**700**	J
B(a)A	0.44	U
B(a)P	1.9	J
B(b)F	0.34	U
B(k)F	0.43	U
HCB	0.47	U
I(1,2,3)P	0.51	U
NAP	**9100**	J
PCP	0.9	U
PHL	**40000**	
Metals		
Cr	**132**	
PCBs		
1016	**1.2**	
1248	**0.61**	PG
1260	0.055	U

COI	SC-MW-3L 04/24/08 Primary	
VOCs		
1,2,4-TCB	**1700**	
1,2-DCB	**29000**	
1,3-DCB	**20000**	
1,4-DCB	**32000**	
BNZ	200	U
CB	**1700**	
SVOCs		
2,4,6-TCP	1.2	J
2,4-DCP	**1000**	
2,4-DMP	4.2	J
2-CP	35	
2-MNAP	2	J
B(a)A	0.45	U
B(a)P	0.48	U
B(b)F	0.34	U
B(k)F	0.43	U
HCB	0.47	U
I(1,2,3)P	0.52	U
NAP	57	
PCP	0.9	U
PHL	6.5	J
Metals		
Cr	**171**	
PCBs		
1016	0.1	U
1248	0.093	U
1260	0.055	U

COI	SC-MW-4L 04/24/08 Primary	
VOCs		
124-TCB	**400**	J
12-DCB	**9300**	
13-DCB	**9000**	
14-DCB	**13000**	
BNZ	**380**	J
CB	**440**	J
SVOCs		
246-TCP	0.64	U
24-DCP	**170**	
24-DMP	**680**	
2-CP	5.1	J
2-MNAP	**32**	
BaA	0.46	U
BaP	0.49	U
BbF	0.35	U
BkF	0.44	U
HCB	**1.1**	J
I123P	0.53	U
NAP	**350**	
PCP	0.93	U
PHL	55	
Metals		
Cr	**10700**	
PCBs		
1016	0.1	U
1248	0.095	U
1260	0.056	U

Constituent of Interest (COI)	Abbreviation	Units	Criterion[1]
Volatile Organics (VOCs)			
1,2,4-Trichlorobenzene	124-TCB	ug/L	9
1,2-Dichlorobenzene	12-DCB	ug/L	600
1,3-Dichlorobenzene	13-DCB	ug/L	600
1,4-Dichlorobenzene	14-DCB	ug/L	75
Benzene	BNZ	ug/L	1
Chlorobenzene	CB	ug/L	50
Semivolatile Organics (SVOCs)			
2,4,6-Trichlorophenol	246-TCP	ug/L	20
2,4-Dichlorophenol	24-DCP	ug/L	20
2,4-Dimethylphenol	24-DMP	ug/L	100
2-Chlorophenol	2-CP	ug/L	40
2-Methylnaphthalene[2]	2-MNAP	ug/L	30
Benzo(a)anthracene	BaA	ug/L	0.1
Benzo(a)pyrene	BaP	ug/L	0.1
Benzo(b)fluoranthene	BbF	ug/L	0.2
Benzo(k)fluoranthene	BkF	ug/L	0.5
Hexachlorobenzene	HCB	ug/L	0.02
Indeno(1,2,3-cd)pyrene	I123P	ug/L	0.2
Naphthalene	NAP	ug/L	300
Pentachlorophenol	PCP	ug/L	0.3
Phenol	PHL	ug/L	2000
Metals			
Chromium (Total)	Cr	ug/L	70
PCBs			
Aroclor 1016	1016	ug/L	0.5
Aroclor 1248	1248	ug/L	0.5
Aroclor 1260	1260	ug/L	0.5

NOTES:
1. Specific Ground Water Quality Criteria - Class IIA - from Appendix Table 1 New Jersey Administrative Code 7:9C unless otherwise noted. Last amended July 7, 2008.y 7, 2008.
2. Interim Ground Water Quality Criteria as listed at www.nj.gov/dep/wms/bwqsa/gwqs_interim_criteria_table.htm.

Exceedances are shown in bold, shaded typeface. Data qualifiers are as follows:
U - Not detected at the detection limit indicated.
J - Inorganic results. Result is an estimated concentration. Quantitated below the reporting limit.
P - Organic results. Percent difference between initial and confirmation column results is greater than 40%.
B - Inorganic results. Result is an estimate. Quantitation between the detection limit and the reporting limit.

0 200 400 FEET

LEGEND

- PROPERTY BOUNDARY
- EXISTING FENCE
- EXISTING BUILDING/STRUCTURES
- FORMER BUILDING/STRUCTURES
- EXISTING GROUND SURFACE ELEVATION CONTOURS
- SC-MW-13L — SAND UNIT GROUNDWATER MONITORING WELL LOCATION

REV #	DATE	DESCRIPTION	APPD

REFERENCE:

NOTE:
GROUNDWATER ON THE SCCC SITE IS CURRENTLY CONFINED WITHIN THE LIMITS OF THE SLURRY/SHEET PILE WALLS.

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

COOPERATING PARTIES GROUP

DRWN: SCC	DATE: 11/14/12	KEY ENVIRONMENTAL INCORPORATED
CHKD: RJH	DATE: 11/14/12	
APPD: JSZ	DATE: 11/14/12	
SCALE: AS SHOWN		

SITE CHARACTERIZATION SUMMARY REPORT
STANDARD CHLORINE CHEMICAL CO., INC. SITE
KEARNY, HUDSON COUNTY, NEW JERSEY

SAND UNIT GROUNDWATER ANALYTICAL RESULTS (2008)

PROJECT NO: 2012-14

FIGURE 4-6

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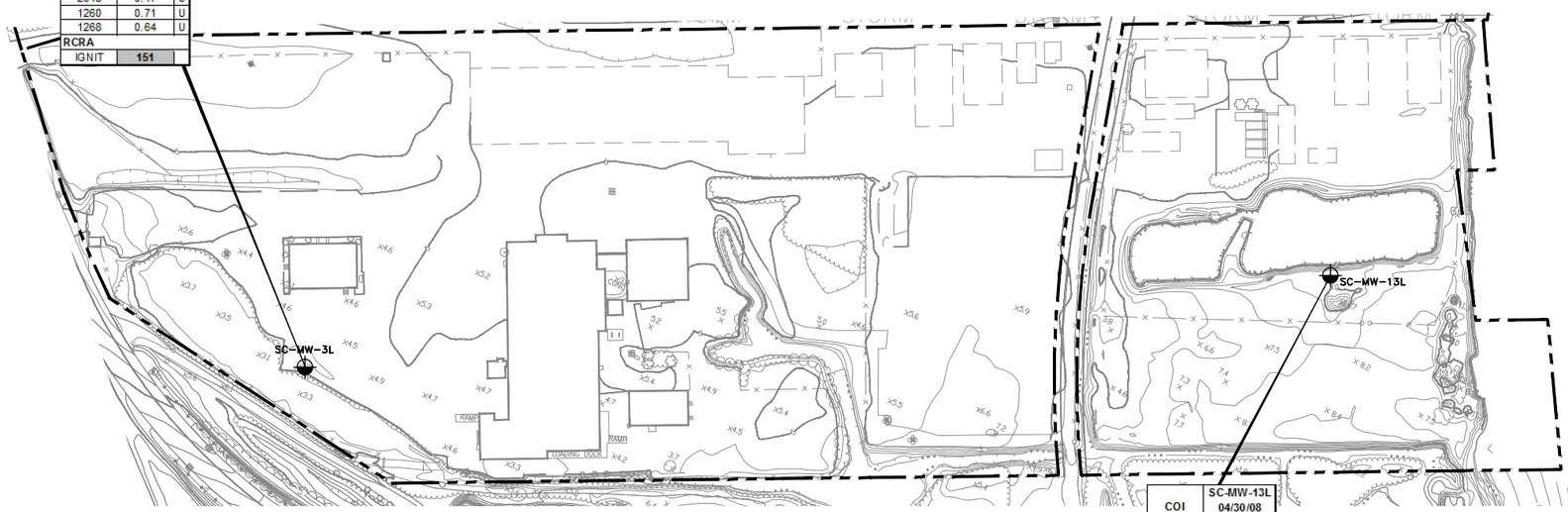
COI	SC-MW-3L 04/30/08 Primary	
TCDD TEQ		
TCDD	1.5E+01	
TCLP		
14-DCB	520000	
BEN	110	J
CB	8800	
CRES	43	J
HCB	820	U
PCE	120	J
TCE	56	U
PCBs		
1016	0.74	U
2348	0.47	U
1260	0.71	U
1268	0.64	U
RCRA		
IGNIT	**151**	



COI	SC-MW-13L 04/30/08 Primary	
TCDD TEQ		
TCDD	2.8E+04	
TCLP		
14-DCB	6300	J
BEN	52	U
CB	410	
CRES	1400	J
HCB	12000	
PCE	220	J
TCE	58	J
PCBs		
1016	8600	
2348	6000	
1260	2100	
1268	600	J
RCRA		
IGNIT	>200	

LEGEND

- PROPERTY BOUNDARY
- EXISTING FENCE
- EXISTING BUILDING/STRUCTURES
- FORMER BUILDING/STRUCTURES
- EXISTING GROUND SURFACE ELEVATION CONTOURS
- SC-MW-13L — SAND UNIT GROUNDWATER MONITORING WELL LOCATION

Constituent of Interest (COI)	Abbreviation	Units	Criterion
Polychlorinated Dioxins/Furans (2,3,7,8 Equivalents) (TCDD TEQ)			
2,3,7,8-TCDD Equivalents[2]	TCDD	ug/Kg	1
Toxicity Characteristic Leaching Procedure[a] (TCLP)			
1,4-Dichlorobenzene	14-DCB	mg/Kg	7.5
Benzene	BEN	mg/Kg	0.5
Chlorobenzene	CB	mg/Kg	100
Cresols	CRES	mg/Kg	200
Hexachlorobenzene	HCB	mg/Kg	0.13
Tetrachloroethene	PCE	mg/Kg	0.7
Trichloroethene	TCE	mg/Kg	0.5
Polychlorinated Biphenyls (Aroclors) (PCBs)			
Aroclor 1016	1016	mg/Kg	1
Aroclor 1248	2348	mg/Kg	1
Aroclor 1260	1260	mg/Kg	1
Aroclor 1268	1268	mg/Kg	1

NOTES:
1. Criteria are the NJDEP Non-Residential Direct Contact Soil Remediation Standards (online at www.nj.gov/dep/srp/regs/rs/rs_appendix1.pdf) unless noted otherwise.
2. The 1 ug/kg benchmark for 2,3,7,8-TCDD equivalents is the United States Environmental Protection Agency residential guideline per OSWER Directive 9200.4-26.

Exceedances are shown in bold, shaded typeface. Data qualifiers are as follows:
J - Organic results. Result is an estimate. Quantitated between the detection limit and the reporting limit.
U - Not detected at the detection limit indicated.

NOTE:
DNAPL IS CURRENTLY BEING COLLECTED VIA RECOVERY WELLS IN THESE AREAS.

0 200 400 FEET

COOPERATING PARTIES GROUP

DRWN: SCC	DATE: 11/14/12	KEY ENVIRONMENTAL INCORPORATED
CHKD: RJH	DATE: 11/14/12	
APPD: JSZ	DATE: 11/14/12	
SCALE: AS SHOWN		

SITE CHARACTERIZATION SUMMARY REPORT
STANDARD CHLORINE CHEMICAL CO., INC. SITE
KEARNY, HUDSON COUNTY, NEW JERSEY

REV #	DATE	DESCRIPTION	APPD
3			
2			
1			

REFERENCE:

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

DNAPL SAMPLE
ANALYTICAL RESULTS (2008)

PROJECT NO: 2012-14

FIGURE 4-7

y:\00civil\kearny\site characterization summary report\figure 4-7 dnapl soil borings analytical results.dwg Last Saved By: Scomer 12/7/2012 12:22 PM Plotted By: Shelly Corner 12/7/2012 12:23 PM Scale: 1:1

COI	WLWC-01 05/27/08 Primary	
	0.0-4.0 ft 3.0-4.0 ft	
VOCs		
124-TCB	23	
14-DCB	**190**	
SVOCs		
24-DMP	1900	
2-MNAP	**12000**	J
4-MP	**1400**	
NAP	**210000**	
PHNL	440	J
TCDD TEQ		
TCDD	**1.8E+01**	
PCBs		
1232	1.7	U
1248	0.95	U
1260	**3.4**	J
Metals		
Cr	60.9	
Cr+6	**65.4**	

COI	ELWC-06 05/28/08 Primary		ELWC-06 05/28/08 Duplicate	
	0.0-3.2 ft 3.0-4.0 ft		0.0-4.0 ft 3.0-4.0 ft	
VOCs				
124-TCB	**3400**		**2600**	
14-DCB	**120**		**110**	
SVOCs				
24-DMP	17000	U	1700	U
2-MNAP	21000	U	**3700**	J
4-MP	45000	U	4500	U
NAP	**240000**		**250000**	
PHNL	22000	U	2200	U
TCDD TEQ				
TCDD	**1.2E+03**		**2.6E+03**	
PCBs				
1232	**6200**		**3100**	
1248	**1300**		**780**	
1260	7.1	U	3.6	U
Metals				
Cr	428		355	
Cr+6	**129**		**126**	

COI	ELWC-05 05/28/08 Primary	
	0.0-4.0 ft 3.0-4.0 ft	
VOCs		
124-TCB	**3300**	
14-DCB	**2100**	
SVOCs		
24-DMP	17000	U
2-MNAP	21000	U
4-MP	45000	U
NAP	**400000**	
PHNL	22000	U
TCDD TEQ		
TCDD	**2.5E+03**	
PCBs		
1232	**2300**	
1248	**650**	PG
1260	14	U
Metals		
Cr	122	
Cr+6	**45.8**	

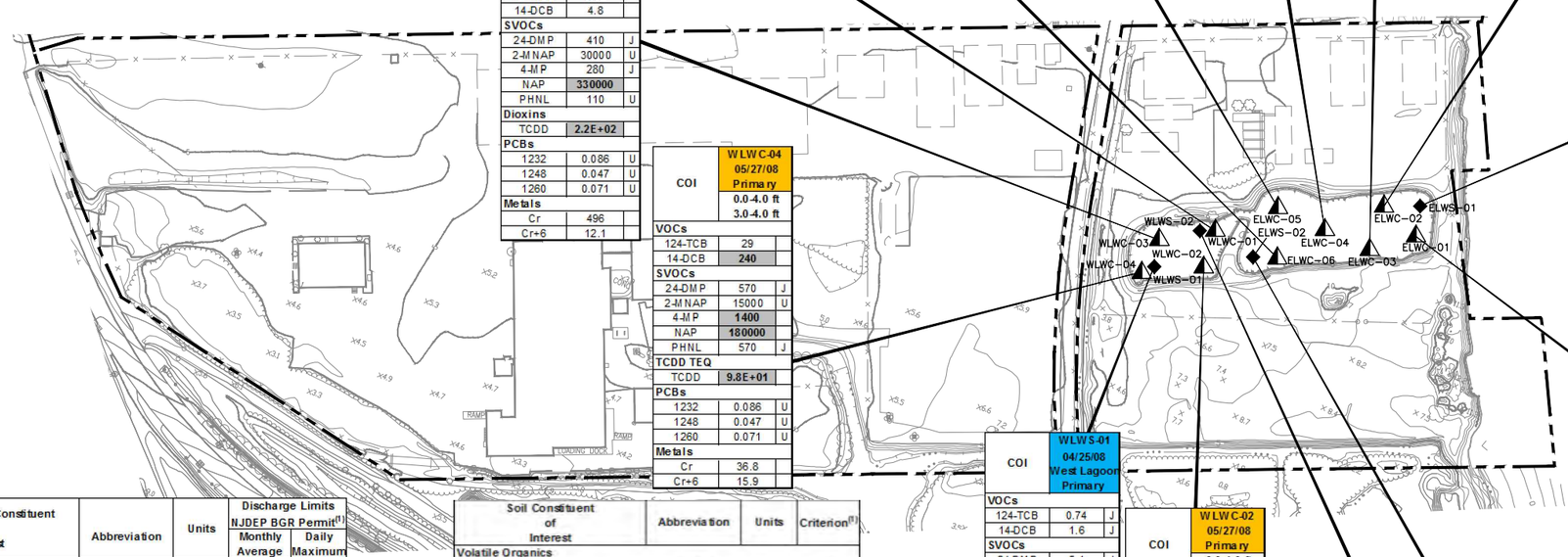
COI	ELWC-04 05/28/08 Primary	
	0.0-4.0 ft 1.0-2.0 ft	
VOCs		
124-TCB	35	
14-DCB	4	J
SVOCs		
24-DMP	17000	U
2-MNAP	**24000**	J
4-MP	45000	U
NAP	**770000**	
PHNL	22000	U
TCDD TEQ		
TCDD	7.0E-01	
PCBs		
1232	**200**	
1248	**46**	
1260	0.71	U
Metals		
Cr	8.1	
Cr+6	0.4	U

COI	ELWC-03 05/28/08 Primary	
	0.0-4.0 ft 3.0-4.0 ft	
VOCs		
124-TCB	130	
14-DCB	**54**	
SVOCs		
24-DMP	17000	U
2-MNAP	21000	U
4-MP	45000	U
NAP	**600000**	
PHNL	22000	U
TCDD TEQ		
TCDD	**1.0E+01**	
PCBs		
1232	0.086	U
1248	0.047	U
1260	0.071	U
Metals		
Cr	51.9	
Cr+6	8	

COI	ELWC-02 05/28/08 Primary	
	0.0-4.0 ft 1.0-2.0 ft	
VOCs		
124-TCB	20	
14-DCB	11	J
SVOCs		
24-DMP	17000	U
2-MNAP	21000	U
4-MP	45000	U
NAP	**430000**	
PHNL	22000	U
TCDD TEQ		
TCDD	1.3E-01	
PCBs		
1232	0.086	U
1248	0.047	U
1260	0.071	U
Metals		
Cr	51.5	
Cr+6	14.9	

COI	WLWC-03 05/27/08 Primary	
	0.0-4.0 ft 1.0-2.0 ft	
VOCs		
124-TCB	0.62	
14-DCB	4.8	
SVOCs		
24-DMP	410	J
2-MNAP	30000	U
4-MP	280	J
NAP	**330000**	
PHNL	110	U
Dioxins		
TCDD	**2.2E+02**	
PCBs		
1232	0.086	U
1248	0.047	U
1260	0.071	U
Metals		
Cr	496	
Cr+6	12.1	

COI	WLWC-04 05/27/08 Primary	
	0.0-4.0 ft 3.0-4.0 ft	
VOCs		
124-TCB	29	
14-DCB	**240**	
SVOCs		
24-DMP	570	J
2-MNAP	15000	U
4-MP	**1400**	
NAP	**180000**	
PHNL	570	J
TCDD TEQ		
TCDD	**9.8E+01**	
PCBs		
1232	0.086	U
1248	0.047	U
1260	0.071	U
Metals		
Cr	36.8	
Cr+6	15.9	



COI	ELWS-01 04/25/08 East Lagoon Primary	
VOCs		
124-TCB	5.3	
14-DCB	12	
SVOCs		
24-DMP	0.55	U
2-MNAP	0.63	J
4-MP	27	
NAP	6.6	J
PHNL	24	
PCBs		
1232	0.12	U
1248	0.095	U
1260	0.056	U
Metals		
Cr	**118**	
Cr+6	10	U

COI	ELWC-01 05/28/08 Primary	
	0.0-4.0 ft 1.0-2.0 ft	
VOCs		
124-TCB	5.7	
14-DCB	3.4	
SVOCs		
24-DMP	17000	U
2-MNAP	21000	U
4-MP	45000	U
NAP	**260000**	
PHNL	22000	U
TCDD TEQ		
TCDD	**4.7E+01**	
PCBs		
1232	**70**	
1248	**18**	
1260	0.71	U
Metals		
Cr	305	
Cr+6	**278**	

COI	WLWS-01 04/25/08 West Lagoon Primary	
VOCs		
124-TCB	0.74	J
14-DCB	1.6	J
SVOCs		
24-DMP	5.1	J
2-MNAP	0.52	U
4-MP	14	
NAP	8.4	J
PHNL	**22**	
PCBs		
1232	0.12	U
1248	0.094	U
1260	0.056	U
Metals		
Cr	**61**	
Cr+6	10	U

COI	WLWC-02 05/27/08 Primary	
	0.0-4.0 ft 3.0-4.0 ft	
VOCs		
124-TCB	24	
14-DCB	**190**	
SVOCs		
24-DMP	710	J
2-MNAP	**21000**	
4-MP	**1300**	
NAP	**400000**	
PHNL	640	J
TCDD TEQ		
TCDD	**4.5E+01**	
PCBs		
1232	1.7	U
1248	0.95	U
1260	**2.5**	JP
Metals		
Cr	3220	
Cr+6	**564**	

COI	WLWS-02 04/25/08 West Lagoon Primary	
VOCs		
124-TCB	1.4	J
14-DCB	11	
SVOCs		
24-DMP	8	J
2-MNAP	0.55	J
4-MP	18	
NAP	7.3	J
PHNL	**20**	
PCBs		
1232	0.12	U
1248	0.095	U
1260	0.056	U
Metals		
Cr	61.2	
Cr+6	10	U

COI	ELWS-02 04/25/08 East Lagoon Primary		ELWS-02D 04/25/08 East Lagoon Duplicate	
VOCs				
124-TCB	13		12	
14-DCB	**44**		**45**	
SVOCs				
24-DMP	**24**		**19**	
2-MNAP	0.52	U	0.51	U
4-MP	50		47	
NAP	2.3	J	2	J
PHNL	**24**		**21**	
PCBs				
1232	0.12	U	0.12	U
1248	0.095	U	0.093	U
1260	0.056	U	0.055	U
Metals				
Cr	**115**		**118**	
Cr+6	10	U	10	U

LEGEND

- PROPERTY BOUNDARY
- EXISTING FENCE
- EXISTING BUILDING/STRUCTURES
- FORMER BUILDING/STRUCTURES
- EXISTING GROUND SURFACE ELEVATION CONTOURS
- ELWC-01 — LAGOON SOLIDS SAMPLE LOCATION
- ELWS-01 — LAGOON PONDED WATER SAMPLE LOCATION
- LAGOON PONDED WATER SAMPLE LOCATION
- LAGOON SOLIDS SAMPLE LOCATION

0 200 400 FEET

Surface Water Constituent of Interest	Abbreviation	Units	Discharge Limits NJDEP BGR Permit[1] Monthly Average	Daily Maximum
Volatile Organics (VOCs)				
1,2,4-Trichlorobenzene	124-TCB	ug/L	68	140
1,4-Dichlorobenzene	14-DCB	ug/L	–	28
Semivolatile Organics (SVOCs)				
2,4-Dimethylphenol	24-DMP	ug/L	18	36
2-Methylnaphthalene	2-MNAP	ug/L	–	–
4-Methylphenol	4-MP	ug/L	–	–
Naphthalene	NAP	ug/L	–	–
Phenol	PHNL	ug/L	15	26
Polychlorinated Biphenyls (Aroclors) (PCBs)				
Aroclor 1232	1232	ug/L	–	0.05
Aroclor 1248	1248	ug/L	–	0.05
Aroclor 1260	1260	ug/L	–	0.05
Metals				
Chromium	Cr	ug/L	50	100
Chromium (Hexavalent)	Cr+6	ug/L	–	–

1. Criteria are as specified in the NJDEP Statewide Final NJPDES General Remediation Clean-up Permit (GRC) dated April 21, 2005. NJPDES Permit No. NJ0155438 Part III.

Potential exceedances of discharge limits are highlighted. Results which exceed both the monthly average and daily maximum are shown in bold, shaded typeface.
Results which exceed the monthly average but not the daily maximum are shown in shaded typeface. Results which exceed the daily maximum but not the monthly average (i.e., when a daily maximum limit does not exist) are shown in bold typeface.

Data qualifiers are as follows:
J - Organic results. Result is an estimate. Quantitated between the detection limit and the reporting limit.
J - Inorganic results. Result is an estimated concentration. Quantitated below the reporting limit.
P - Organic results. Percent difference between initial and confirmation column results is greater than 40%.
U - Not detected at the detection limit indicated.
-- - Not analyzed or criteria unavailable.

Soil Constituent of Interest	Abbreviation	Units	Criterion[1]
Volatile Organics			
1,2,4-Trichlorobenzene	124-TCB	mg/Kg	820
1,4-Dichlorobenzene	14-DCB	mg/Kg	13
Semivolatile Organics			
2,4-Dimethylphenol	24-DMP	mg/Kg	14000
2-Methylnaphthalene	2-MNAP	mg/Kg	2400
4-Methylphenol	4-MP	mg/Kg	340
Naphthalene	NAP	mg/Kg	17
Phenol	PHNL	mg/Kg	210000
Polychlorinated Dioxins/Furans			
Total 2,3,7,8-TCDD Equivalents[2]	TCDD	ug/Kg	1
Polychlorinated Biphenyls (Aroclors)			
Aroclor 1232	1232	mg/Kg	1
Aroclor 1248	1248	mg/Kg	1
Aroclor 1260	1260	mg/Kg	1
Metals			
Chromium[3]	Cr	mg/Kg	120,000
Chromium (Hexavalent)[3]	Cr+6	mg/Kg	20

1. Criteria are the NJDEP Non-Residential Direct Contact Soil Remediation Standards (online at www.nj.gov/dep/srp/regs/rs/rs_appendix1.pdf) unless noted otherwise.
2. The 1 ug/kg benchmark for 2,3,7,8-TCDD equivalents is the United States Environmental Protection Agency residential guideline per OSWER Directive 9200.4-26.
3. Nonpromulgated criteria for total (trivalent) and hexavalent chromium determined by chromium workgroup (www.state.nj.us/dep/srp/guidance). Criterion for residential exposure to trivalent chromium was used for total chromium.

Exceedances are shown in bold, shaded typeface. Data qualifiers are as follows:
B - Inorganic results. Result is an estimate. Quantitation between the detection limit and the reporting limit.
J - Organic results. Result is an estimate. Quantitated between the detection limit and the reporting limit.
J - Inorganic results. Result is an estimated concentration. Quantitated below the reporting limit.
P - Organic results. Percent difference between initial and confirmation column results is greater than 40%.
U - Not detected at the detection limit indicated.
-- - Not analyzed or criteria unavailable.

NOTE:
THESE SAMPLE LOCATIONS ARE WITHIN THE CONSOLIDATION AREA. WATER WAS REMOVED. SOFT LAGOON SOLIDS WERE STABILIZED, A GEOGRID WAS INSTALLED AND THE LAGOONS WERE BACKFILLED WITH CONSOLIDATED MATERIAL AND COVERED.

COOPERATING PARTIES GROUP

DRWN: SCC	DATE: 11/14/12	KEY ENVIRONMENTAL INCORPORATED
CHKD: RJH	DATE: 11/14/12	
APPD: JSZ	DATE: 11/14/12	
SCALE: AS SHOWN		

SITE CHARACTERIZATION SUMMARY REPORT
STANDARD CHLORINE CHEMICAL CO., INC. SITE
KEARNY, HUDSON COUNTY, NEW JERSEY

REV #	DATE	DESCRIPTION	APPD
3			
2			
1			

REFERENCE:

ISSUE DATE:

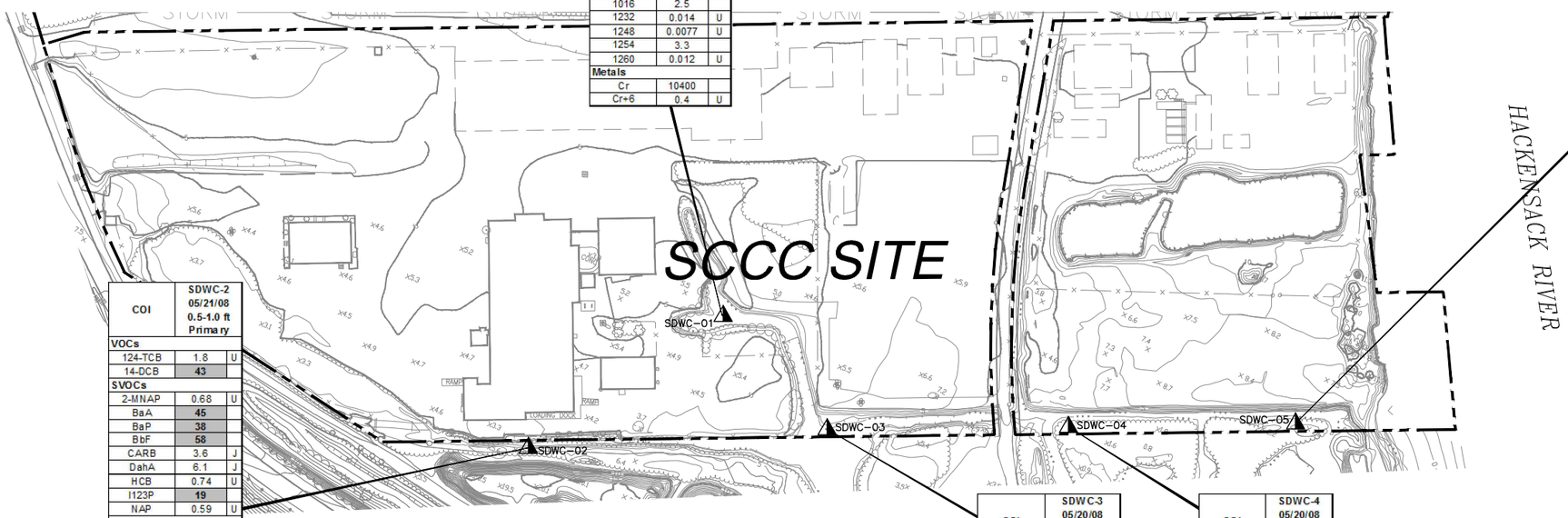
KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

LAGOON SOLIDS AND LIQUIDS ANALYTICAL RESULTS (2008)

PROJECT NO: 2012-14

FIGURE 4-8

y:\00civil\kearny\site characterization summary report\figure 4-8 lagoon solids and liquids analytical results.dwg Last Saved By: Scomer 12/7/2012 12:26 PM Plotted By: Shelly Comer 12/7/2012 12:27 PM Scale: 1:1



COI	SDWC-1 05/21/08 0.5-1.0 ft Primary	
VOCs		
124-TCB	0.48	J
14-DCB	**19**	
SVOCs		
2-MNAP	5	J
BaA	**27**	J
BaP	**26**	J
BbF	**40**	
CARB	7.2	J
DahA	2.9	J
HCB	2.4	U
I123P	**14**	J
NAP	**38**	J
TCDD		
TCDD	**1.0E+00**	
PCBs		
1016	2.5	
1232	0.014	U
1248	0.0077	U
1254	3.3	
1260	0.012	U
Metals		
Cr	10400	
Cr+6	0.4	U

COI	SDWC-5 05/20/08 0.5-1.0 ft Primary		SDWC-5 05/20/08 0.5-1.0 ft Duplicate	
VOCs				
124-TCB	4.3		0.12	
14-DCB	0.45	J	0.059	
SVOCs				
2-MNAP	0.14	J	0.87	
BaA	0.37	J	0.67	J
BaP	**0.44**	J	**0.77**	
BbF	0.78	J	1.3	
CARB	0.088	J	0.13	J
DahA	0.075	U	0.074	J
HCB	0.071	U	0.046	U
I123P	0.34	J	0.56	J
NAP	0.44	J	1.4	
TCDD				
TCDD	9.0E-02		**2.5E+00**	
PCBs				
1016	0.0088	U	0.0057	U
1232	0.094	PG	0.25	
1248	0.0056	U	0.0036	U
1254	0.0084	U	0.0054	U
1260	0.023	J	0.057	
Metals				
Cr	4920		999	
Cr+6	**24.3**		9.2	

COI	SDWC-2 05/21/08 0.5-1.0 ft Primary	
VOCs		
124-TCB	1.8	U
14-DCB	**43**	
SVOCs		
2-MNAP	0.68	U
BaA	**45**	
BaP	**38**	
BbF	**58**	
CARB	3.6	J
DahA	6.1	J
HCB	0.74	U
I123P	**19**	
NAP	0.59	U
TCDD		
TCDD	2.2E-01	
PCBs		
1016	0.33	P
1232	0.007	U
1248	0.0039	U
1254	0.0058	U
1260	2.2	
Metals		
Cr	1020	
Cr+6	16.9	

COI	SDWC-3 05/20/08 0.5-1.0 ft Primary	
VOCs		
124-TCB	0.15	U
14-DCB	1.3	
SVOCs		
2-MNAP	0.2	J
BaA	0.96	
BaP	**1.6**	
BbF	**2.4**	
CARB	0.039	U
DahA	0.39	J
HCB	0.057	U
I123P	1.3	
NAP	0.57	J
TCDD		
TCDD	2.9E-01	
PCBs		
1016	0.0072	U
1232	0.25	
1248	0.0046	U
1254	0.0069	U
1260	0.1	
Metals		
Cr	8700	
Cr+6	**29.5**	

COI	SDWC-4 05/20/08 0.5-1.0 ft Primary	
VOCs		
124-TCB	0.16	
14-DCB	0.047	
SVOCs		
2-MNAP	0.59	J
BaA	0.36	J
BaP	**0.43**	J
BbF	0.81	
CARB	0.08	J
DahA	0.084	J
HCB	0.044	U
I123P	0.34	J
NAP	0.93	
TCDD		
TCDD	6.2E-01	
PCBs		
1016	0.0056	U
1232	0.16	
1248	0.0035	U
1254	0.0053	U
1260	0.033	J
Metals		
Cr	1030	
Cr+6	13	

Constituent of Interest (COI)	Abbreviation	Units	Criterion[1]
Volatile Organics (VOCs)			
1,2,4-Trichlorobenzene	124-TCB	mg/Kg	820
1,4-Dichlorobenzene	14-DCB	mg/Kg	13
Semivolatile Organics (SVOCs)			
2-Methylnaphthalene	2-MNAP	mg/Kg	2400
Benzo(a)anthracene	BaA	mg/Kg	2
Benzo(a)pyrene	BaP	mg/Kg	0.2
Benzo(b)fluoranthene	BbF	mg/Kg	2
Carbazole	CARB	mg/Kg	96
Dibenzo(a,h)anthracene	DahA	mg/Kg	0.2
Hexachlorobenzene	HCB	mg/Kg	1
Indeno(1,2,3-cd)pyrene	I123P	mg/Kg	2
Naphthalene	NAP	mg/Kg	17
Polychlorinated Dioxins/Furans (Dioxin Equivalents)			
2,3,7,8-TCDD	TCDD	ug/Kg	1
Polychlorinated Biphenyls (Aroclors) (PCBs)			
Aroclor 1016	1016	mg/Kg	1
Aroclor 1232	1232	mg/Kg	1
Aroclor 1248	1248	mg/Kg	1
Aroclor 1254	1254	mg/Kg	1
Aroclor 1260	1260	mg/Kg	1
Metals			
Chromium[3]	Cr	mg/Kg	120,000
Chromium (Hexavalent)[3]	Cr+6	mg/Kg	20

NOTES:
1. Criteria are the NJDEP Non-Residential Direct Contact Soil Remediation Standards (online at www.nj.gov/dep/srp/regs/rs/rs_appendix1.pdf) unless noted otherwise.
2. The 1 ug/kg benchmark for 2,3,7,8-TCDD equivalents is the United States Environmental Protection Agency residential guideline per OSWER Directive 9200.4-26.
3. Nonpromulgated criteria for total (trivalent) and hexavalent chromium determined by chromium workgroup (www.state.nj.us/dep/srp/guidance). Criterion for residential exposure to trivalent chromium was used for total chromium.

Exceedances are shown in bold, shaded typeface. Data qualifiers are as follows:
J - Inorganic results. Result is an estimated concentration. Quantitated below the reporting limit.
U - Not detected at the detection limit indicated.
P - Organic results. Percent difference between initial and confirmation column results is greater than 40%.

0 200 400 FEET

LEGEND

- PROPERTY BOUNDARY
- EXISTING FENCE
- EXISTING BUILDING/STRUCTURES
- FORMER BUILDING/STRUCTURES
- EXISTING GROUND SURFACE ELEVATION CONTOURS
- SDWC-01 — SOUTH DITCH SEDIMENT SAMPLE LOCATION

NOTE:
SOUTH DITCH SOFT SOILS HAVE BEEN EXCAVATED AND EMPLACED IN THE SCCC SITE CONSOLIDATION AREA.

REV #	DATE	DESCRIPTION	APPD
3			
2			
1			

REFERENCE:

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

COOPERATING PARTIES GROUP

DRWN: SCC	DATE: 11/14/12
CHKD: RJH	DATE: 11/14/12
APPD: JSZ	DATE: 11/14/12
SCALE: AS SHOWN	

KEY ENVIRONMENTAL INCORPORATED

SITE CHARACTERIZATION SUMMARY REPORT
STANDARD CHLORINE CHEMICAL CO., INC. SITE
KEARNY, HUDSON COUNTY, NEW JERSEY

SOUTH DITCH SOFT SOILS
ANALYTICAL RESULTS (2008)

PROJECT NO: 2012-14

FIGURE 4-9

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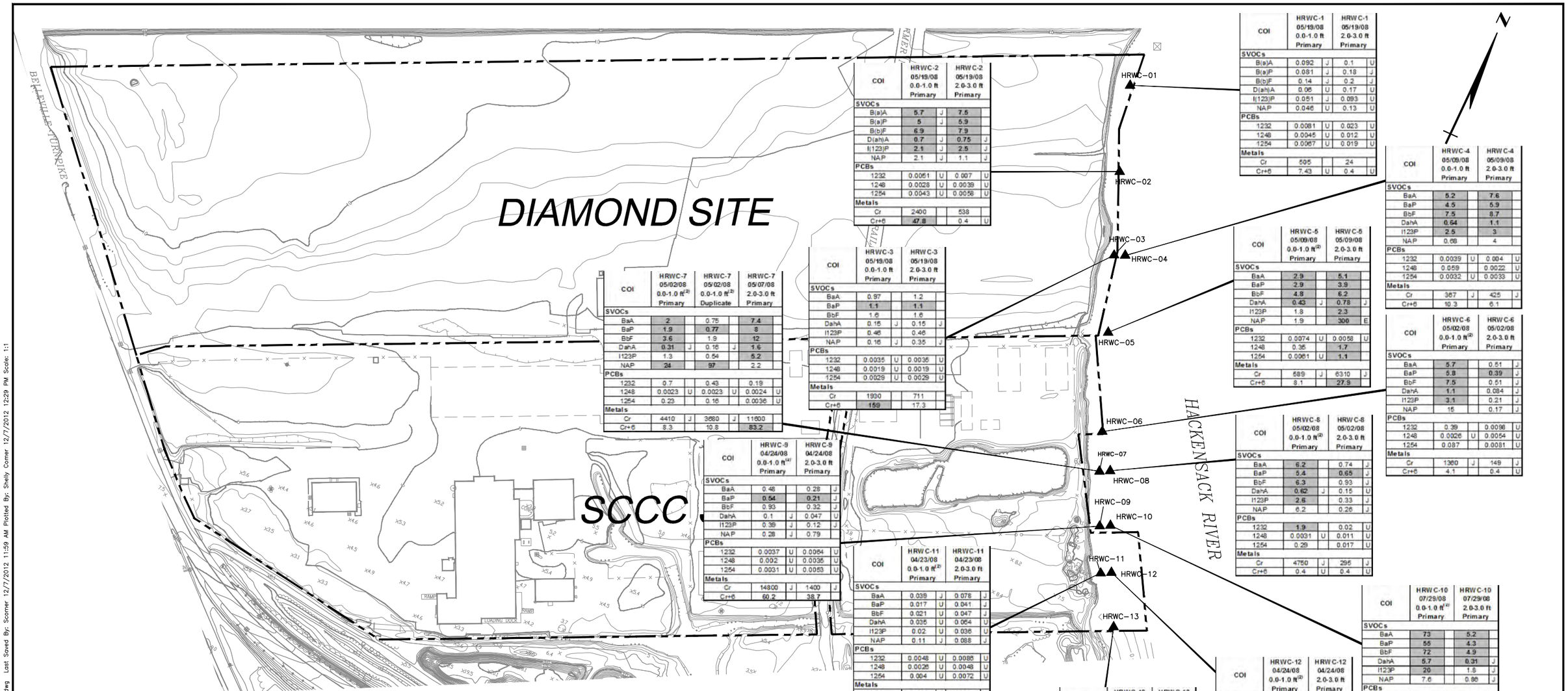


COI	HRWC-1 05/19/08 0.0-1.0 ft Primary		HRWC-1 05/19/08 2.0-3.0 ft Primary	
SVOCs				
B(a)A	0.092	J	0.1	U
B(a)P	0.081	J	0.18	J
B(b)F	0.14	J	0.2	J
D(ah)A	0.06	U	0.17	U
I(123)P	0.051	J	0.093	U
NAP	0.046	U	0.13	U
PCBs				
1232	0.0081	U	0.023	U
1248	0.0045	U	0.012	U
1254	0.0067	U	0.019	U
Metals				
Cr	505		24	
Cr+6	7.43	U	0.4	U

COI	HRWC-2 05/19/08 0.0-1.0 ft Primary		HRWC-2 05/19/08 2.0-3.0 ft Primary	
SVOCs				
B(a)A	5.7	J	7.5	
B(a)P	5	J	5.9	
B(b)F	6.9		7.9	
D(ah)A	0.7	J	0.75	J
I(123)P	2.1	J	2.5	J
NAP	2.1	J	1.1	J
PCBs				
1232	0.0051	U	0.007	U
1248	0.0028	U	0.0039	U
1254	0.0043	U	0.0058	U
Metals				
Cr	2400		538	
Cr+6	47.8		0.4	U

COI	HRWC-3 05/19/08 0.0-1.0 ft Primary		HRWC-3 05/19/08 2.0-3.0 ft Primary	
SVOCs				
BaA	0.97		1.2	
BaP	1.1		1.1	
BbF	1.6		1.6	
DahA	0.15	J	0.15	J
I123P	0.46		0.46	
NAP	0.16	J	0.35	J
PCBs				
1232	0.0035	U	0.0035	U
1248	0.0019	U	0.0019	U
1254	0.0029	U	0.0029	U
Metals				
Cr	1930		711	
Cr+6	159		17.3	

COI	HRWC-4 05/09/08 0.0-1.0 ft Primary		HRWC-4 05/09/08 2.0-3.0 ft Primary	
SVOCs				
BaA	5.2		7.6	
BaP	4.5		5.9	
BbF	7.5		8.7	
DahA	0.64		1.1	
I123P	2.5		3	
NAP	0.68		4	
PCBs				
1232	0.0039	U	0.004	U
1248	0.059		0.0022	U
1254	0.0032	U	0.0033	U
Metals				
Cr	367	J	425	J
Cr+6	10.3		6.1	

COI	HRWC-5 05/09/08 0.0-1.0 ft[2] Primary		HRWC-5 05/09/08 2.0-3.0 ft Primary	
SVOCs				
BaA	2.9		5.1	
BaP	2.9		3.9	
BbF	4.8		6.2	
DahA	0.43	J	0.78	J
I123P	1.8		2.3	
NAP	1.9		300	E
PCBs				
1232	0.0074	U	0.0058	U
1248	0.35		1.7	
1254	0.0061	U	1.1	
Metals				
Cr	589	J	6310	J
Cr+6	8.1		27.9	

COI	HRWC-6 05/02/08 0.0-1.0 ft[2] Primary		HRWC-6 05/02/08 2.0-3.0 ft Primary	
SVOCs				
BaA	5.7		0.51	J
BaP	5.8		0.39	J
BbF	7.5		0.51	J
DahA	1.1		0.084	J
I123P	3.1		0.21	J
NAP	15		0.17	J
PCBs				
1232	0.39		0.0096	U
1248	0.0026	U	0.0054	U
1254	0.087		0.0081	U
Metals				
Cr	1360	J	149	J
Cr+6	4.1		0.4	U

COI	HRWC-7 05/02/08 0.0-1.0 ft[2] Primary		HRWC-7 05/02/08 0.0-1.0 ft[2] Duplicate		HRWC-7 05/07/08 2.0-3.0 ft Primary	
SVOCs						
BaA	2		0.75		7.4	
BaP	1.9		0.77		8	
BbF	3.6		1.9		12	
DahA	0.31	J	0.16	J	1.6	
I123P	1.3		0.54		5.2	
NAP	24		97		2.2	
PCBs						
1232	0.7		0.43		0.19	
1248	0.0023	U	0.0023	U	0.0024	U
1254	0.23		0.16		0.0036	U
Metals						
Cr	4410	J	3680	J	11600	
Cr+6	8.3		10.8		83.2	

COI	HRWC-8 05/02/08 0.0-1.0 ft[2] Primary		HRWC-8 05/02/08 2.0-3.0 ft Primary	
SVOCs				
BaA	6.2		0.74	J
BaP	5.4		0.65	J
BbF	6.3		0.93	J
DahA	0.62	J	0.15	U
I123P	2.6		0.33	J
NAP	6.2		0.26	J
PCBs				
1232	1.9		0.02	U
1248	0.0031	U	0.011	U
1254	0.29		0.017	U
Metals				
Cr	4750	J	296	J
Cr+6	0.4	U	0.4	U

COI	HRWC-9 04/24/08 0.0-1.0 ft[4] Primary		HRWC-9 04/24/08 2.0-3.0 ft Primary	
SVOCs				
BaA	0.46		0.28	J
BaP	0.54		0.21	J
BbF	0.93		0.32	J
DahA	0.1	J	0.047	U
I123P	0.39	J	0.12	J
NAP	0.28	J	0.79	
PCBs				
1232	0.0037	U	0.0064	U
1248	0.002	U	0.0036	U
1254	0.0031	U	0.0053	U
Metals				
Cr	14800	J	1400	J
Cr+6	60.2		38.7	

COI	HRWC-10 07/29/08 0.0-1.0 ft[4] Primary		HRWC-10 07/29/08 2.0-3.0 ft Primary	
SVOCs				
BaA	73		5.2	
BaP	55		4.3	
BbF	72		4.9	
DahA	5.7		0.31	J
I123P	20		1.8	J
NAP	7.6		0.88	J
PCBs				
1232	0.1	PQ	0.019	U
1248	0.0032	U	0.011	U
1254	0.0049	U	0.016	U
Metals				
Cr	3620	J	499	J
Cr+6	4.8		0.4	U

COI	HRWC-11 04/23/08 0.0-1.0 ft[3] Primary		HRWC-11 04/23/08 2.0-3.0 ft Primary	
SVOCs				
BaA	0.039	U	0.076	J
BaP	0.017	U	0.041	J
BbF	0.021	U	0.047	J
DahA	0.035	U	0.064	U
I123P	0.02	U	0.036	U
NAP	0.11	J	0.088	J
PCBs				
1232	0.0048	U	0.0085	U
1248	0.0026	U	0.0048	U
1254	0.004	U	0.0072	U
Metals				
Cr	31100	J	2200	J
Cr+6	1030		10.6	

COI	HRWC-12 04/24/08 0.0-1.0 ft[3] Primary		HRWC-12 04/24/08 2.0-3.0 ft Primary	
SVOCs				
BaA	9.4		19	
BaP	8.5		15	
BbF	11		16	
DahA	1.3		1.5	
I123P	4.6		5.8	
NAP	1.1		10	
PCBs				
1232	0.056		0.0058	U
1248	0.002	U	0.0032	U
1254	0.014	J	0.0048	U
Metals				
Cr	121	J	393	J
Cr+6	0.4	U	0.4	U

COI	HRWC-13 04/23/08 0.0-1.0 ft[3] Primary		HRWC-13 04/23/08 2.0-3.0 ft Primary	
SVOCs				
BaA	14		13	
BaP	12		9.9	
BbF	14		12	
DahA	2.5		1.3	
I123P	8		4.2	
NAP	2.4		3.9	
PCBs				
1232	1		0.32	
1248	0.0028	U	0.0031	U
1254	0.2		0.056	
Metals				
Cr	9590	J	471	J
Cr+6	15.2		13.7	

0 200 400 FEET

LEGEND

- PROPERTY BOUNDARY
- EXISTING FENCE
- EXISTING BUILDING/STRUCTURES
- FORMER BUILDING/STRUCTURES
- EXISTING GROUND SURFACE ELEVATION CONTOURS
- HRWC-03 — HACKENSACK RIVER SEDIMENT SAMPLE LOCATION

Constituent of Interest (COI)	Abbreviation	Units	Criterion[1]
Semivolatile Organics (SVOCs)			
Benzo(a)anthracene	BaA	mg/Kg	2
Benzo(a)pyrene	BaP	mg/Kg	0.2
Benzo(b)fluoranthene	BbF	mg/Kg	2
Dibenzo(a,h)anthracene	DahA	mg/Kg	0.2
Indeno(1,2,3-cd)pyrene	I123P	mg/Kg	2
Naphthalene	NAP	mg/Kg	17
Polychlorinated Biphenyls (Aroclors) (PCBs)			
Aroclor 1232	1232	mg/Kg	1
Aroclor 1248	1248	mg/Kg	1
Aroclor 1254	1254	mg/Kg	1
Metals			
Chromium[4]	Cr	mg/Kg	--
Chromium (Hexavalent)[4]	Cr+6	mg/Kg	20

1. Criteria are the NJDEP Non-Residential Direct Contact Soil Remediation Standards (online at www.nj.gov/dep/srp/regs/rs/rs_appendix1.pdf) unless noted otherwise.own in bold typeface.
2 . Nonpromulgated criteria for total (trivalent) and hexavalent chromium determined by chromium workgroup (www.state.nj.us/dep/srp/guidance). Criterion for residential exposure to trivalent chromium was used for total chromium.

Exceedances are shown in bold, shaded typeface. Data qualifiers are as follows:
J - Organic results. Result is an estimate. Quantitated between the detection limit and the reporting limit.
J - Inorganic results. Result is an estimated concentration. Quantitated below the reporting limit.
U - Not detected at the detection limit indicated.

REV #	DATE	DESCRIPTION	APPD
3			
2			
1			

REFERENCE:

NOTE:
SEDIMENTS WITHIN 50 FEET OF THE SHORELINE AND TO A DEPTH OF 3 FEET HAVE BEEN EXCAVATED AND EMPLACED IN THE SCCC AND DIAMOND CONSOLIDATION AREAS.

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

COOPERATING PARTIES GROUP

DRWN: SCC	DATE: 11/14/12
CHKD: RJH	DATE: 11/14/12
APPD: JSZ	DATE: 11/14/12
SCALE: AS SHOWN	

KEY ENVIRONMENTAL INCORPORATED

SITE CHARACTERIZATION SUMMARY REPORT
STANDARD CHLORINE CHEMICAL CO., INC. SITE
KEARNY, HUDSON COUNTY, NEW JERSEY

NEAR-SHORE HACKENSACK RIVER SEDIMENT – ANALYTICAL RESULTS (2008)

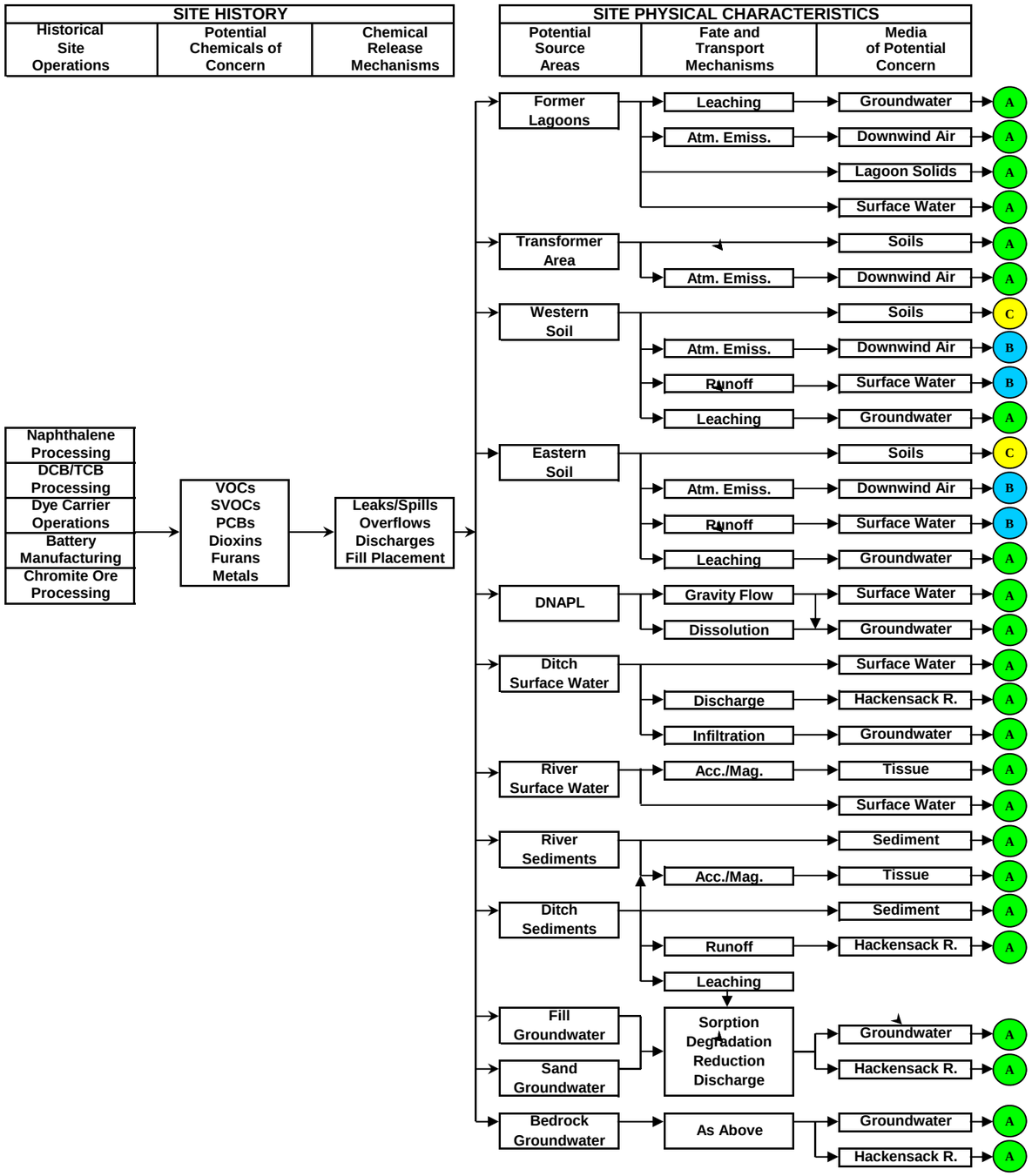
PROJECT NO: 2012-14

FIGURE 4-10

y:\00civil\kearny\site characterization summary report\figure 4-10 near-shore hackensack river sediment.dwg Last Saved By: Scomer 12/7/2012 11:59 AM Plotted By: Shelly Comer 12/7/2012 12:29 PM Scale: 1:1

FIGURE 5-1

PRELIMINARY CONCEPTUAL SITE MODEL
SCCC SITE - KEARNY, NEW JERSEY



RECEPTORS											
Potential Exposure Pathways	ONSITE HUMAN				OFFSITE HUMAN			BIOTA			
	On-site Workers	Occasional Visitors	Construction Workers	Utility Workers	Residential Receptors	Recreational Users	Sport Fisherman	Benthic Community	Fish	Aquatic Birds	Feeding Mammals
Scenario A - Pathways are Incomplete (Current Conditions)											
Ingestion											
Dermal											
Inhalation											
Scenario B - Pathways are Potentially Complete but Insignificant (Current Conditions)											
Ingestion											
Dermal											
Inhalation											
Scenario C - Pathways are Potentially Complete and Potentialy Significant (Future Conditions)											
Ingestion											
Dermal											
Inhalation											

Pathway is incomplete at present as a result of implementation of IRMs and IRA and is expected to remain so in the future.

All direct groundwater exposure pathways (no groundwater use).
All potential exposure pathways associated with the lagoons (capped).
Discharge of DNAPL to the south ditch or Hackensack River (barrier walls in place).
Discharge of all groundwater to the Hackensack River (barrier walls in place).
Direct contact with transformer area soils eliminated via removal.
Atmospheric emission of dust from transformer area eliminated via removal.
Potential for direct contact with surface water in the South Ditch eliminated via removal and new stormwater management system.
Discharge of surface water from the South Ditch (will be noncontact surface water, sediments removed).
All potential nongroundwater exposures associated with the south ditch (impacted sediment removed).
Direct contact with eastern area soils by outdoor site workers and visitors (cover placed).
Direct contact with Hackensack River surface water (does not consider other sources).
Accumulation and magnification of Hackensack River constituents in surface water (does not consider other sources).
Human and ecological receptor direct contact with Hackensack River sediments (sediments removedl).
Accumulation and magnification of Hackensack River constituents in sediments (does not consider other sources - river sediments removed).

Pathway may be complete after IRA implementation but is expected to be insignificant.

Atmospheric emission of volatiles or fugitive dust from non-remediated areas (monitoring data show no risk).
Runoff of western area soil to receiving surface waters (western soils relatively unimpacted).
Runoff of eastern area soil (stormwater management and revegetation in place).
Under a future disturbance scenario, residents, recreators, onsite worker, visitors, and fishermen could experience low risk.

Pathway is complete after IRA implementation and may be significant for humans and ecological receptors.

Potential for direct contact with western area soils by utility workers and construction workers exists under a future scenario.
Potential for direct contact with eastern area soils by utility workers and construction workers exists under a future scenario.
If land disturbance occurs without erosion and sediment control, ecological receptors could be at risk.

TABLES

Table 2-1
SITE CHRONOLOGY
1983-1989

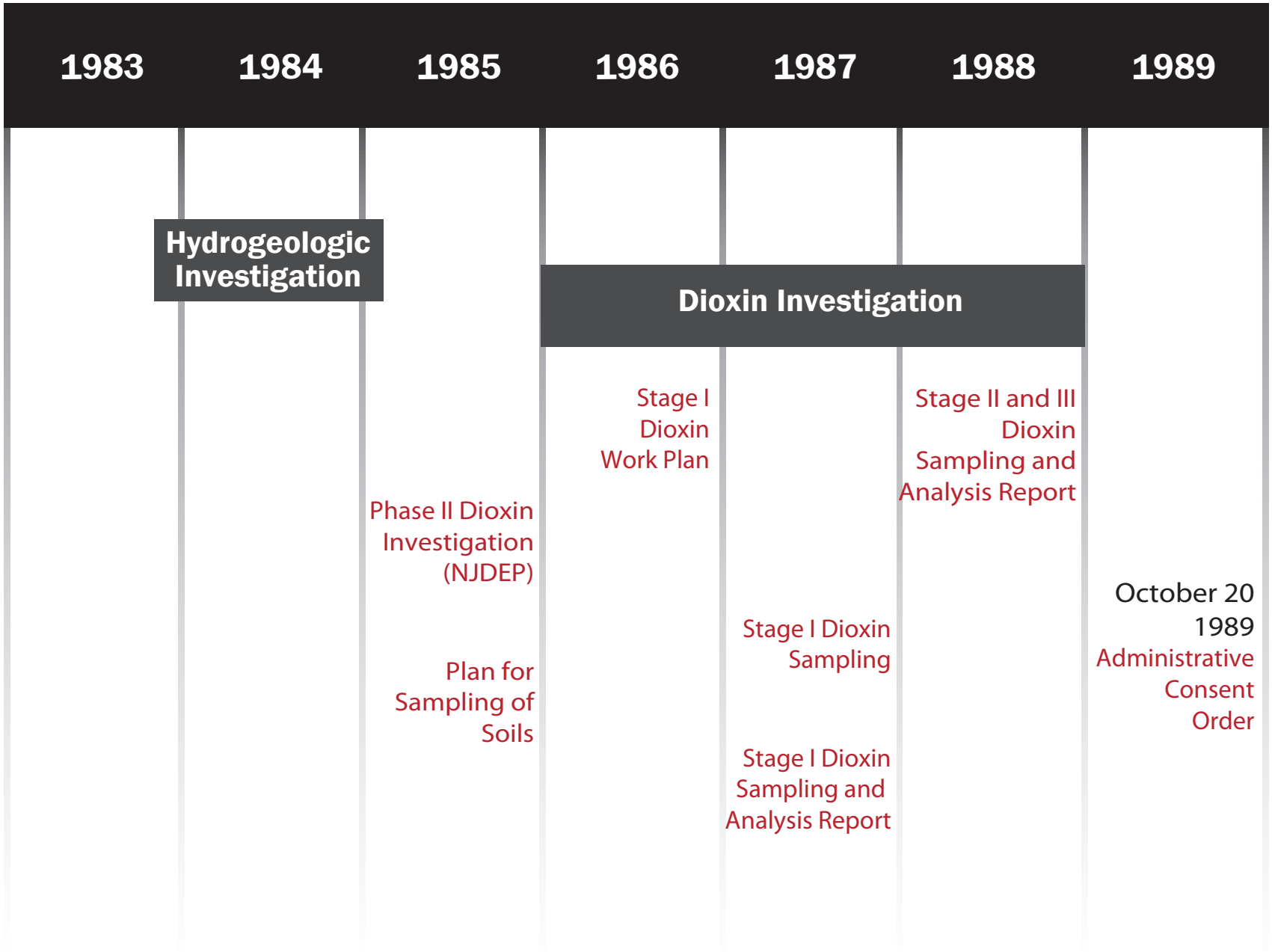


Table 2-1
SITE CHRONOLOGY
1989-1997

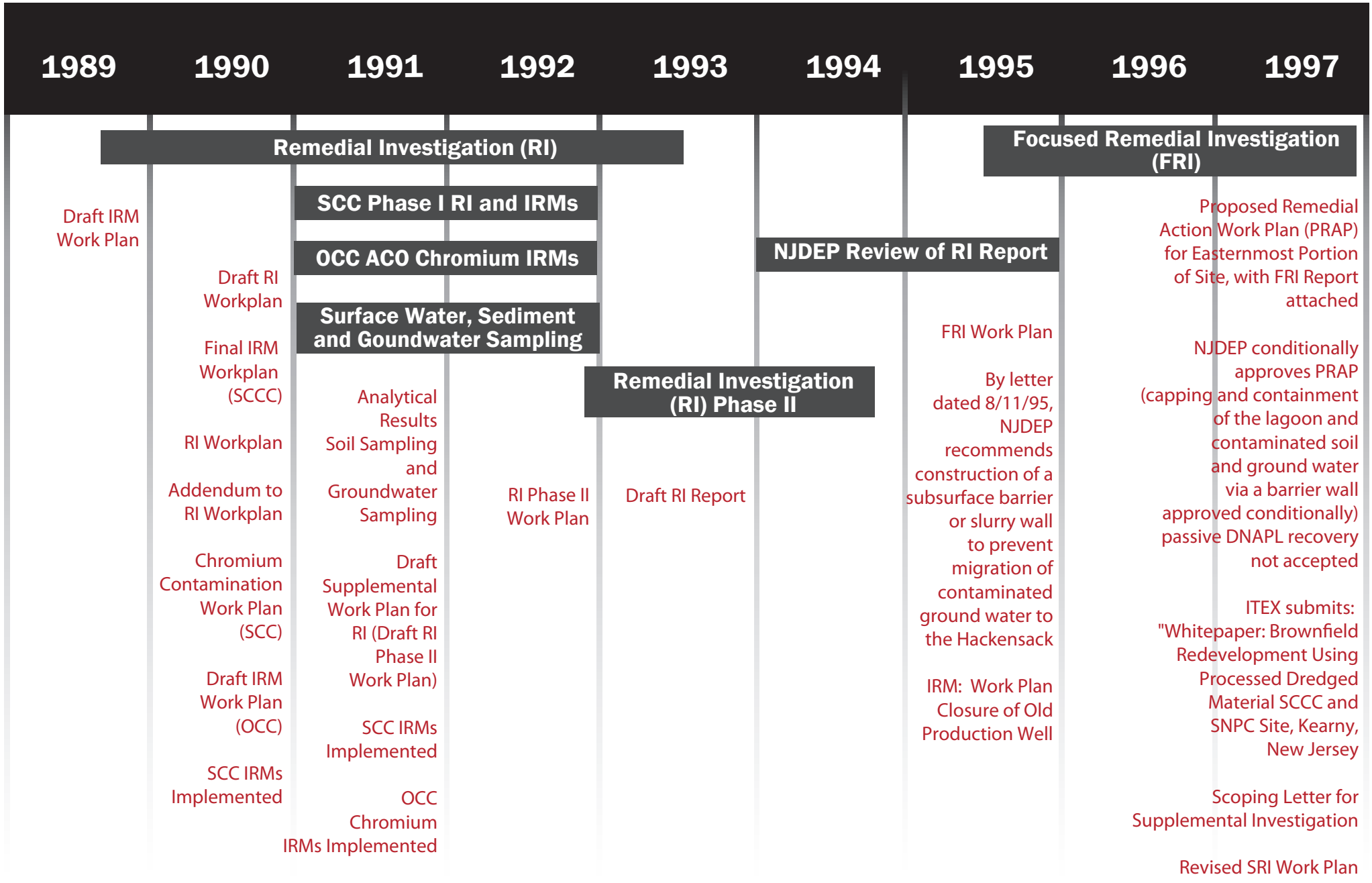


Table 2-1
SITE CHRONOLOGY
1998-2003

1998	1999	2000	2001	2002	2003
Supplemental Remedial Investigation (SRI)					
Old production well sampled and closed	Additional SRI Sampling Supplemental RI Report Supplemental RI Report conditionally approved. Acquisition of additional field data must not delay preparation of the RASR and RAWP Conceptual Remedial Action Work Plan NJDEP issues comments on Conceptual RAWP - references need for "installation of the required hydraulic barrier along the perimeter of the site"..."to prevent further releases of DNAPL to the Hackensack River and sediments	Additional Soil and Sediment Sampling and Analysis Baseline Ecological Evaluation Work Plan for Characterization of Containerized Materials Containerized Materials inventoried, repacked, characterized and placed in secure onsite storage DGW IRM: Influent and effluent lnes from sanitary holding tanks sealed and NJPDES DSW permit inactivated Remedial Action Work Plan (November 2000 RAW) Northern Outfall IRM Work Plan Onyx Environmental Services provides notification that there are no available disposal options in the United States for organic-contaminated asbestos waste	Additional sampling containerized materials Sediment Sampling Hackensack River Revised RAWP design and implementation schedule Addendum to November 2000 RAWP (May 2001 RAWP) RI Work Plan for SCC Site (OCC)	Additional surface water and sediment sampling (USEPA)	Sampling Report (USEPA) ASTDR Public Health Assessment Initiated Draft IRM Work Plan (May IRM WP) Revised IRM Work Plan (July IRM WP) Peninsula Restoration Group formed

Table 2-1
SITE CHRONOLOGY
2003-2005

2003	2004	2005
ATSDR Public Health Assessment	**Peninsula Restoration Group Activities, Submissions**	
	Interim Response Action Workplan	Asbestos Removal from Non-Process Buildings
	Asbestos/Lead Paint Survey	RCRA Characterization of Demolition Debris
	Wetlands Delineation	Groundwater Model
	Phase I Demolition Work Plan	
	Pre-Design Investigation Workplan	
	Aerial Topographic Survey	
	Solidification Treatability Study Workplan	

Table 2-1
SITE CHRONOLOGY
2006-2009

2006	2007	2008	2009
REGULATORY ACTIVITIES			
NJDEP Comments 2004 IRAW	Site Listed on NPL	IRAW Approval	
NJDEP/EPA Comments AOC Request	NJDEP Comments 2006 IRAW	Waste Classification Letter Received	
PRG ACTIVITIES			
Revised Draft IRAW	IRAW Addendum (Response to NJDEP Comments)	Draft Phase II Supplemental RI Work Plan	AOC Policy Submittal (Like vs. Like)
AOC Policy Request		Containerized Material SAP	Target Materials Waste Classification Forms
Vault Discovery and SAP		IRAW Pre-Design Sampling/Analysis	Containerized Material Waste Classification Forms
Vault Sampling/Analysis		Groundwater Treatability Study	
Vault Waste Classification Request		2nd Vault Waste Class. Request	
AOC Policy Comment Response		Removal/Disposal of Vault Contents	
		Eng. Eval./Cost Analysis Submitted	
		Final IRAW/Air Mon. Plan Submitted	
		Cont. Material Sampling/Analysis Final Phase II Suppl. Work Plan	
		South Ditch Probing Initiated	

Table 2-1
SITE CHRONOLOGY
2010-2012

2010

First Quarter
Response to IRAW Addendum Comments
Response to Like vs. Like Comments
Response to Phase I Cultural Survey Comments
Track 1 (Bldg 16, 19, and 20) Sampling/Analysis

Second Quarter
IRA Design Completed
Construction Procurement Completed
Revised IRAW Addendum Submitted/Approved
Revised IRAW Air Monitoring Plan Submitted
Well Abandonment Plan Submitted/Approved
Building 16, 19, 20 WC Requests Submitted
Cathodic Protection Plan Submitted
Track 2 (Bldg 15, 17, 18, 21) Sampling/Analysis
Track 1 & Track 2 RA Work Plans Submitted
Phase I Archeological Survey on Waterfront
HCTS Footprint Surcharge Placed

Third Quarter
Preconstruction Permitting Completed
Track 1 & Track 2 RA Work Plan Comment Response
Track 1 Demolition Procurement Completed
Construction QA Plan Completed
Track 1 & Track 2 Building Dioxin/Furan Analysis
Cathodic Protection Plan Comment Response
Construction Contractor Mobilization
HCTS Building Embankment Constructed

Fourth Quarter
Steel Sheet Pile Wall Installation Initiated
HCTS Building Foundation Construction
PSEG Gas Line Decommissioning
Building Sealing (Removal Action) Completed
Lagoon Solidification Study Completed
Outlet Works Constructed
Track 1 Building Demolition
TCTS Placed in Operation
Revised Air Monitoring Plan Submitted

2011

First Quarter
River Turbidity Curtain Installed
HCTS Building Shell Constructed
Transformer Pad Removal
HC Well Installation Completed
Consolidation Area Berm Constructed
Steel Sheet Pile Wall Construction
Western Lagoon Geogrid Installation
Track 1 Building Demolition Completed
Septic Tank Design Modification Letter
Wetland Mitigation Design Modification Letter
Lagoon Stabilization Design Modification Letter
Initial Receptor Evaluation Form Submitted

Second Quarter
Offsite Smelting of Track 1 Building Scrap
Two Phases of Transformer Pad Soil Removal
Steel Sheet Pile Wall Waler Installation
Eastern Lagoon Stabilization and Geogrid Placement
Track 1 Building Demolition Report
Track 3 RA Work Plan Submitted

Third Quarter
S. Ditch Solidification/Excavation/Consolidation
S. Ditch Stormwater Piping/Catch Basins Placed
GW Conveyance Piping and Conduit Installed
River Sediment Excavation/Consolidation
Additional Transformer Pad Soil Removal
Slurry Wall Installation Complete

Fourth Quarter
Capillary Break Installation
Well Pump and Vault Installation
HCTS Treatment Plant Completed
TCTS Treatment Plant Shutdown
Hydrostatic Testing of Stormwater System
Final Consolidation Area Grading and Cover
In-place Closure of Septic Tanks
HC Monitoring Piezometer Installation
Final Backfill/Closure of Transformer Pad
Mulching/Seeding & Wetland Restoration
Slurry Wall Crossing Construction

2012

First Quarter
Anode Well Installation
Track 2 Building Demolition Complete
Additional Capillary Break in Process Area
Track 2 Demolition Report Submitted

Second Quarter
HCTS Shakedown/Startup
Final Seeding Completed
TCTS Residual Disposal
Track 3 Building Demolition
Cathodic Protection Startup
Track 2 and 3 Building Demolition Reports

Third Quarter
Wetland Mitigation Construction Completion Report
HCTS Operation and Maintenance
Hydraulic Control Monitoring
DNAPL Recovery and Disposal

TABLE 4-1

ANALYTICAL RESULTS
SURFACE SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent	Units	Criterion[1]	SC-SS-01 0.0-0.5 ft 04/15/09		SC-SS-02 0.0-0.5 ft 04/15/09		SC-SS-03 0.0-0.5 ft 04/15/09		SC-SS-04 0.0-0.5 ft 04/15/09		SC-SS-05 0.0-0.5 ft 04/15/09		SC-SS-06 0.0-0.5 ft 04/15/09		SC-SS-07 0.0-0.5 ft 04/15/09		SC-SS-08 0.0-0.5 ft 03/31/09		SC-SS-09 0.0-0.5 ft 03/30/09		SC-SS-10 0.0-0.5 ft 03/30/09		SC-SS-11 0.0-0.5 ft 03/30/09	
Semivolatile Organic Compounds																								
1,1'-Biphenyl	mg/Kg	34000	0.097	U	0.4	J	0.021	U	0.17	J	0.058	J	0.099	J	0.056	U	0.056	J	0.033	U	0.046	J	0.09	U
2,2'-oxybis(1-chloropropane)	mg/Kg	--	0.093	U	0.19	U	0.02	U	0.094	U	0.035	U	0.087	U	0.054	U	0.046	U	0.032	U	0.018	U	0.086	U
2,4,5-Trichlorophenol	mg/Kg	68000	0.052	U	0.11	U	0.011	U	0.053	U	0.02	U	0.049	U	0.03	U	0.026	U	0.018	U	0.01	U	0.049	U
2,4,6-Trichlorophenol	mg/Kg	74	0.11	U	0.21	U	0.023	U	0.11	U	0.04	U	0.098	U	0.061	U	0.052	U	0.036	U	0.021	U	0.098	U
2,4-Dichlorophenol	mg/Kg	2100	0.086	U	0.17	U	0.019	U	0.088	U	0.032	U	0.08	U	0.05	U	0.043	U	0.03	U	0.017	U	0.08	U
2,4-Dimethylphenol	mg/Kg	14000	0.089	U	0.77	J	0.019	U	0.2	J	0.053	J	0.083	U	0.052	U	0.044	U	0.031	U	0.018	U	0.51	J
2,4-Dinitrophenol	mg/Kg	1400	0.68	U	1.4	U	0.15	U	0.69	U	0.26	U	0.64	U	0.4	U	0.34	U	0.23	U	0.13	U	0.63	U
2,4-Dinitrotoluene	mg/Kg	3	0.099	U	0.2	U	0.021	U	0.1	U	0.037	U	0.093	U	0.058	U	0.049	U	0.034	U	0.02	U	0.092	U
2,6-Dinitrotoluene	mg/Kg	3	0.11	U	0.22	U	0.023	U	0.11	U	0.041	U	0.1	U	0.063	U	0.054	U	0.037	U	0.021	U	0.1	U
2-Chloronaphthalene	mg/Kg	--	0.057	U	0.11	U	0.012	U	0.058	U	0.022	U	0.053	U	0.033	U	0.028	U	0.02	U	0.011	U	0.053	U
2-Chlorophenol	mg/Kg	2200	0.065	U	0.13	U	0.014	U	0.066	U	0.025	U	0.061	U	0.038	U	0.032	U	0.022	U	0.013	U	0.061	U
2-Methylnaphthalene	mg/Kg	2400	0.2	J	1.3		0.047	J	1.7		0.2		0.24	J	0.14	J	0.13	J	0.055	J	0.14		0.17	J
2-Methylphenol	mg/Kg	3400	0.078	U	0.16	U	0.017	U	0.08	U	0.03	U	0.073	U	0.046	U	0.039	U	0.027	U	0.015	U	1.3	J
2-Nitroaniline	mg/Kg	23000	0.13	U	0.26	U	0.028	U	0.13	U	0.049	U	0.12	U	0.076	U	0.065	U	0.045	U	0.026	U	0.12	U
2-Nitrophenol	mg/Kg	--	0.081	U	0.16	U	0.017	U	0.082	U	0.031	U	0.075	U	0.047	U	0.04	U	0.028	U	0.016	U	0.075	U
3,3-Dichlorobenzidine	mg/Kg	4	0.4	U	0.8	U	0.086	U	0.41	U	0.15	U	0.37	U	0.23	U	0.2	U	0.14	U	0.079	U	0.37	U
3-Nitroaniline	mg/Kg	--	0.069	U	0.14	U	0.015	U	0.071	U	0.026	U	0.065	U	0.04	U	0.034	U	0.024	U	0.014	U	0.065	U
4,6-Dinitro-2-methylphenol	mg/Kg	68	2	U	4.1	U	0.44	U	2.1	U	0.77	U	1.9	U	1.2	U	1	U	0.7	U	0.4	U	1.9	U
4-Bromophenylphenyl ether	mg/Kg	--	0.09	U	0.18	U	0.019	U	0.092	U	0.034	U	0.084	U	0.052	U	0.045	U	0.031	U	0.018	U	0.084	U
4-Chloro-3-methylphenol	mg/Kg	--	0.063	U	0.13	U	0.014	U	0.064	U	0.024	U	0.059	U	0.037	U	0.031	U	0.022	U	0.013	U	0.059	U
4-Chloroaniline	mg/Kg	--	0.066	U	0.13	U	0.014	U	0.067	U	0.025	U	0.061	U	0.038	U	0.033	U	0.023	U	0.042	J	0.061	U
4-Chlorophenyl phenyl ether	mg/Kg	--	0.094	U	0.19	U	0.02	U	0.096	U	0.035	U	0.087	U	0.055	U	0.047	U	0.032	U	0.019	U	0.087	U
4-Methylphenol	mg/Kg	340	0.093	U	0.19	U	0.02	U	0.34	J	0.057	J	0.087	U	0.054	U	0.046	U	0.37	J	0.018	U	1.7	J
4-Nitroaniline	mg/Kg	--	0.1	U	0.21	U	0.022	U	0.11	U	0.039	U	0.097	U	0.06	U	0.052	U	0.036	U	0.021	U	0.097	U
4-Nitrophenol	mg/Kg	--	1.2	U	2.5	U	0.27	U	1.3	U	0.47	U	1.2	U	0.73	U	0.62	U	0.43	U	0.25	U	1.2	U
Acenaphthene	mg/Kg	37000	0.85		0.84	J	0.045	J	3		0.38		0.064	U	0.12	J	0.082	J	0.2		0.15		0.47	
Acenaphthylene	mg/Kg	300000	0.14	J	5.4		0.043	J	0.26	J	0.088	J	0.13	J	0.13	J	0.47		0.17		0.25		0.33	J
Acetophenone	mg/Kg	5	0.098	U	0.2	U	0.021	U	0.1	U	0.037	U	0.091	U	0.057	U	0.049	U	0.034	U	0.026	J	0.091	U
Anthracene	mg/Kg	30000	2		3.1		0.25		2.9		0.63		0.39	J	0.2	J	0.52		0.73		0.56		0.83	
Atrazine	mg/Kg	2400	0.1	U	0.2	U	0.022	U	0.1	U	0.038	U	0.094	U	0.058	U	0.05	U	0.035	U	0.02	U	0.094	U
Benzaldehyde	mg/Kg	68000	0.055	U	0.11	U	0.012	U	0.056	U	0.021	U	0.052	U	0.032	U	0.34	J	0.019	U	0.16	J	0.68	J
Benzo(a)anthracene	mg/Kg	2	**14**		**4.5**		0.17		**22**		**3.4**		0.063	U	0.95		2		2		1.1		**4.7**	
Benzo(a)pyrene	mg/Kg	0.2	**22**		**5.2**		0.17		**37**		**5**		**0.81**		**0.95**		**2**		**1.5**		**1**		**7.5**	
Benzo(b)fluoranthene	mg/Kg	2	**27**		**10**		0.42		**47**		**7.6**		**4**		**2.8**		**2.6**		1.7		1.2		**7.6**	
Benzo(ghi)perylene	mg/Kg	30000	17		6.4		0.21		34		4.7		1.6		1.3		1.4		0.92		0.71		6.1	
Benzo(k)fluoranthene	mg/Kg	23	0.088	U	0.18	U	0.019	U	0.09	U	0.033	U	0.082	U	0.051	U	1.1		0.71		0.44		2.5	
Bis(2-chloroethoxy)methane	mg/Kg	--	0.085	U	0.17	U	0.018	U	0.087	U	0.032	U	0.079	U	0.05	U	0.042	U	0.029	U	0.017	U	0.079	U
Bis(2-chloroethyl)ether	mg/Kg	2	0.037	U	0.075	U	0.008	U	0.038	U	0.014	U	0.035	U	0.022	U	0.018	U	0.013	U	0.0074	U	0.035	U
Bis(2-ethylhexyl)phthalate	mg/Kg	140	0.18	U	0.36	U	0.26	J	0.18	U	0.068	U	1.6	J	0.91	J	0.17	J	1		0.86		0.63	J
Butyl benzyl phthalate	mg/Kg	14000	0.15	U	0.3	U	0.032	U	0.15	U	0.056	U	0.14	U	0.086	U	0.074	U	0.051	U	0.037	J	0.14	U
Caprolactam	mg/Kg	340000	0.28	U	0.56	U	0.06	U	0.28	U	0.1	U	0.26	U	0.16	U	0.14	U	0.095	U	0.055	U	0.26	U
Carbazole	mg/Kg	96	1.5		0.92		0.097		1.6		0.29		0.19	J	0.084	J	0.17	J	0.064	J	0.19		0.55	
Chrysene	mg/Kg	230	15		3.8		0.16		19		3.1		0.069	U	0.99		1.9		1.8		1.1		4.9	
Dibenzo(a,h)anthracene	mg/Kg	0.2	**4.8**		**1.3**		0.029	J	**8.8**		**1.2**		**0.37**	J	**0.29**		**0.36**		**0.27**		0.19		**1.5**	
Dibenzofuran	mg/Kg	--	0.26	J	1.2	J	0.064	J	1.2	J	0.22	J	0.25	J	0.11	J	0.16	J	0.075	J	0.17	J	0.24	J
Diethyl phthalate	mg/Kg	550000	0.12	U	0.24	U	0.026	U	0.12	U	0.045	U	0.11	U	0.077	J	0.06	U	0.041	U	0.026	J	0.11	U
Dimethyl phthalate	mg/Kg	--	0.071	U	0.14	U	0.015	U	0.073	U	0.027	U	0.067	U	0.042	U	0.035	U	0.025	U	0.014	U	0.066	U
Di-n-butyl phthalate	mg/Kg	68000	0.12	U	0.24	U	0.025	U	0.12	U	0.045	U	0.11	U	0.069	U	0.059	U	0.041	U	0.055	J	0.11	U
Di-n-octyl phthalate	mg/Kg	27000	0.055	U	0.11	U	0.012	U	0.056	U	0.021	U	0.051	U	0.032	U	0.027	U	0.019	U	0.017	J	0.051	U
Fluoranthene	mg/Kg	24000	17		5.7		0.36		22		4.2		2.1		1.3		3.3		3.8		2.4		6.4	
Fluorene	mg/Kg	24000	0.47		0.6	J	0.041	J	1.1		0.19		0.06	U	0.051	J	0.12	J	0.32		0.27		0.38	J

TABLE 4-1

ANALYTICAL RESULTS
SURFACE SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent	Units	Criterion[1]	SC-SS-01 0.0-0.5 ft 04/15/09		SC-SS-02 0.0-0.5 ft 04/15/09		SC-SS-03 0.0-0.5 ft 04/15/09		SC-SS-04 0.0-0.5 ft 04/15/09		SC-SS-05 0.0-0.5 ft 04/15/09		SC-SS-06 0.0-0.5 ft 04/15/09		SC-SS-07 0.0-0.5 ft 04/15/09		SC-SS-08 0.0-0.5 ft 03/31/09		SC-SS-09 0.0-0.5 ft 03/30/09		SC-SS-10 0.0-0.5 ft 03/30/09		SC-SS-11 0.0-0.5 ft 03/30/09	
Semivolatile Organic Compounds (Continued)																								
Hexachlorobenzene	mg/Kg	1	0.08	U	0.16	U	0.017	U	0.95		0.03	U	0.96		**1.4**		0.04	U	0.028	U	0.016	U	0.075	U
Hexachlorobutadiene	mg/Kg	25	0.09	U	0.18	U	0.019	U	0.092	U	0.034	U	0.084	U	0.052	U	0.045	U	0.031	U	0.018	U	0.084	U
Hexachlorocyclopentadiene	mg/Kg	110	0.081	U	0.16	U	0.017	U	0.082	U	0.03	U	0.075	U	0.047	U	0.04	U	0.028	U	0.016	U	0.075	U
Hexachloroethane	mg/Kg	140	0.072	U	0.14	U	0.015	U	0.073	U	0.027	U	0.067	U	0.042	U	0.036	U	0.025	U	0.014	U	0.067	U
Indeno(1,2,3-cd)pyrene	mg/Kg	2	**15**		**6.6**		0.31		**27**		**3.9**		1.9		1.4		1.2		0.75		0.55		**4.9**	
Isophorone	mg/Kg	2000	0.083	U	0.17	U	0.018	U	0.084	U	0.031	U	0.077	U	0.048	U	0.041	U	0.028	U	0.016	U	0.077	U
Naphthalene	mg/Kg	17	1.4		3.4		0.11		10		1.1		16		6.3		0.5		0.13	J	0.41		0.67	
Nitrobenzene	mg/Kg	340	0.11	U	0.21	U	0.023	U	0.11	U	0.04	U	0.1	U	0.062	U	0.053	U	0.037	U	0.021	U	0.099	U
N-Nitrosodiphenylamine	mg/Kg	390	0.087	U	0.17	U	0.019	U	0.089	U	0.033	U	0.081	U	0.051	U	0.043	U	0.03	U	0.017	U	0.081	U
N-Nitrosodipropylamine	mg/Kg	0.3	0.12	U	0.24	U	0.025	U	0.12	U	0.044	U	0.11	U	0.068	U	0.058	U	0.041	U	0.023	U	0.11	U
Pentachlorophenol	mg/Kg	10	0.37	U	0.74	U	0.079	U	0.38	U	0.14	U	0.34	U	0.21	U	0.81	J	0.13	U	0.073	U	0.34	U
Phenanthrene	mg/Kg	300000	6.9		4.1		0.25		12		2		3		0.77		1.2		2.7		1.5		2.8	
Phenol	mg/Kg	210000	0.084	U	0.17	U	0.018	U	0.086	U	0.032	U	0.079	U	0.049	U	0.042	U	0.054	J	0.017	U	8.6	
Pyrene	mg/Kg	18000	15		4.2		0.29		26		4.3		1.9		1.2		2.6		3.7		1.8		5.3	
Polychlorinated Dioxins and Furans																								
1,2,3,4,6,7,8-HpCDF	ug/Kg	--	--		--		--		--		--		--		--		0.92		0.03	Q	0.057		7.9	
1,2,3,4,6,7,8-HpCDD	ug/Kg	--	--		--		--		--		--		--		--		0.1		0.032		0.012		0.25	
1,2,3,7,8,9-HxCDF	ug/Kg	--	--		--		--		--		--		--		--		0.00054	QJ	0.0055	U	0.0063	U	0.0035	QJ
1,2,3,4,7,8,9-HpCDF	ug/Kg	--	--		--		--		--		--		--		--		0.023		0.00096	QJ	0.0017	J	0.29	
1,2,3,4,7,8-HxCDF	ug/Kg	--	--		--		--		--		--		--		--		0.24		0.0077		0.015		2.5	Q
1,2,3,4,7,8-HxCDD	ug/Kg	--	--		--		--		--		--		--		--		0.002	J	0.0002	QJ	0.0063	U	0.0053	J
1,2,3,6,7,8-HxCDF	ug/Kg	--	--		--		--		--		--		--		--		0.051	Q	0.0019	QJ	0.003	QJ	0.42	Q
1,2,3,6,7,8-HxCDD	ug/Kg	--	--		--		--		--		--		--		--		0.0055	J	0.0011	J	0.00073	QJ	0.022	
1,2,3,7,8,9-HxCDD	ug/Kg	--	--		--		--		--		--		--		--		0.0039	QJ	0.00071	J	0.00079	J	0.01	J
1,2,3,7,8-PeCDF	ug/Kg	--	--		--		--		--		--		--		--		0.0083		0.003	J	0.00063	QJ	0.037	
1,2,3,7,8-PeCDD	ug/Kg	--	--		--		--		--		--		--		--		0.0039	QJ	0.0055	U	0.0063	U	0.0064	QJ
2,3,4,6,7,8-HxCDF	ug/Kg	--	--		--		--		--		--		--		--		0.015		0.0011	J	0.00099	QJ	0.12	
2,3,4,7,8-TCDD	ug/Kg	--	--		--		--		--		--		--		--		0.023	Q	0.0032	QJ	0.0013	QJ	0.2	Q
2,3,7,8-TCDF	ug/Kg	--	--		--		--		--		--		--		--		0.023	Q	0.0092	Q	0.0013	Q	0.051	Q
2,3,7,8-TCDD	ug/Kg	--	--		--		--		--		--		--		--		0.00099	QJ	0.0011	U	0.0013	U	0.034	
OCDF	ug/Kg	--	--		--		--		--		--		--		--		1.6		0.039		0.08		11	
OCDD	ug/Kg	--	--		--		--		--		--		--		--		0.98	B	0.33	B	0.12	B	5.7	B
Total HpCDD	ug/Kg	--	--		--		--		--		--		--		--		0.22		0.062		0.027		0.55	
Total HpCDF	ug/Kg	--	--		--		--		--		--		--		--		1		0.04	Q	0.066		9	
Total HxCDD	ug/Kg	--	--		--		--		--		--		--		--		0.063	Q	0.0087	JQ	0.0074	JQ	0.16	Q
Total HxCDF	ug/Kg	--	--		--		--		--		--		--		--		0.61	Q	0.024	Q	0.04	Q	5.8	Q
Total PeCDD	ug/Kg	--	--		--		--		--		--		--		--		0.05	Q	0.00079	QJ	0.001	QJ	0.15	Q
Total PeCDF	ug/Kg	--	--		--		--		--		--		--		--		0.37	Q	0.022	JQ	0.02	QJ	2.5	Q
Total TCDD	ug/Kg	--	--		--		--		--		--		--		--		0.035	Q	0.00051	QJ	0.0019	Q	0.15	Q
Total TCDF	ug/Kg	--	--		--		--		--		--		--		--		0.24	Q	0.03	Q	0.013	Q	1.4	Q
Polychlorinated Dioxins/Furans																								
1,2,3,4,6,7,8-HpCDD	0.01	--	--		--		--		--		--		--		--		9.2E-03		--		5.7E-04		7.9E-02	
1,2,3,4,6,7,8-HpCDF	0.01	--	--		--		--		--		--		--		--		1.0E-03		3.2E-04		1.2E-04		2.5E-03	
1,2,3,4,7,8,9-HpCDF	0.01	--	--		--		--		--		--		--		--		--		--		--		--	
1,2,3,4,7,8-HxCDD	0.10	--	--		--		--		--		--		--		--		2.3E-03		--		1.7E-04		2.9E-02	
1,2,3,4,7,8-HxCDF	0.10	--	--		--		--		--		--		--		--		2.4E-02		7.7E-04		1.5E-03		--	
1,2,3,6,7,8-HxCDD	0.10	--	--		--		--		--		--		--		--		2.0E-04		--		--		5.3E-04	
1,2,3,6,7,8-HxCDF	0.10	--	--		--		--		--		--		--		--		--		--		--		--	
1,2,3,7,8,9-HxCDD	0.10	--	--		--		--		--		--		--		--		5.5E-04		1.1E-04		--		2.2E-03	
1,2,3,7,8,9-HxCDF	0.10	--	--		--		--		--		--		--		--		--		7.1E-05		7.9E-05		1.0E-03	
1,2,3,7,8-PCDD	1.00	--	--		--		--		--		--		--		--		8.3E-03		3.0E-03		--		3.7E-02	
1,2,3,7,8-PCDF	0.05	--	--		--		--		--		--		--		--		--		--		--		--	
2,3,4,6,7,8-HxCDF	0.10	--	--		--		--		--		--		--		--		1.5E-03		1.1E-04		--		1.2E-02	
2,3,4,7,8-PCDF	0.50	--	--		--		--		--		--		--		--		--		--		--		--	
2,3,7,8-TCDD	1.00	--	--		--		--		--		--		--		--		--		--		--		--	
2,3,7,8-TCDF	0.10	--	--		--		--		--		--		--		--		--		--		--		3.4E-03	
OCDD	0.0001	--	--		--		--		--		--		--		--		1.6E-04		3.9E-06		8.0E-06		1.1E-03	
OCDF	0.0001	--	--		--		--		--		--		--		--		9.8E-05		3.3E-05		1.2E-05		5.7E-04	
Total 2,3,7,8-TCDD Equivalents[3]	ug/Kg	1	--		--		--		--		--		--		--		4.73E-02		4.42E-03		2.46E-03		1.68E-01	

TABLE 4-1

ANALYTICAL RESULTS
SURFACE SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent	Units	Criterion[1]	SC-SS-01 0.0-0.5 ft 04/15/09		SC-SS-02 0.0-0.5 ft 04/15/09		SC-SS-03 0.0-0.5 ft 04/15/09		SC-SS-04 0.0-0.5 ft 04/15/09		SC-SS-05 0.0-0.5 ft 04/15/09		SC-SS-06 0.0-0.5 ft 04/15/09		SC-SS-07 0.0-0.5 ft 04/15/09		SC-SS-08 0.0-0.5 ft 03/31/09		SC-SS-09 0.0-0.5 ft 03/30/09		SC-SS-10 0.0-0.5 ft 03/30/09		SC-SS-11 0.0-0.5 ft 03/30/09	
Polychlorinated Biphenyls																								
Aroclor 1016	mg/Kg	1	0.0031	U	0.0032	U	0.0034	U	0.0032	U	0.003	U	0.003	U	0.0031	U	0.0039	U	0.0027	U	0.0031	U	0.0074	U
Aroclor 1221	mg/Kg	1	0.004	U	0.0041	U	0.0043	U	0.0041	U	0.0038	U	0.0038	U	0.0039	U	0.005	U	0.0035	U	0.004	U	0.0095	U
Aroclor 1232	mg/Kg	1	0.0036	U	0.0036	U	0.0039	U	0.0037	U	0.0034	U	0.0034	U	0.0035	U	0.0045	U	0.0031	U	0.0035	U	0.0085	U
Aroclor 1242	mg/Kg	1	0.0034	U	0.0035	U	0.0037	U	0.0035	U	0.0033	U	0.0032	U	0.0033	U	0.0043	U	0.071		0.08		0.28	
Aroclor 1248	mg/Kg	1	0.31		**1.1**		0.1		**2.5**		0.0019	U	**1.1**		0.0019	U	0.0025	U	0.0017	U	0.002	U	0.0047	U
Aroclor 1254	mg/Kg	1	0.13		0.44		0.042	PG	1		0.068		0.32	PG	0.22	PG	0.13		0.067		0.16		0.3	
Aroclor 1260	mg/Kg	1	0.003	U	0.003	U	0.0032	U	0.0031	U	0.0028	U	0.0028	U	0.0029	U	0.15		0.037		0.1		0.2	
Aroclor 1262	mg/Kg	1	0.0046	U	0.0047	U	0.005	U	0.0047	U	0.0044	U	0.0043	U	0.0045	U	0.0058	U	0.004	U	0.0045	U	0.011	U
Aroclor 1268	mg/Kg	1	0.041	PG	0.17		0.0029	U	0.0028	U	0.0026	U	0.46		0.45		0.0034	U	0.0023	U	0.0027	U	0.0064	U
Miscellaneous																								
Percent Solids		--	78.7		78.4		73.1		76.1		83.3		83.1		81.2		63.4		91.4		79.6		33.5	

Notes:

1. Criteria are the NJDEP Non-Residential Direct Contact Soil Remediation Standards (online at www.nj.gov/dep/srp/regs/rs/rs_appendix1.pdf) unless noted otherwise.
2. Exceedances are shown in bold, shaded typeface. Data qualifiers are as follows:
   U - Not detected at the reporting limit indicated.
   B - Analyte detected in associated method blank
   J - Result is an estimate. Quantitated between the detection limit and the reporting limit.
   Q - One or more quality control criteria for identification not attained. Value is an Estimated Maximum Possible Concentration.

TABLE 4-2

ANALYTICAL RESULTS
CHROMIUM BORINGS [1]
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent [1]	Units	Criterion[2]	CR-8/CR-8R 03/30/09 06/11/09 0.0-0.5 0.0-0.5		CR-8/CR-8R 03/30/09 06/11/09 6.5-7.0 6.3-6.8		CR-8/CR-8R 03/30/09 06/11/09 9.0-9.5 8.8-9.3		CR-9/CR-9R 03/30/09 06/11/09 0.0-0.5 2.3-2.8		CR-9/9R 03/30/09 06/11/09 5.0-5.5 7.3-7.8		CR-9/9R 03/30/09 06/11/09 8.0-9.5 10.8-11.3		CR-10/10R 03/30/09 06/11/09 0.0-0.5 1.5-2.0		CR-10/10R 03/30/09 06/11/09 2.5-3.0 4.0-4.5		CR-10/10R 03/30/09 06/11/09 9.0-9.5 10.5-11.0		CR-11/11R 03/30/09 06/11/09 0.0-0.5 4.5-5.0		CR-11/11R 03/30/09 06/11/09 1.5-2.0 6.0-6.5		CR-11/11R 03/31/09 06/11/09 4.5-5.0 9.0-9.5	
Chromium	mg/kg	120000	214		497		1320		153		57.2		2230		1410		7980		1100		38.1		424		488	
Chromium (Hexavalent)	mg/kg	20	2.8	U	2.5	U	6.4	U	2.3	U	2.4	U	5.3	U	**495**		**238**		5.2	U	2.4	U	3.9	U	9	U
Hydronium Ion (pH)	SU	--	7.35		8.39		6.39		7.81		7.96		6.18		9.09		9.22		8.03		7.76		7.25		5.11	
Oxidation Reduction Potential	mV	--	510		395		352		408		304		272		291		298		265		235		120		298	

Constituent	Units	Criterion[2]	CR-12/12R 03/31/09 -- 0.0-0.5 --		CR-12/12R 04/01/09 06/11/09 3.5-4.0 3.5-4.0		CR-13/13R 03/30/09 06/11/09 0.0-0.5 3.5-4.0		CR-13/13R 03/30/09 06/11/09 7.5-8.0 11.0-11.5		CR-14/14R 04/01/09 06/11/09 0.0-0.5 5.6-6.0		CR-14/14R 04/01/09 06/11/09 3.5-4.0 9.0-9.5		CR-15/15R 04/01/09 06/11/09 0.0-0.5 1.4-1.9		CR-15/15R 04/01/09 06/11/09 4.5-5.0 5.9-6.4		CR-16/16R 04/01/09 06/11/09 0.0-0.5 1.5-2.0		CR-16/16R 04/01/09 06/11/09 2.5-3.0 3.0-3.5		CR-16/16R 04/01/09 06/11/09 8.5-9.0 9.0-9.5		CR-17/17R 04/01/09 06/12/09 0.0-0.5 3.4-3.9		CR-17/17R 04/01/09 06/12/09 2.0-2.5 5.4-5.9	
Chromium	mg/kg	--	598		90.3		2420		802		162		132		22.3		45.7		33		3		30.9		1360		105	
Chromium (Hexavalent)	mg/kg	20	--		5.3	U	5.6	U	5.3	U	4.2	U	8.7	U	3.3	U	9.5	U	2.5	U	3	U	8.7	U	4.5	U	12.9	U
Hydronium Ion (pH)	SU	--	--		8.24		11.5		7.26		11.6		7.47		10.5		7.56		12.5		8.79		7.05		7.25		7.4	
Oxidation Reduction Potential	mV	--	--		223		52		184		132		168		179		228		91		370		280		217		412	

Constituent	Units	Criterion[2]	CR-18/18R 04/02/09 06/12/09 0.0-0.5 3.0-3.5		CR-18/18R 04/02/09 06/12/09 3.0-3.5 6.0-6.5		CR-19/19R 04/02/09 06/12/09 0.0-0.5 6.2-6.7		CR-19/19R 04/02/09 06/12/09 2.0-2.5 8.2-8.7		CR-20/20R 04/02/09 06/12/09 0.0-0.5 3.8-4.3		CR-20/20R 04/02/09 06/12/09 2.6-3.1 6.4-6.9		CR-21/21R 04/02/09 06/12/09 0.0-0.5 3.3-3.8		CR-21/21R 04/02/09 06/12/09 3.5-4.0 6.8-7.3		CR-22/22R 04/01/09 06/10/09 0.0-0.5 6.9-7.4		CR-22/22R 04/02/09 06/10/09 3.0-3.5 9.9-10.4		CR-23/23R 04/01/09 06/10/09 0.0-0.5 8.0-8.5		CR-23/23R 04/01/09 06/10/09 2.0-2.5 10.0-10.5	
Chromium	mg/kg	--	217		416		395		366		526		1100		26.1		692		96.6		42.1		246		6120	
Chromium (Hexavalent)	mg/kg	20	4.4	U	7.7	U	5.8	U	6.1	U	3.1	U	13.8	U	2.5	U	13.8	U	3.1	U	10.1	U	5		5.7	U
Hydronium Ion (pH)	SU	--	9.97		7.28		10.1		6.16		7.4		5.37		7.93		4.33		8.6		6.59		8.42		6.94	
Oxidation Reduction Potential	mV	--	117		187		-87		291		290		354		316		436		472		475		429		323	

Constituent	Units	Criterion[2]	CR-24/24R 03/31/09 06/10/09 0.0-0.5 7.5-8.0		CR-24/24R 03/31/09 06/10/09 2.5-3.0 10.0-10.5		CR-24/24R 03/31/09 06/10/09 6.5-7.0 14.0-14.5		CR-25/25R 04/01/09 06/10/09 0.0-0.5 5.1-5.6		CR-25/25R 04/01/09 06/10/09 1.0-1.5 6.0-6.5		CR-25/25R 04/01/09 06/10/09 5.0-5.5 10.1-10.6		CR-26/26R 03/31/09 06/10/09 0.0-0.5 5.2-5.7		CR-26/26R 03/31/09 06/10/09 4.0-4.5 9.2-9.7		CR-26/26R 03/31/09 06/11/09 6.5-7.0 11.7-12.2		CR-27/27R 03/31/09 06/11/09 0.0-0.5 7.1-7.6		CR-27/27R 03/31/09 06/11/09 1.0-1.5 8.1-8.6		CR-27/27R 03/31/09 06/11/09 2.5-3.0 9.6-10.6	
Chromium	mg/kg	--	5290		6180		6170		2040		41.4		27.3		1150		1590		9560		121		52.9		23200	
Chromium (Hexavalent)	mg/kg	20	**121**		**173**		**21.3**		2.7	U	2.8	U	11.5	U	2.8	U	3.5	U	7.4	U	2.8	U	2.7	U	5.8	U
Hydronium Ion (pH)	SU	--	10.2		11.4		10.1		8.42		7.41		6.58		7.92		8.68		8.44		7.34		7.87		7.79	
Oxidation Reduction Potential	mV	--	307		260		268		103		191		158		211		210		377		394		362		164	

Notes:

1. Samples for hexavalent chromium analysis were recollected and analyzed after completion of data validation on the initial samples was completed.
   PDM fill had been placed during the interim and consequently differences in depths between the June and March samples are evident. The June depths correspond to the pre-fill March depths.
2. Nonpromulgated criteria for total (trivalent) and hexavalent chromium determined by chromium workgroup (www.state.nj.us/dep/srp/guidance).
   Criterion for residential exposure to trivalent chromium was used for total chromium.

Exceedances are shown in bold, shaded typeface. Data qualifiers are as follows:

TABLE 4-3

ANALYTICAL RESULTS
DNAPL DELINEATION BORINGS
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent	Units	Criterion[1]	D-1 04/07/09 18-18.5		D-2 04/07/09 20-20.5		D-3 04/10/09 19.5-20		D-4 04/09/09 14.5-15		D-4 04/09/09 23.5-24		D-5 04/09/09 25.5-26		D-6 04/08/09 15.5-16		D-6 04/08/09 20-20.5		D-6 04/08/09 20-20.5		D-7 04/08/09 14.8-15.3		D-7 04/08/09 18-18.5		D-8 04/13/09 29-29.5		D-9 04/13/09 22-22.5	
Volatile Organic Compounds																												
1,1,1-Trichloroethane	mg/Kg	4200	0.06	U	0.062	U	0.0006	U	57	U	0.00067	U	0.067	U	0.058	U	0.00062	U	0.0007	U	0.055	U	0.0007	U	0.00063	U	0.00058	U
1,1,2,2-Tetrachloroethane	mg/Kg	3	0.054	U	0.056	U	0.00089	U	51	U	0.00098	U	0.06	U	0.052	U	0.00091	U	0.001	U	0.05	U	0.001	U	0.00094	U	0.00085	U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg	--	0.019	U	0.02	U	0.0013	U	18	U	0.0015	U	0.021	U	0.018	U	0.0014	U	0.0015	U	0.018	U	0.0015	U	0.0014	U	0.0013	U
1,1,2-Trichloroethane	mg/Kg	6	0.068	U	0.07	U	0.001	U	64	U	0.0011	U	0.075	U	0.065	U	0.0011	U	0.0012	U	0.062	U	0.0012	U	0.0011	U	0.00099	U
1,1-Dichloroethane	mg/Kg	24	0.059	U	0.061	U	0.00071	U	56	U	0.00079	U	0.065	U	0.057	U	0.00073	U	0.00083	U	0.054	U	0.00082	U	0.00075	U	0.00068	U
1,1-Dichloroethene	mg/Kg	150	0.062	U	0.064	U	0.001	U	59	U	0.0012	U	0.069	U	0.06	U	0.0011	U	0.0012	U	0.057	U	0.0012	U	0.0011	U	0.001	U
1,2,4-Trichlorobenzene	mg/Kg	820	0.028	J	0.023	U	0.0011	U	56	J	0.0012	U	0.028	J	0.049	J	0.0011	U	0.0013	U	0.02	U	0.0013	U	0.0012	U	0.001	U
1,2-Dibromoethane	mg/Kg	0.04	0.036	U	0.037	U	0.0011	U	34	U	0.0012	U	0.04	U	0.034	U	0.0011	U	0.0012	U	0.033	U	0.0012	U	0.0011	U	0.001	U
1,2-Dichlorobenzene	mg/Kg	59000	1.3		0.53		0.00099	U	3700		0.0011	U	0.36		2.9		0.001	U	0.0011	U	0.64		0.0011	U	0.001	U	0.00095	U
1,2-Dichloroethane	mg/Kg	3	0.056	U	0.058	U	0.00076	U	53	U	0.00084	U	0.062	U	0.054	U	0.00078	U	0.00088	U	0.051	U	0.00088	U	0.0008	U	0.00073	U
1,2-Dichloropropane	mg/Kg	5	0.074	U	0.077	U	0.00067	U	70	U	0.00074	U	0.082	U	0.071	U	0.00069	U	0.00078	U	0.068	U	0.00078	U	0.00071	U	0.00064	U
1,3-Dichlorobenzene	mg/Kg	59000	1.2		0.39		0.00081	U	4200		0.0009	U	0.36		3.6		0.00083	U	0.00094	U	0.62		0.00094	U	0.00086	U	0.00078	U
1,4-Dichlorobenzene	mg/Kg	13	1.8		0.57		0.00079	U	**5200**		0.00087	U	0.46		4.5		0.00081	U	0.00092	U	0.9		0.00091	U	0.00083	U	0.00076	U
2-Butanone	mg/Kg	44000	0.063	U	0.065	U	0.0011	U	60	U	0.0012	U	0.07	U	0.061	U	0.0011	U	0.0013	U	0.058	U	0.0013	U	0.0012	U	0.001	U
2-Hexanone	mg/Kg	--	0.033	U	0.034	U	0.00085	U	31	U	0.00095	U	0.037	U	0.032	U	0.00087	U	0.00099	U	0.031	U	0.00099	U	0.0009	U	0.00082	U
4-Methyl-2-pentanone	mg/Kg	--	0.034	U	0.036	U	0.00081	U	33	U	0.00089	U	0.038	U	0.033	U	0.00083	U	0.00094	U	0.032	U	0.00093	U	0.00085	U	0.00077	U
Acetone	mg/Kg	--	0.29	U	0.3	U	0.0062	U	280	U	0.007	J	0.32	U	0.28	U	0.0063	U	0.0072	U	0.27	U	0.0072	U	0.0065	U	0.0059	U
Benzene	mg/Kg	5	0.058	U	0.15	J	0.00083	U	54	U	0.00092	U	0.064	U	0.055	U	0.00085	U	0.00097	U	0.053	U	0.00097	U	0.00088	U	0.0008	U
Bromodichloromethane	mg/Kg	3	0.054	U	0.056	U	0.00069	U	51	U	0.00077	U	0.06	U	0.052	U	0.00071	U	0.00081	U	0.05	U	0.0008	U	0.00073	U	0.00067	U
Bromoform	mg/Kg	280	0.062	U	0.064	U	0.00055	U	59	U	0.00061	U	0.069	U	0.06	U	0.00056	U	0.00064	U	0.057	U	0.00063	U	0.00058	U	0.00052	U
Bromomethane	mg/Kg	59	0.092	U	0.095	U	0.00091	U	87	U	0.001	U	0.1	U	0.088	U	0.00094	U	0.0011	U	0.084	U	0.0011	U	0.00096	U	0.00088	U
Carbon disulfide	mg/Kg	110000	0.062	U	0.065	U	0.00063	U	59	U	0.0007	U	0.069	U	0.06	U	0.00065	U	0.00074	U	0.058	U	0.00073	U	0.00067	U	0.00061	U
Carbon Tetrachloride	mg/Kg	2	0.063	U	0.065	U	0.00055	U	60	U	0.00061	U	0.07	U	0.061	U	0.00057	U	0.00064	U	0.058	U	0.00064	U	0.00058	U	0.00053	U
Chlorobenzene	mg/Kg	7400	0.17	J	0.43		0.00094	U	51	J	0.001	U	0.034	U	0.13	J	0.00096	U	0.0011	U	0.05	J	0.0011	U	0.00099	U	0.0009	U
Chloroethane	mg/Kg	1100	0.043	U	0.045	U	0.0019	U	41	U	0.0021	U	0.048	U	0.042	U	0.002	U	0.0022	U	0.04	U	0.0022	U	0.002	U	0.0018	U
Chloroform	mg/Kg	2	0.059	U	0.061	U	0.00072	U	55	U	0.0008	U	0.065	U	0.056	U	0.00074	U	0.00084	U	0.054	U	0.00084	U	0.00076	U	0.00069	U
Chloromethane	mg/Kg	12	0.081	U	0.084	U	0.0011	U	77	U	0.0012	U	0.09	U	0.078	U	0.0011	U	0.0012	U	0.075	U	0.0012	U	0.0011	U	0.001	U
cis-1,2-Dichloroethene	mg/Kg	560	0.039	U	0.04	U	0.00087	U	37	U	0.00096	U	0.043	U	0.037	U	0.00089	U	0.001	U	0.036	U	0.001	U	0.00092	U	0.00083	U
cis-1,3-Dichloropropene	mg/Kg	7	0.042	U	0.044	U	0.00084	U	40	U	0.00093	U	0.047	U	0.041	U	0.00086	U	0.00097	U	0.039	U	0.00097	U	0.00088	U	0.0008	U
Cyclohexane	mg/Kg	--	0.035	U	0.036	U	0.00046	U	33	U	0.00051	U	0.039	U	0.033	U	0.00047	U	0.00053	U	0.032	U	0.00053	U	0.00048	U	0.00044	U
Dibromochloromethane	mg/Kg	8	0.02	U	0.021	U	0.00093	U	19	U	0.001	U	0.023	U	0.02	U	0.00095	U	0.0011	U	0.019	U	0.0011	U	0.00098	U	0.00089	U
Dibromochloropropane	mg/Kg	--	0.038	U	0.039	U	0.00088	U	36	U	0.00097	U	0.042	U	0.036	U	0.0009	U	0.001	U	0.035	U	0.001	U	0.00093	U	0.00084	U
Dichlorodifluoromethane	mg/Kg	230000	0.037	U	0.038	U	0.00082	U	35	U	0.00091	U	0.041	U	0.035	U	0.00084	U	0.00096	U	0.034	U	0.00095	U	0.00087	U	0.00079	U
Ethylbenzene	mg/Kg	110000	0.036	U	0.037	U	0.00079	U	34	U	0.00088	U	0.04	U	0.035	U	0.00081	U	0.00092	U	0.033	U	0.00092	U	0.00084	U	0.00076	U
Isopropylbenzene	mg/Kg	--	0.031	U	0.032	U	0.00084	U	29	U	0.00093	U	0.034	U	0.03	U	0.00086	U	0.00098	U	0.028	U	0.00097	U	0.00089	U	0.00081	U
Methyl Acetate	mg/Kg	--	0.071	U	0.074	U	0.0011	U	68	U	0.0012	U	0.079	U	0.069	U	0.0011	U	0.0013	U	0.066	U	0.0013	U	0.0012	U	0.0011	U
Methylcyclohexane	mg/Kg	--	0.032	U	0.034	U	0.0009	U	31	U	0.00099	U	0.036	U	0.031	U	0.00092	U	0.001	U	0.03	U	0.001	U	0.00095	U	0.00086	U
Methylene chloride	mg/Kg	97	0.091	J	0.066	U	0.00083	U	60	U	0.00092	U	0.07	U	0.061	U	0.00085	U	0.00097	U	0.058	U	0.00096	U	0.0016	JB	0.0008	U
Methyltert-butylether	mg/Kg	320	0.06	U	0.062	U	0.00092	U	56	U	0.001	U	0.066	U	0.057	U	0.00095	U	0.0011	U	0.055	U	0.0011	U	0.00098	U	0.00089	U
Styrene	mg/Kg	260	0.037	U	0.039	U	0.00087	U	35	U	0.00097	U	0.041	U	0.036	U	0.00089	U	0.001	U	0.034	U	0.001	U	0.00092	U	0.00084	U
Tetrachloroethene	mg/Kg	5	0.048	U	0.05	U	0.00084	U	45	U	0.00093	U	0.053	U	0.046	U	0.00086	U	0.00098	U	0.044	U	0.00097	U	0.00089	U	0.00081	U
Toluene	mg/Kg	91000	0.049	U	0.051	U	0.0009	U	47	U	0.001	U	0.055	U	0.047	U	0.00092	U	0.001	U	0.045	U	0.001	U	0.00095	U	0.00087	U
trans-1,2-Dichloroethene	mg/Kg	720	0.044	U	0.045	U	0.00074	U	41	U	0.00082	U	0.049	U	0.042	U	0.00075	U	0.00086	U	0.04	U	0.00085	U	0.00078	U	0.00071	U
Trans-1,3-Dichloropropene	mg/Kg	7	0.034	U	0.035	U	0.00074	U	32	U	0.00082	U	0.038	U	0.033	U	0.00076	U	0.00086	U	0.031	U	0.00086	U	0.00078	U	0.00071	U
Trichloroethene	mg/Kg	20	0.047	U	0.048	U	0.00081	U	44	U	0.0009	U	0.052	U	0.045	U	0.00083	U	0.00095	U	0.043	U	0.00094	U	0.00086	U	0.00078	U
Trichlorofluoromethane	mg/Kg	340000	0.065	U	0.067	U	0.0011	U	62	U	0.0013	U	0.072	U	0.063	U	0.0012	U	0.0013	U	0.06	U	0.0013	U	0.0012	U	0.0011	U
Vinyl chloride	mg/Kg	2	0.075	U	0.078	U	0.00058	U	71	U	0.00064	U	0.083	U	0.072	U	0.00059	U	0.00067	U	0.069	U	0.00067	U	0.00061	U	0.00056	U
Xylene (total)	mg/Kg	170000	0.11	U	0.12	U	0.0028	U	110	U	0.0031	U	0.13	U	0.12	J	0.0028	U	0.0032	U	0.11	U	0.0032	U	0.0029	U	0.0027	U

TABLE 4-3

ANALYTICAL RESULTS
DNAPL DELINEATION BORINGS
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent	Units	Criterion[1]	D-1 04/07/09 18-18.5		D-2 04/07/09 20-20.5		D-3 04/10/09 19.5-20		D-4 04/09/09 14.5-15		D-4 04/09/09 23.5-24		D-5 04/09/09 25.5-26		D-6 04/08/09 15.5-16		D-6 04/08/09 20-20.5		D-6 04/08/09 20-20.5		D-7 04/08/09 14.8-15.3		D-7 04/08/09 18-18.5		D-8 04/13/09 29-29.5		D-9 04/13/09 22-22.5	
Semivolatile Organic Compounds																												
1,1'-Biphenyl	mg/Kg	34000	0.13	J	0.019	U	0.021	U	0.043	J	0.02	U	0.02	U	0.023	J	0.02	U	0.021	U	0.017	U	0.019	U	0.02	U	0.02	U
2,2'-oxybis(1-chloropropane)	mg/Kg	--	0.018	U	0.019	U	0.021	U	0.017	U	0.019	U	0.019	U	0.017	U	0.019	U	0.02	U	0.016	U	0.019	U	0.019	U	0.019	U
2,4,5-Trichlorophenol	mg/Kg	68000	0.01	U	0.011	U	0.012	U	0.0095	U	0.011	U	0.011	U	0.0096	U	0.011	U	0.011	U	0.0093	U	0.011	U	0.011	U	0.011	U
2,4,6-Trichlorophenol	mg/Kg	74	0.02	U	0.021	U	0.023	U	0.019	U	0.022	U	0.022	U	0.019	U	0.022	U	0.023	U	0.019	U	0.021	U	0.022	U	0.022	U
2,4-Dichlorophenol	mg/Kg	2100	0.14		0.017	U	0.019	U	0.071	J	0.018	U	0.018	U	0.06	J	0.018	U	0.018	U	0.015	U	0.017	U	0.018	U	0.018	U
2,4-Dimethylphenol	mg/Kg	14000	0.017	U	0.018	U	0.02	U	0.016	U	0.018	U	0.018	U	0.016	U	0.018	U	0.019	U	0.016	U	0.018	U	0.018	U	0.019	U
2,4-Dinitrophenol	mg/Kg	1400	0.13	U	0.14	U	0.15	U	0.12	U	0.14	U	0.14	U	0.12	U	0.14	U	0.15	U	0.12	U	0.14	U	0.14	U	0.14	U
2,4-Dinitrotoluene	mg/Kg	3	0.019	U	0.02	U	0.022	U	0.018	U	0.02	U	0.021	U	0.018	U	0.02	U	0.021	U	0.018	U	0.02	U	0.02	U	0.021	U
2,6-Dinitrotoluene	mg/Kg	3	0.021	U	0.022	U	0.024	U	0.02	U	0.022	U	0.022	U	0.02	U	0.022	U	0.023	U	0.019	U	0.022	U	0.022	U	0.023	U
2-Chloronaphthalene	mg/Kg	--	0.011	U	0.012	U	0.013	U	0.01	U	0.012	U	0.012	U	0.01	U	0.012	U	0.012	U	0.01	U	0.012	U	0.012	U	0.012	U
2-Chlorophenol	mg/Kg	2200	0.012	U	0.013	U	0.014	U	0.012	U	0.013	U	0.014	U	0.012	U	0.013	U	0.014	U	0.012	U	0.013	U	0.013	U	0.014	U
2-Methylnaphthalene	mg/Kg	2400	0.49		0.017	U	0.018	U	0.15		0.017	U	0.017	U	0.051	J	0.017	U	0.018	U	0.015	U	0.017	U	0.017	U	0.018	U
2-Methylphenol	mg/Kg	3400	0.015	U	0.016	U	0.017	U	0.014	U	0.016	U	0.016	U	0.014	U	0.016	U	0.017	U	0.014	U	0.016	U	0.016	U	0.016	U
2-Nitroaniline	mg/Kg	23000	0.025	U	0.026	U	0.029	U	0.023	U	0.027	U	0.027	U	0.024	U	0.027	U	0.028	U	0.023	U	0.026	U	0.027	U	0.027	U
2-Nitrophenol	mg/Kg	--	0.015	U	0.016	U	0.018	U	0.015	U	0.017	U	0.017	U	0.015	U	0.017	U	0.017	U	0.014	U	0.016	U	0.017	U	0.017	U
3,3-Dichlorobenzidine	mg/Kg	4	0.076	U	0.081	U	0.089	U	0.072	U	0.082	U	0.083	U	0.073	U	0.082	U	0.085	U	0.071	U	0.081	U	0.082	U	0.084	U
3-Nitroaniline	mg/Kg	--	0.013	U	0.014	U	0.015	U	0.013	U	0.014	U	0.014	U	0.013	U	0.014	U	0.015	U	0.012	U	0.014	U	0.014	U	0.015	U
4,6-Dinitro-2-methylphenol	mg/Kg	68	0.39	U	0.41	U	0.45	U	0.37	U	0.42	U	0.42	U	0.37	U	0.42	U	0.44	U	0.36	U	0.41	U	0.42	U	0.43	U
4-Bromophenylphenyl ether	mg/Kg	--	0.017	U	0.018	U	0.02	U	0.016	U	0.019	U	0.019	U	0.017	U	0.019	U	0.019	U	0.016	U	0.018	U	0.019	U	0.019	U
4-Chloro-3-methylphenol	mg/Kg	--	0.012	U	0.013	U	0.014	U	0.011	U	0.013	U	0.013	U	0.012	U	0.013	U	0.013	U	0.011	U	0.013	U	0.013	U	0.013	U
4-Chloroaniline	mg/Kg	--	0.013	U	0.013	U	0.015	U	0.012	U	0.013	U	0.014	U	0.012	U	0.013	U	0.014	U	0.012	U	0.013	U	0.013	U	0.014	U
4-Chlorophenyl phenyl ether	mg/Kg	--	0.018	U	0.019	U	0.021	U	0.017	U	0.019	U	0.019	U	0.017	U	0.019	U	0.02	U	0.017	U	0.019	U	0.019	U	0.02	U
4-Methylphenol	mg/Kg	340	0.018	U	0.019	U	0.021	U	0.017	U	0.019	U	0.019	U	0.017	U	0.019	U	0.02	U	0.017	U	0.019	U	0.019	U	0.02	U
4-Nitroaniline	mg/Kg	--	0.02	U	0.021	U	0.023	U	0.019	U	0.021	U	0.022	U	0.019	U	0.021	U	0.022	U	0.018	U	0.021	U	0.021	U	0.022	U
4-Nitrophenol	mg/Kg	--	0.24	U	0.25	U	0.28	U	0.23	U	0.26	U	0.26	U	0.23	U	0.26	U	0.27	U	0.22	U	0.25	U	0.26	U	0.26	U
Acenaphthene	mg/Kg	37000	0.19		0.014	U	0.015	U	0.012	U	0.014	U	0.014	U	0.012	J	0.014	U	0.015	U	0.012	U	0.014	U	0.014	U	0.014	U
Acenaphthylene	mg/Kg	300000	0.076	J	0.017	U	0.019	U	0.019	J	0.017	U	0.018	U	0.054	J	0.017	U	0.018	U	0.015	U	0.017	U	0.017	U	0.018	U
Acetophenone	mg/Kg	5	0.019	U	0.02	U	0.022	U	0.018	U	0.02	U	0.02	U	0.018	U	0.02	U	0.021	U	0.017	U	0.02	U	0.02	U	0.021	U
Anthracene	mg/Kg	30000	0.15		0.015	U	0.016	U	0.054	J	0.015	U	0.015	U	0.15		0.015	U	0.017	J	0.013	U	0.015	U	0.015	U	0.016	U
Atrazine	mg/Kg	2400	0.019	U	0.02	U	0.022	U	0.018	U	0.021	U	0.021	U	0.018	U	0.021	U	0.021	U	0.018	U	0.02	U	0.021	U	0.021	U
Benzaldehyde	mg/Kg	68000	0.011	U	0.011	U	0.012	U	0.01	U	0.011	U	0.012	U	0.01	U	0.011	U	0.012	U	0.0098	U	0.011	U	0.011	U	0.012	U
Benzo(a)anthracene	mg/Kg	2	0.087		0.014	U	0.015	U	0.037	J	0.014	U	0.014	U	0.09		0.014	U	0.014	U	0.012	U	0.014	U	0.014	U	0.014	U
Benzo(a)pyrene	mg/Kg	0.2	0.051	J	0.024	U	0.026	U	0.021	U	0.024	U	0.025	U	0.062	J	0.024	U	0.025	U	0.021	U	0.024	U	0.024	U	0.025	U
Benzo(b)fluoranthene	mg/Kg	2	0.3		0.017	U	0.019	U	0.016	U	0.018	U	0.018	U	0.18		0.018	U	0.018	U	0.015	U	0.017	U	0.018	U	0.018	U
Benzo(ghi)perylene	mg/Kg	30000	0.027	J	0.0063	U	0.0069	U	0.0056	U	0.0064	U	0.0065	U	0.031	J	0.0064	U	0.0066	U	0.0055	U	0.0063	U	0.0064	U	0.0065	U
Benzo(k)fluoranthene	mg/Kg	23	0.023	J	0.018	U	0.02	U	0.016	U	0.018	U	0.018	U	0.016	U	0.018	U	0.019	U	0.016	U	0.018	U	0.018	U	0.019	U
Bis(2-chloroethoxy)methane	mg/Kg	--	0.016	U	0.017	U	0.019	U	0.015	U	0.017	U	0.018	U	0.016	U	0.017	U	0.018	U	0.015	U	0.017	U	0.017	U	0.018	U
Bis(2-chloroethyl)ether	mg/Kg	2	0.0071	U	0.0075	U	0.0082	U	0.0067	U	0.0076	U	0.0077	U	0.0068	U	0.0076	U	0.0079	U	0.0066	U	0.0075	U	0.0076	U	0.0078	U
Bis(2-ethylhexyl)phthalate	mg/Kg	140	0.09	J	0.036	U	0.04	U	0.032	U	0.037	U	0.037	U	0.033	U	0.037	U	0.038	U	0.032	U	0.036	U	0.037	U	0.038	U
Butyl benzyl phthalate	mg/Kg	14000	0.028	U	0.03	U	0.033	U	0.027	U	0.03	U	0.031	U	0.027	U	0.03	U	0.032	U	0.026	U	0.03	U	0.03	U	0.031	U
Caprolactam	mg/Kg	340000	0.053	U	0.056	U	0.061	U	0.05	U	0.057	U	0.058	U	0.051	U	0.057	U	0.059	U	0.049	U	0.056	U	0.057	U	0.058	U
Carbazole	mg/Kg	96	0.032	J	0.011	U	0.012	U	0.01	U	0.011	U	0.012	U	0.026	J	0.011	U	0.012	U	0.0099	U	0.011	U	0.011	U	0.012	U
Chrysene	mg/Kg	230	0.066	J	0.015	U	0.016	U	0.035	J	0.015	U	0.015	U	0.076	J	0.015	U	0.016	U	0.013	U	0.015	U	0.015	U	0.016	U
Dibenzo(a,h)anthracene	mg/Kg	0.2	0.018	U	0.019	U	0.021	U	0.017	U	0.019	U	0.019	U	0.017	U	0.019	U	0.02	U	0.017	U	0.019	U	0.019	U	0.02	U
Dibenzofuran	mg/Kg	--	0.048	J	0.014	U	0.016	U	0.013	U	0.015	U	0.015	U	0.061	J	0.015	U	0.015	U	0.013	U	0.014	U	0.015	U	0.015	U
Diethyl phthalate	mg/Kg	550000	0.023	U	0.024	U	0.027	U	0.022	U	0.025	U	0.025	U	0.022	U	0.025	U	0.026	U	0.021	U	0.024	U	0.025	U	0.025	U
Dimethyl phthalate	mg/Kg	--	0.014	U	0.014	U	0.016	U	0.013	U	0.015	U	0.015	U	0.013	U	0.015	U	0.015	U	0.013	U	0.014	U	0.015	U	0.015	U
Di-n-butyl phthalate	mg/Kg	68000	0.023	U	0.024	U	0.026	U	0.021	U	0.024	U	0.025	U	0.022	U	0.024	U	0.025	U	0.021	U	0.024	U	0.024	U	0.025	U

TABLE 4-3

ANALYTICAL RESULTS
DNAPL DELINEATION BORINGS
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent	Units	Criterion[1]	D-1 04/07/09 18-18.5		D-2 04/07/09 20-20.5		D-3 04/10/09 19.5-20		D-4 04/09/09 14.5-15		D-4 04/09/09 23.5-24		D-5 04/09/09 25.5-26		D-6 04/08/09 15.5-16		D-6 04/08/09 20-20.5		D-6 04/08/09 20-20.5		D-7 04/08/09 14.8-15.3		D-7 04/08/09 18-18.5		D-8 04/13/09 29-29.5		D-9 04/13/09 22-22.5	
Semivolatile Organic Compounds (Continued)																												
Di-n-octyl phthalate	mg/Kg	27000	0.01	U	0.011	U	0.012	U	0.0099	U	0.011	U	0.011	U	0.01	U	0.011	U	0.012	U	0.0097	U	0.011	U	0.011	U	0.011	U
Fluoranthene	mg/Kg	24000	0.16		0.0072	U	0.0079	U	0.058	J	0.0073	U	0.0074	U	0.3		0.035	J	0.041	J	0.012	J	0.021	J	0.0073	U	0.0075	U
Fluorene	mg/Kg	24000	0.14		0.013	U	0.014	U	0.037	J	0.013	U	0.013	U	0.11		0.013	U	0.014	U	0.011	U	0.013	U	0.013	U	0.013	U
Hexachlorobenzene	mg/Kg	1	0.064	J	0.016	U	0.018	U	0.015	U	0.016	U	0.017	U	0.015	U	0.016	U	0.017	U	0.014	U	0.016	U	0.016	U	0.017	U
Hexachlorobutadiene	mg/Kg	25	0.017	U	0.018	U	0.02	U	0.016	U	0.018	U	0.019	U	0.016	U	0.018	U	0.019	U	0.016	U	0.018	U	0.018	U	0.019	U
Hexachlorocyclopentadiene	mg/Kg	110	0.015	U	0.016	U	0.018	U	0.015	U	0.017	U	0.017	U	0.015	U	0.017	U	0.017	U	0.014	U	0.016	U	0.017	U	0.017	U
Hexachloroethane	mg/Kg	140	0.014	U	0.014	U	0.016	U	0.013	U	0.015	U	0.015	U	0.013	U	0.015	U	0.015	U	0.013	U	0.014	U	0.015	U	0.015	U
Indeno(1,2,3-cd)pyrene	mg/Kg	2	0.021	J	0.0047	U	0.0052	U	0.0042	U	0.0048	U	0.0048	U	0.16		0.0048	U	0.005	U	0.0041	U	0.0047	U	0.0048	U	0.0049	U
Isophorone	mg/Kg	2000	0.016	U	0.017	U	0.018	U	0.015	U	0.017	U	0.017	U	0.015	U	0.017	U	0.018	U	0.015	U	0.017	U	0.017	U	0.017	U
Naphthalene	mg/Kg	17	1.6		0.012	U	0.014	U	0.54		0.013	U	0.013	U	0.58		0.12		0.11		0.011	U	0.013	J	0.013	U	0.013	U
Nitrobenzene	mg/Kg	340	0.02	U	0.022	U	0.024	U	0.019	U	0.022	U	0.022	U	0.02	U	0.022	U	0.023	U	0.019	U	0.021	U	0.022	U	0.022	U
N-Nitrosodiphenylamine	mg/Kg	390	0.017	U	0.018	U	0.019	U	0.016	U	0.018	U	0.018	U	0.016	U	0.018	U	0.019	U	0.015	U	0.017	U	0.018	U	0.018	U
N-Nitrosodipropylamine	mg/Kg	0.3	0.022	U	0.024	U	0.026	U	0.021	U	0.024	U	0.024	U	0.022	U	0.024	U	0.025	U	0.021	U	0.024	U	0.024	U	0.025	U
Pentachlorophenol	mg/Kg	10	0.07	U	0.074	U	0.081	U	0.067	U	0.076	U	0.076	U	0.067	U	0.076	U	0.079	U	0.065	U	0.074	U	0.076	U	0.077	U
Phenanthrene	mg/Kg	300000	0.34		0.01	U	0.011	U	0.14		0.01	U	0.011	U	0.59		0.046	J	0.064	J	0.013	J	0.023	J	0.01	U	0.011	U
Phenol	mg/Kg	210000	0.016	U	0.017	U	0.019	U	0.015	U	0.017	U	0.017	U	0.015	U	0.017	U	0.018	U	0.015	U	0.017	U	0.017	U	0.018	U
Pyrene	mg/Kg	18000	0.17		0.023	U	0.025	U	0.085		0.023	U	0.023	U	0.23		0.031	J	0.036	J	0.02	U	0.023	U	0.023	U	0.024	U
Metals																												
Aluminum	mg/Kg	--	3.54	J	11.5	J	11.3		2.72	J	11.5	J	10.6	J	3.25	J	10.7	J	11.5	J	3.13	J	8.81	J	13.9	E	12.1	
Antimony	mg/Kg	450	0.00026	U	0.00027	U	0.00034	B	0.00024	U	0.00028	U	0.00028	U	0.00025	U	0.00028	U	0.00029	B	0.00024	U	0.00027	B	0.00028	U	0.00028	U
Arsenic	mg/Kg	19	0.0034		0.0045		0.0042		0.0017		0.0067		0.007		0.003		0.0055		0.0056		0.0013		0.0041		0.0082		0.0059	
Barium	mg/Kg	59000	0.0199	BJ	0.0793	J	0.066		0.0158	B	0.0725		0.0647		0.0125	B	0.0604		0.0874		0.0119	B	0.0425		0.0836		0.0789	
Beryllium	mg/Kg	140	0.00033	B	0.0008		0.00085		0.00026	BJ	0.00088	J	0.00081	J	0.00039	BJ	0.00082	J	0.00088	J	0.0003	BJ	0.00073	J	0.00096		0.00093	
Cadmium	mg/Kg	78	0.000047	B	0.00022	B	0.00003	U	0.000084	B	0.00041	B	0.00035	B	0.00011	B	0.00037	B	0.00041	B	0.000062	B	0.00027	B	0.000033	BJ	0.000041	BJ
Calcium	mg/Kg	--	0.814	J	4.17	J	5.66	J	0.564	BJ	6.34	J	7.75	J	0.818	J	5.92	J	6.89	J	0.484	BJ	2.74	J	7.66	JE	5.7	J
Chromium	mg/Kg	120000	0.0084	J	0.0204	J	0.0177	J	0.0065		0.0192		0.0182		0.0083		0.0183		0.02		0.0067		0.0151		0.0232	JE	0.0217	J
Cobalt	mg/Kg	590	0.0036	B	0.0108		0.0121		0.0025	B	0.011		0.01	E	0.0031	B	0.0105		0.0112		0.0027	B	0.0091		0.0127	E	0.0127	
Copper	mg/Kg	45000	0.0073		0.021		0.0198		0.0055		0.023		0.0225		0.0059		0.0204		0.0222		0.0054		0.0162		0.0274		0.024	
Iron	mg/Kg	--	11.7	J	25	J	35	J	6.4		27.7		25.5		11.8		27.2		28.6		7.78		20.5		32.2	JE	30	J
Lead	mg/Kg	800	0.0028		0.0126		0.0135		0.0021		0.0124		0.0093		0.0026		0.0125		0.0129		0.0022		0.0115		0.0118		0.0142	
Magnesium	mg/Kg	--	1.44	J	6.27	J	7.08		1.17		7.43		7.08		1.47		6.85		7.6		1.23		4.82		8.85	E	7.59	
Manganese	mg/Kg	5900	0.0619	J	0.55	J	0.957		0.0409		0.57		0.527		0.0529		0.625		0.659		0.0423		0.432		0.636	E	0.619	
Mercury	mg/Kg	65	0.000013	U	0.000016	B	0.000029	B	0.000015	B	0.000031	B	0.00003	B	0.0002		0.000044		0.000026	B	0.000012	U	0.000015	B	0.00003	B	0.000029	B
Nickel	mg/Kg	23000	0.007		0.0235		0.0249		0.0057		0.0242		0.0217	E	0.0075		0.0227		0.024		0.0058		0.0194		0.0277	E	0.0265	
Potassium	mg/Kg	--	0.457	B	1.93		1.71		0.371	B	1.71		1.56		0.377	B	1.67		1.79		0.396	B	1.42		2.02		1.81	
Selenium	mg/Kg	5700	0.00021	U	0.00022	U	0.00025	U	0.0002	U	0.00023	U	0.00023	U	0.0002	U	0.00023	U	0.00024	U	0.0002	U	0.00022	U	0.00023	U	0.00023	U
Silver	mg/Kg	5700	0.000081	U	0.00012	B	0.00019	B	0.000076	U	0.00026	BJ	0.00019	BJ	0.0014	J	0.0015	J	0.00027	BJ	0.00019	BJ	0.00015	BJ	0.00015	B	0.00017	B
Sodium	mg/Kg	--	0.271	BJ	0.392	BJ	0.391	B	0.248	B	0.315	B	0.289	B	0.137	B	0.574	B	0.62	B	0.205	B	0.606	B	0.519	B	1.03	
Thallium	mg/Kg	79	0.00038	U	0.00039	U	0.00044	U	0.00035	U	0.0004	U	0.00041	U	0.00036	U	0.0004	U	0.00042	U	0.00035	U	0.00039	U	0.0004	U	0.00041	U
Vanadium	mg/Kg	1100	0.0115		0.0263		0.0212		0.0088		0.0244		0.0244		0.0154		0.0232		0.0261		0.0092		0.0192		0.0306	E	0.0285	
Zinc	mg/Kg	110000	0.0187	J	0.0609	J	0.067	J	0.0136	J	0.0601	J	0.052	JE	0.0172	J	0.0579	J	0.0613	J	0.0146	J	0.0522	J	0.0664	JE	0.0671	J
Miscellaneous																												
Percent Solids	%	--	81.7		78		70.4		87		76.7		75.1		85.9		76.6		73.7		87.7		78.2		76.7		75	

TABLE 4-3

ANALYTICAL RESULTS
DNAPL DELINEATION BORINGS
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent	Units	Criterion[1]	D-10 04/14/09 21.5-22		D-11 04/14/09 17-17.5		D-12 04/15/09 16-16.5		D-13 04/06/09 18-18.5	
Volatile Organic Compounds										
1,1,1-Trichloroethane	mg/Kg	4200	0.00064	U	0.00062	U	0.00059	U	0.00059	U
1,1,2,2-Tetrachloroethane	mg/Kg	3	0.00095	U	0.00092	U	0.00088	U	0.00087	U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg	--	0.0014	U	0.0014	U	0.0013	U	0.0013	U
1,1,2-Trichloroethane	mg/Kg	6	0.0011	U	0.0011	U	0.001	U	0.001	U
1,1-Dichloroethane	mg/Kg	24	0.00076	U	0.00074	U	0.0007	U	0.0007	U
1,1-Dichloroethene	mg/Kg	150	0.0011	U	0.0011	U	0.001	U	0.001	U
1,2,4-Trichlorobenzene	mg/Kg	820	0.0012	U	0.0011	U	0.0011	U	0.0011	U
1,2-Dibromoethane	mg/Kg	0.04	0.0011	U	0.0011	U	0.0011	U	0.001	U
1,2-Dichlorobenzene	mg/Kg	59000	0.001	U	0.001	U	0.00097	U	0.00097	U
1,2-Dichloroethane	mg/Kg	3	0.00081	U	0.00078	U	0.00075	U	0.00074	U
1,2-Dichloropropane	mg/Kg	5	0.00071	U	0.00069	U	0.00066	U	0.00066	U
1,3-Dichlorobenzene	mg/Kg	59000	0.00086	U	0.00084	U	0.0008	U	0.0008	U
1,4-Dichlorobenzene	mg/Kg	13	0.00084	U	0.00081	U	0.00078	U	0.00077	U
2-Butanone	mg/Kg	44000	0.0012	U	0.0011	U	0.0011	U	0.0011	U
2-Hexanone	mg/Kg	--	0.00091	U	0.00088	U	0.00084	U	0.00084	U
4-Methyl-2-pentanone	mg/Kg	--	0.00086	U	0.00083	U	0.0008	U	0.00079	U
Acetone	mg/Kg	--	0.0066	U	0.0086	J	0.0061	U	0.0061	U
Benzene	mg/Kg	5	0.00089	U	0.00086	U	0.00082	U	0.00082	U
Bromodichloromethane	mg/Kg	3	0.00074	U	0.00072	U	0.00068	U	0.00068	U
Bromoform	mg/Kg	280	0.00058	U	0.00057	U	0.00054	U	0.00054	U
Bromomethane	mg/Kg	59	0.00097	U	0.00094	U	0.0009	U	0.0009	U
Carbon disulfide	mg/Kg	110000	0.00067	U	0.00065	U	0.00062	U	0.00062	U
Carbon Tetrachloride	mg/Kg	2	0.00059	U	0.00057	U	0.00054	U	0.00054	U
Chlorobenzene	mg/Kg	7400	0.001	U	0.00097	U	0.00092	U	0.00092	U
Chloroethane	mg/Kg	1100	0.002	U	0.002	U	0.0019	U	0.0019	U
Chloroform	mg/Kg	2	0.00077	U	0.00075	U	0.00071	U	0.00071	U
Chloromethane	mg/Kg	12	0.0011	U	0.0011	U	0.001	U	0.001	U
cis-1,2-Dichloroethene	mg/Kg	560	0.00093	U	0.0009	U	0.00086	U	0.00085	U
cis-1,3-Dichloropropene	mg/Kg	7	0.00089	U	0.00087	U	0.00083	U	0.00082	U
Cyclohexane	mg/Kg	--	0.00049	U	0.00047	U	0.00045	U	0.00045	U
Dibromochloromethane	mg/Kg	8	0.00098	U	0.00096	U	0.00091	U	0.00091	U
Dibromochloropropane	mg/Kg	--	0.00093	U	0.00091	U	0.00087	U	0.00086	U
Dichlorodifluoromethane	mg/Kg	230000	0.00088	U	0.00085	U	0.00081	U	0.00081	U
Ethylbenzene	mg/Kg	110000	0.00085	U	0.00082	U	0.00078	U	0.00078	U
Isopropylbenzene	mg/Kg	--	0.00089	U	0.00087	U	0.00083	U	0.00082	U
Methyl Acetate	mg/Kg	--	0.0012	U	0.0012	U	0.0011	U	0.0011	U
Methylcyclohexane	mg/Kg	--	0.00095	U	0.00093	U	0.00088	U	0.00088	U
Methylene chloride	mg/Kg	97	0.0017	JB	0.00086	U	0.0014	JB	0.00082	U
Methyltert-butylether	mg/Kg	320	0.00098	U	0.00096	U	0.00091	U	0.00091	U
Styrene	mg/Kg	260	0.00093	U	0.0009	U	0.00086	U	0.00086	U
Tetrachloroethene	mg/Kg	5	0.0009	U	0.00087	U	0.00083	U	0.00082	U
Toluene	mg/Kg	91000	0.00096	U	0.00093	U	0.00089	U	0.00088	U
trans-1,2-Dichloroethene	mg/Kg	720	0.00078	U	0.00076	U	0.00073	U	0.00072	U
Trans-1,3-Dichloropropene	mg/Kg	7	0.00079	U	0.00076	U	0.00073	U	0.00072	U
Trichloroethene	mg/Kg	20	0.00087	U	0.00084	U	0.0008	U	0.0008	U
Trichlorofluoromethane	mg/Kg	340000	0.0012	U	0.0012	U	0.0011	U	0.0011	U
Vinyl chloride	mg/Kg	2	0.00062	U	0.0006	U	0.00057	U	0.00057	U
Xylene (total)	mg/Kg	170000	0.0029	U	0.0029	U	0.0027	U	0.0027	U

TABLE 4-3

ANALYTICAL RESULTS
DNAPL DELINEATION BORINGS
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent	Units	Criterion[1]	D-10 04/14/09 21.5-22		D-11 04/14/09 17-17.5		D-12 04/15/09 16-16.5		D-13 04/06/09 18-18.5	
Semivolatile Organic Compounds										
1,1'-Biphenyl	mg/Kg	34000	0.02	U	0.02	U	0.019	U	0.019	U
2,2'-oxybis(1-chloropropane)	mg/Kg	--	0.019	U	0.019	U	0.018	U	0.018	U
2,4,5-Trichlorophenol	mg/Kg	68000	0.011	U	0.011	U	0.01	U	0.01	U
2,4,6-Trichlorophenol	mg/Kg	74	0.022	U	0.021	U	0.021	U	0.021	U
2,4-Dichlorophenol	mg/Kg	2100	0.018	U	0.017	U	0.017	U	0.017	U
2,4-Dimethylphenol	mg/Kg	14000	0.018	U	0.018	U	0.018	U	0.017	U
2,4-Dinitrophenol	mg/Kg	1400	0.14	U	0.14	U	0.13	U	0.13	U
2,4-Dinitrotoluene	mg/Kg	3	0.02	U	0.02	U	0.02	U	0.019	U
2,6-Dinitrotoluene	mg/Kg	3	0.022	U	0.022	U	0.021	U	0.021	U
2-Chloronaphthalene	mg/Kg	--	0.012	U	0.012	U	0.011	U	0.011	U
2-Chlorophenol	mg/Kg	2200	0.013	U	0.013	U	0.013	U	0.013	U
2-Methylnaphthalene	mg/Kg	2400	0.017	U	0.017	U	0.017	U	0.016	U
2-Methylphenol	mg/Kg	3400	0.016	U	0.016	U	0.091	J	0.015	U
2-Nitroaniline	mg/Kg	23000	0.027	U	0.026	U	0.026	U	0.025	U
2-Nitrophenol	mg/Kg	--	0.017	U	0.016	U	0.016	U	0.016	U
3,3-Dichlorobenzidine	mg/Kg	4	0.082	U	0.081	U	0.079	U	0.078	U
3-Nitroaniline	mg/Kg	--	0.014	U	0.014	U	0.014	U	0.013	U
4,6-Dinitro-2-methylphenol	mg/Kg	68	0.42	U	0.41	U	0.4	U	0.4	U
4-Bromophenylphenyl ether	mg/Kg	--	0.018	U	0.018	U	0.018	U	0.018	U
4-Chloro-3-methylphenol	mg/Kg	--	0.013	U	0.013	U	0.013	U	0.012	U
4-Chloroaniline	mg/Kg	--	0.013	U	0.013	U	0.013	U	0.013	U
4-Chlorophenyl phenyl ether	mg/Kg	--	0.019	U	0.019	U	0.019	U	0.018	U
4-Methylphenol	mg/Kg	340	0.019	U	0.019	U	0.25	J	0.018	U
4-Nitroaniline	mg/Kg	--	0.021	U	0.021	U	0.021	U	0.02	U
4-Nitrophenol	mg/Kg	--	0.26	U	0.25	U	0.25	U	0.24	U
Acenaphthene	mg/Kg	37000	0.014	U	0.014	U	0.013	U	0.013	U
Acenaphthylene	mg/Kg	300000	0.017	U	0.017	U	0.017	U	0.031	J
Acetophenone	mg/Kg	5	0.02	U	0.02	U	0.019	U	0.019	U
Anthracene	mg/Kg	30000	0.015	U	0.015	U	0.015	U	0.021	J
Atrazine	mg/Kg	2400	0.021	U	0.02	U	0.02	U	0.02	U
Benzaldehyde	mg/Kg	68000	0.011	U	0.011	U	0.011	U	0.011	U
Benzo(a)anthracene	mg/Kg	2	0.014	U	0.014	U	0.013	U	0.013	U
Benzo(a)pyrene	mg/Kg	0.2	0.024	U	0.024	U	0.023	U	0.026	J
Benzo(b)fluoranthene	mg/Kg	2	0.018	U	0.017	U	0.017	U	0.29	
Benzo(ghi)perylene	mg/Kg	30000	0.0064	U	0.0063	U	0.0062	U	0.02	J
Benzo(k)fluoranthene	mg/Kg	23	0.018	U	0.018	U	0.017	U	0.017	U
Bis(2-chloroethoxy)methane	mg/Kg	--	0.017	U	0.017	U	0.017	U	0.017	U
Bis(2-chloroethyl)ether	mg/Kg	2	0.0076	U	0.0076	U	0.0074	U	0.0072	U
Bis(2-ethylhexyl)phthalate	mg/Kg	140	0.037	U	0.5		0.25	J	0.069	J
Butyl benzyl phthalate	mg/Kg	14000	0.03	U	0.03	U	0.029	U	0.029	U
Caprolactam	mg/Kg	340000	0.057	U	0.056	U	0.055	U	0.054	U
Carbazole	mg/Kg	96	0.011	U	0.011	U	0.011	U	0.011	U
Chrysene	mg/Kg	230	0.015	U	0.015	U	0.015	U	0.014	U
Dibenzo(a,h)anthracene	mg/Kg	0.2	0.019	U	0.019	U	0.018	U	0.018	U
Dibenzofuran	mg/Kg	--	0.015	U	0.015	U	0.014	U	0.017	J
Diethyl phthalate	mg/Kg	550000	0.025	U	0.024	U	0.024	U	0.023	U
Dimethyl phthalate	mg/Kg	--	0.015	U	0.015	U	0.014	U	0.014	U
Di-n-butyl phthalate	mg/Kg	68000	0.024	U	0.024	U	0.023	U	0.023	U

TABLE 4-3

ANALYTICAL RESULTS
DNAPL DELINEATION BORINGS
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent	Units	Criterion[1]	D-10 04/14/09 21.5-22		D-11 04/14/09 17-17.5		D-12 04/15/09 16-16.5		D-13 04/06/09 18-18.5	
Semivolatile Organic Compounds (Continued)										
Di-n-octyl phthalate	mg/Kg	27000	0.011	U	0.011	U	0.011	U	0.011	U
Fluoranthene	mg/Kg	24000	0.0073	U	0.0073	U	0.024	J	0.092	
Fluorene	mg/Kg	24000	0.013	U	0.013	U	0.013	U	0.022	J
Hexachlorobenzene	mg/Kg	1	0.016	U	0.016	U	0.016	U	0.016	U
Hexachlorobutadiene	mg/Kg	25	0.018	U	0.018	U	0.018	U	0.018	U
Hexachlorocyclopentadiene	mg/Kg	110	0.017	U	0.016	U	0.016	U	0.016	U
Hexachloroethane	mg/Kg	140	0.015	U	0.015	U	0.014	U	0.014	U
Indeno(1,2,3-cd)pyrene	mg/Kg	2	0.0048	U	0.0047	U	0.0046	U	0.015	J
Isophorone	mg/Kg	2000	0.017	U	0.017	U	0.016	U	0.016	U
Naphthalene	mg/Kg	17	0.013	U	0.013	U	0.028	J	0.058	J
Nitrobenzene	mg/Kg	340	0.022	U	0.022	U	0.021	U	0.021	U
N-Nitrosodiphenylamine	mg/Kg	390	0.018	U	0.018	U	0.017	U	0.017	U
N-Nitrosodipropylamine	mg/Kg	0.3	0.024	U	0.024	U	0.023	U	0.023	U
Pentachlorophenol	mg/Kg	10	0.075	U	0.075	U	0.073	U	0.072	U
Phenanthrene	mg/Kg	300000	0.01	U	0.01	U	0.032	J	0.1	
Phenol	mg/Kg	210000	0.017	U	0.017	U	0.63		0.016	U
Pyrene	mg/Kg	18000	0.023	U	0.023	U	0.022	U	0.056	J
Metals										
Aluminum	mg/Kg	--	12.7		11		9.92		6.69	J
Antimony	mg/Kg	450	0.00028	U	0.00027	U	0.00027	U	0.00026	U
Arsenic	mg/Kg	19	0.0065	E	0.0048		0.0037		0.0017	
Barium	mg/Kg	59000	0.0699		0.065		0.0529		0.0204	BJ
Beryllium	mg/Kg	140	0.00047	BE	0.00049	B	0.00044	B	0.00047	B
Cadmium	mg/Kg	78	0.00082		0.00081		0.00071		0.000057	B
Calcium	mg/Kg	--	7.41		5.07		3.38		1.34	J
Chromium	mg/Kg	120000	0.0203		0.0181		0.0167		0.0166	J
Cobalt	mg/Kg	590	0.014		0.0117		0.0108		0.0056	B
Copper	mg/Kg	45000	0.023		0.0198		0.0176		0.0082	
Iron	mg/Kg	--	27.5	JE	27	J	23.6	J	12.9	J
Lead	mg/Kg	800	0.0135		0.0133		0.0124		0.0052	
Magnesium	mg/Kg	--	7.89	E	6.95		6.08		2.35	J
Manganese	mg/Kg	5900	0.579	E	0.657		0.497		0.134	J
Mercury	mg/Kg	65	0.00003	B	0.000031	B	0.000014	U	0.000019	B
Nickel	mg/Kg	23000	0.0296		0.0259		0.0232		0.011	
Potassium	mg/Kg	--	1.9		1.67		1.64		0.947	
Selenium	mg/Kg	5700	0.00023	U	0.00022	U	0.00022	U	0.00022	U
Silver	mg/Kg	5700	0.000087	U	0.000085	U	0.000083	U	0.000082	U
Sodium	mg/Kg	--	0.688		1.14		1.47		1.08	J
Thallium	mg/Kg	79	0.00051	B	0.00057	B	0.00043	B	0.00038	U
Vanadium	mg/Kg	1100	0.0267		0.0231		0.0208		0.0188	
Zinc	mg/Kg	110000	0.0607	JE	0.0553	J	0.0509	J	0.0287	J
Miscellaneous										
Percent Solids	%	--	76		77.5		79.5		80.8	

TABLE 4-3

ANALYTICAL RESULTS
DNAPL DELINEATION BORINGS
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Notes:

1. Criteria are the NJDEP Non-Residential Direct Contact Soil Remediation Standards (online at www.nj.gov/dep/srp/regs/rs/rs_appendix1.pdf) unless noted otherwise.
2. Nonpromulgated criteria for total (trivalent) and hexavalent chromium determined by chromium workgroup (www.state.nj.us/dep/srp/guidance).
   Criterion for residential exposure to trivalent chromium was used for total chromium.
3. Exceedances are shown in bold, shaded typeface. Data qualifiers are as follows:
   U - Not detected at the reporting limit indicated.
   B - Analyte detected in associated method blank
   J - Result is an estimate. Quantitated between the detection limit and the reporting limit.
   E - Result is an estimate. Result is for diluted sample.

TABLE 4-4

ANALYTICAL RESULTS
BARRIER WALL ALIGNMENT SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	BW-01 05/19/08 Fill Primary		BW-01 05/19/08 Mat Primary		BW-01 05/19/08 Sand Primary		BW-02 05/15/08 Fill Primary		BW-02 05/15/08 Mat Primary		BW-02 05/15/08 Sand Primary		BW-02 05/15/08 Clay Primary		BW-03 05/14/08 Fill Primary		BW-03 05/14/08 Mat Primary		BW-03 05/14/08 Sand Primary		BW-03 05/14/08 Clay Primary	
		Sample Depth	**0.0-7.0 ft**		**10.0-16.0 ft**		**18.0-21.0 ft**		**0.0-9.75 ft**		**10.0-12.0 ft**		**16.5-21.7 ft**		**24.0-26.0 ft**		**0.0-6.25 ft**		**10.0-12.0 ft**		**16.0-18.0 ft**		**22.0-24.0 ft**	
		VOC Sample Depth	**6.5-7.5 ft**		**11.0-12.0 ft**		**19.0-20.0 ft**		**9.0-9.75 ft**		**10.0-11.0 ft**		**21.0-21.7 ft**		**25.0-26.0 ft**		**6.0-6.25 ft**		**11.0-12.0 ft**		**17.0-18.0 ft**		**23.0-24.0 ft**	
Volatile Organics																								
1,1,1-Trichloroethane	mg/Kg	4200	0.0022	U	0.00066	U	0.0006	U	0.00058	U	0.0011	U	0.00058	U	0.00061	U	5.2	U	0.0037	U	0.00071	U	0.00064	U
1,1,2,2-Tetrachloroethane	mg/Kg	3	0.0033	U	0.00098	U	0.00088	U	0.00085	U	0.0016	U	0.00086	U	0.0009	U	5.8	U	0.0055	U	0.0011	U	0.00094	U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg	6	0.0049	U	0.0015	U	0.0013	U	0.0013	U	0.0023	U	0.0013	U	0.0013	U	6.3	U	0.0082	U	0.0016	U	0.0014	U
1,1,2-Trichloroethane	mg/Kg	--	0.0038	U	0.0011	U	0.001	U	0.00099	U	0.0018	U	0.00099	U	0.001	U	5.4	U	0.0064	U	0.0012	U	0.0011	U
1,1-Dichloroethane	mg/Kg	24	0.0027	U	0.00078	U	0.00071	U	0.00068	U	0.0013	U	0.00069	U	0.00072	U	5	U	0.0044	U	0.00084	U	0.00075	U
1,1-Dichloroethene	mg/Kg	150	0.0039	U	0.0012	U	0.001	U	0.001	U	0.0019	U	0.001	U	0.0011	U	6	U	0.0065	U	0.0012	U	0.0011	U
1,2,4-Trichlorobenzene	mg/Kg	820	0.007	J	0.0012	U	0.0011	U	0.001	U	0.0019	U	0.0011	U	0.0011	U	5.3	U	0.11		0.22		0.0046	J
1,2-Dibromoethane	mg/Kg	0.04	0.004	U	0.0012	U	0.0011	U	0.001	U	0.0019	U	0.001	U	0.0011	U	5.3	U	0.0066	U	0.0013	U	0.0011	U
1,2-Dichlorobenzene	mg/Kg	59000	0.0037	U	0.0011	U	0.00098	U	0.00095	U	0.0017	U	0.00095	U	0.001	U	5.6	U	0.022	J	0.12		0.001	U
1,2-Dichloroethane	mg/Kg	3	0.0028	U	0.00083	U	0.00075	U	0.00073	U	0.0013	U	0.00073	U	0.00077	U	5.6	U	0.0047	U	0.0009	U	0.0008	U
1,2-Dichloropropane	mg/Kg	5	0.0025	U	0.00074	U	0.00067	U	0.00064	U	0.0012	U	0.00065	U	0.00068	U	5.7	U	0.0042	U	0.00079	U	0.00071	U
1,3-Dichlorobenzene	mg/Kg	59000	0.003	U	0.00089	U	0.0008	U	0.00078	U	0.0014	U	0.00078	U	0.00082	U	5.4	U	0.043		0.13		0.00086	U
1,4-Dichlorobenzene	mg/Kg	13	0.0029	U	0.00087	U	0.00078	U	0.00076	U	0.0014	U	0.00076	U	0.0008	U	5.7	U	0.075		0.21		0.00083	U
2-Butanone	mg/Kg	44000	0.0041	U	0.0012	U	0.0011	U	0.001	U	0.0019	U	0.0074		0.0011	U	5	U	0.0068	U	0.0013	U	0.0012	U
2-Hexanone	mg/Kg	--	0.0032	U	0.00094	U	0.00085	U	0.00082	U	0.0015	U	0.00082	U	0.00086	U	4	U	0.0053	U	0.001	U	0.0009	U
4-Methyl-2-pentanone	mg/Kg	--	0.003	U	0.00089	U	0.0008	U	0.00077	U	0.0014	U	0.00078	U	0.00082	U	4.4	U	0.005	U	0.00095	U	0.00086	U
Acetone	mg/Kg	--	0.023	U	0.0068	U	0.0061	U	0.0059	U	0.048		0.029		0.0063	U	6.1	U	0.046	J	0.012	J	0.0066	U
Benzene	mg/Kg	5	0.0031	U	0.00092	U	0.00083	U	0.0015	J	0.0056	J	0.011		0.00084	U	5.3	U	0.016	J	0.0019	J	0.00088	U
Bromodichloromethane	mg/Kg	3	0.0026	U	0.00076	U	0.00069	U	0.00067	U	0.0012	U	0.00067	U	0.0007	U	5	U	0.0043	U	0.00082	U	0.00074	U
Bromoform	mg/Kg	280	0.002	U	0.0006	U	0.00054	U	0.00052	U	0.00097	U	0.00053	U	0.00055	U	5.2	U	0.0034	U	0.00065	U	0.00058	U
Bromomethane	mg/Kg	59	0.0034	U	0.001	U	0.00091	U	0.00088	U	0.0016	U	0.00088	U	0.00092	U	6.5	U	0.0057	U	0.0011	U	0.00097	U
Carbon disulfide	mg/Kg	110000	0.0024	U	0.0007	U	0.00063	U	0.00061	U	0.0011	U	0.00061	U	0.00064	U	6.3	U	0.0039	U	0.00075	U	0.00067	U
Carbon tetrachloride	mg/Kg	2	0.0021	U	0.00061	U	0.00055	U	0.00053	U	0.00098	U	0.00053	U	0.00056	U	4.6	U	0.0034	U	0.00065	U	0.00058	U
Chlorobenzene	mg/Kg	7400	0.0035	U	0.001	U	0.00093	U	0.0009	U	0.0017	U	0.0009	U	0.00095	U	5.7	U	0.0058	U	0.0048	J	0.00099	U
Chloroethane	mg/Kg	1100	0.0072	U	0.0021	U	0.0019	U	0.0018	U	0.0034	U	0.0018	U	0.0019	U	7.3	U	0.012	U	0.0023	U	0.002	U
Chloroform	mg/Kg	2	0.0027	U	0.00079	U	0.00072	U	0.00069	U	0.0013	U	0.0007	U	0.00073	U	5.4	U	0.0045	U	0.00086	U	0.00077	U
Chloromethane	mg/Kg	12	0.0039	U	0.0012	U	0.001	U	0.001	U	0.0019	U	0.001	U	0.0011	U	5.7	U	0.0065	U	0.0012	U	0.0011	U
cis-1,2-Dichloroethene	mg/Kg	560	0.0032	U	0.00096	U	0.00086	U	0.00083	U	0.0015	U	0.00084	U	0.00088	U	5.5	U	0.0054	U	0.001	U	0.00092	U
cis-1,3-Dichloropropene	mg/Kg	7	0.0031	U	0.00092	U	0.00083	U	0.0008	U	0.0015	U	0.00081	U	0.00085	U	4.6	U	0.0052	U	0.00099	U	0.00089	U
Cyclohexane	mg/Kg	--	0.0017	U	0.0005	U	0.00046	U	0.00044	U	0.00081	U	0.00044	U	0.00046	U	5.1	U	0.0029	U	0.00054	U	0.00049	U
Dibromochloromethane	mg/Kg	--	0.0033	U	0.00096	U	0.00087	U	0.00084	U	0.0016	U	0.00085	U	0.00089	U	4.7	U	0.0055	U	0.001	U	0.00093	U
Dibromochloropropane	mg/Kg	8	0.0035	U	0.001	U	0.00092	U	0.00089	U	0.0016	U	0.00089	U	0.00094	U	4.3	U	0.0058	U	0.0011	U	0.00098	U
Dichlorodifluoromethane	mg/Kg	230000	0.0031	U	0.0009	U	0.00082	U	0.00079	U	0.0015	U	0.00079	U	0.00083	U	6.5	U	0.0051	U	0.00097	U	0.00087	U
Ethylbenzene	mg/Kg	110000	0.003	U	0.00087	U	0.00079	U	0.00076	U	0.0014	U	0.00077	U	0.0008	U	6	U	0.0049	U	0.0015	J	0.00084	U
Isopropylbenzene	mg/Kg	--	0.0031	U	0.00092	U	0.00083	U	0.00081	U	0.0015	U	0.00081	U	0.00085	U	5.5	U	0.0052	U	0.00099	U	0.00089	U
Methyl acetate	mg/Kg	--	0.0042	U	0.0012	U	0.0011	U	0.0011	U	0.002	U	0.0011	U	0.0011	U	5.4	U	0.0069	U	0.0013	U	0.0012	U
Methylcyclohexane	mg/Kg	--	0.0033	U	0.00099	U	0.00089	U	0.00086	U	0.0016	U	0.00087	U	0.00091	U	5.7	U	0.0056	U	0.0011	U	0.00095	U
Methylene chloride	mg/Kg	97	0.0031	U	0.00091	U	0.0027	J	0.0008	U	0.0024	J	0.0008	U	0.00095	J	3.9	U	0.0054	J	0.001	J	0.00088	U
Methyltert-butylether	mg/Kg	320	0.0035	U	0.001	U	0.00092	U	0.00089	U	0.0016	U	0.00089	U	0.00093	U	4.7	U	0.0057	U	0.0011	U	0.00098	U
Styrene	mg/Kg	260	0.0025	U	0.00072	U	0.00065	U	0.00063	U	0.0012	U	0.00063	U	0.00066	U	5.7	U	0.0041	U	0.00078	U	0.0007	U
Tetrachloroethene	mg/Kg	5	0.0031	U	0.00092	U	0.00083	U	0.00081	U	0.0015	U	0.00081	U	0.00085	U	6.6	U	0.0052	U	0.001	U	0.00089	U
Toluene	mg/Kg	91000	0.0034	U	0.00099	U	0.00089	U	0.00087	U	0.0056	J	0.00087	U	0.00091	U	4	U	0.016	J	0.0029	J	0.00096	U
trans-1,2-Dichloroethene	mg/Kg	720	0.0028	U	0.00081	U	0.00073	U	0.00071	U	0.0013	U	0.00071	U	0.00075	U	5.9	U	0.0046	U	0.00087	U	0.00078	U
trans-1,3-Dichloropropene	mg/Kg	7	0.0028	U	0.00081	U	0.00073	U	0.00071	U	0.0013	U	0.00071	U	0.00075	U	4.4	U	0.0046	U	0.00087	U	0.00078	U
Trichloroethene	mg/Kg	20	0.003	U	0.00089	U	0.00081	U	0.00078	U	0.0014	U	0.00079	U	0.00082	U	5.7	U	0.0051	U	0.0034	J	0.00086	U
Trichlorofluoromethane	mg/Kg	340000	0.0042	U	0.0012	U	0.0011	U	0.0011	U	0.002	U	0.0011	U	0.0011	U	8.3	U	0.0071	U	0.0013	U	0.0012	U
Vinyl chloride	mg/Kg	2	0.0022	U	0.00064	U	0.00058	U	0.00056	U	0.001	U	0.00056	U	0.00059	U	5.7	U	0.0036	U	0.00069	U	0.00062	U
Xylene (total)	mg/Kg	170000	0.01	U	0.003	U	0.0027	U	0.0027	U	0.0063	J	0.0027	U	0.0028	U	18	U	0.017	U	0.0091	J	0.0029	U

TABLE 4-4

ANALYTICAL RESULTS
BARRIER WALL ALIGNMENT SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	BW-01 05/19/08 Fill Primary		BW-01 05/19/08 Mat Primary		BW-01 05/19/08 Sand Primary		BW-02 05/15/08 Fill Primary		BW-02 05/15/08 Mat Primary		BW-02 05/15/08 Sand Primary		BW-02 05/15/08 Clay Primary		BW-03 05/14/08 Fill Primary		BW-03 05/14/08 Mat Primary		BW-03 05/14/08 Sand Primary		BW-03 05/14/08 Clay Primary	
		Sample Depth	**0.0-7.0 ft**		**10.0-16.0 ft**		**18.0-21.0 ft**		**0.0-9.75 ft**		**10.0-12.0 ft**		**16.5-21.7 ft**		**24.0-26.0 ft**		**0.0-6.25 ft**		**10.0-12.0 ft**		**16.0-18.0 ft**		**22.0-24.0 ft**	
		VOC Sample Depth	**6.5-7.5 ft**		**11.0-12.0 ft**		**19.0-20.0 ft**		**9.0-9.75 ft**		**10.0-11.0 ft**		**21.0-21.7 ft**		**25.0-26.0 ft**		**6.0-6.25 ft**		**11.0-12.0 ft**		**17.0-18.0 ft**		**23.0-24.0 ft**	
Semivolatile Organics																								
1,1'-Biphenyl	mg/Kg	34000	0.025	U	0.092	U	0.021	U	0.044	J	0.028	U	0.089	U	0.023	U	4.6	J	4.3	U	0.69	J	0.023	U
2,2'-oxybis(1-chloropropane)	mg/Kg	--	0.027	U	0.1	U	0.023	U	0.025	U	0.031	U	0.097	U	0.025	U	3	U	4.7	U	0.64	U	0.025	U
2,4,5-Trichlorophenol	mg/Kg	68000	0.037	U	0.14	U	0.032	U	0.035	U	0.042	U	0.13	U	0.035	U	4.1	U	6.5	U	0.89	U	0.034	U
2,4,6-Trichlorophenol	mg/Kg	74	0.036	U	0.14	U	0.031	U	0.034	U	0.041	U	0.13	U	0.034	U	4	U	6.3	U	0.87	U	0.034	U
2,4-Dichlorophenol	mg/Kg	2100	0.013	U	0.05	U	0.011	U	0.012	U	0.015	U	0.048	U	0.013	U	1.5	U	2.3	U	0.32	U	0.012	U
2,4-Dimethylphenol	mg/Kg	14000	0.019	U	0.072	U	0.9		0.018	U	0.77		4.8		0.018	U	2.2	U	280		5.4	J	0.018	U
2,4-Dinitrophenol	mg/Kg	1400	0.53	U	2	U	0.45	U	0.5	U	0.6	U	1.9	U	0.5	U	59	U	93	U	13	U	0.49	U
2,4-Dinitrotoluene	mg/Kg	3	0.023	U	0.087	U	0.02	U	0.022	U	0.026	U	0.084	U	0.022	U	2.6	U	4.1	U	0.55	U	0.022	U
2,6-Dinitrotoluene	mg/Kg	3	0.029	U	0.11	U	0.025	U	0.027	U	0.033	U	0.1	U	0.027	U	3.2	U	5.1	U	0.69	U	0.027	U
2-Chloronaphthalene	mg/Kg	--	0.026	U	0.097	U	0.022	U	0.024	U	0.03	U	0.094	U	0.024	U	2.9	U	4.5	U	0.62	U	0.024	U
2-Chlorophenol	mg/Kg	2200	0.023	U	0.084	U	0.019	U	0.021	U	0.026	U	0.082	U	0.021	U	2.5	U	3.9	U	0.54	U	0.021	U
2-Methylnaphthalene	mg/Kg	2400	0.025	U	0.093	U	0.021	U	0.27	J	0.056	J	0.09	U	0.023	U	35	J	16	J	5.3	J	0.023	U
2-Methylphenol	mg/Kg	3400	0.028	U	0.1	U	2.4		0.031	J	0.032	U	6.2		0.026	U	3.1	U	180		3.2	J	0.026	U
2-Nitroaniline	mg/Kg	23000	0.027	U	0.1	U	0.023	U	0.025	U	0.031	U	0.098	U	0.025	U	3	U	4.7	U	0.65	U	0.025	U
2-Nitrophenol	mg/Kg	--	0.036	U	0.13	U	0.03	U	0.033	U	0.041	U	0.13	U	0.033	U	4	U	6.2	U	0.85	U	0.033	U
3,3'-Dichlorobenzidine	mg/Kg	4	0.1	U	0.38	U	0.086	U	0.094	U	0.12	U	0.37	U	0.094	U	11	U	18	U	2.4	U	0.094	U
3-Nitroaniline	mg/Kg	--	0.039	U	0.14	U	0.033	U	0.036	U	0.044	U	0.14	U	0.036	U	4.3	U	6.7	U	0.92	U	0.036	U
4,6-Dinitro-2-methylphenol	mg/Kg	68	0.32	U	1.2	U	0.27	U	0.3	U	0.36	U	1.1	U	0.3	U	35	U	55	U	7.6	U	0.29	U
4-Bromophenylphenyl ether	mg/Kg	--	0.02	U	0.075	U	0.017	U	0.019	U	0.023	U	0.073	U	0.019	U	2.3	U	3.5	U	0.48	U	0.019	U
4-Chloro-3-methylphenol	mg/Kg	--	0.027	U	0.1	U	0.023	U	0.026	U	0.031	U	0.099	U	0.026	U	3.1	U	4.8	U	0.65	U	0.025	U
4-Chloroaniline	mg/Kg	--	0.022	U	0.083	U	0.019	U	0.021	U	0.025	U	0.08	U	0.021	U	2.5	U	3.9	U	0.53	U	0.021	U
4-Chlorophenyl phenyl ether	mg/Kg	--	0.039	U	0.14	U	0.033	U	0.036	U	0.044	U	0.14	U	0.036	U	4.3	U	6.8	U	0.92	U	0.036	U
4-Methylphenol	mg/Kg	340	0.028	U	0.1	U	11		0.08	J	0.032	U	29		0.026	U	8.8	J	**490**		13		0.026	U
4-Nitroaniline	mg/Kg	--	0.019	U	0.07	U	0.016	U	0.018	U	0.022	U	0.068	U	0.018	U	2.1	U	3.3	U	0.45	U	0.018	U
4-Nitrophenol	mg/Kg	--	0.035	U	0.13	U	0.03	U	0.033	U	0.04	U	0.13	U	0.033	U	3.9	U	6.1	U	0.84	U	0.032	U
Acenaphthene	mg/Kg	37000	0.023	U	0.087	U	0.02	U	0.12	J	0.027	U	0.084	U	0.022	U	11	J	4.1	U	2.3	J	0.022	U
Acenaphthylene	mg/Kg	300000	0.026	U	0.097	U	0.022	U	0.044	J	0.03	U	0.094	U	0.024	U	2.9	U	4.6	U	0.62	U	0.024	U
Acetophenone	mg/Kg	5	0.027	U	0.1	U	0.023	U	0.025	U	0.031	U	0.099	U	0.025	U	3	U	4.8	U	0.65	U	0.025	U
Anthracene	mg/Kg	30000	0.046	J	0.095	U	0.022	U	0.1	J	0.029	U	0.092	U	0.024	U	5.9	J	4.6	J	1.5	J	0.024	U
Atrazine	mg/Kg	2400	0.031	U	0.12	U	0.026	U	0.029	U	0.035	U	0.11	U	0.029	U	3.5	U	5.4	U	0.74	U	0.029	U
Benzaldehyde	mg/Kg	68000	0.048	U	0.18	U	0.041	U	0.044	U	0.054	U	0.17	U	0.045	U	5.3	U	8.3	U	1.1	U	0.044	U
Benzo(a)anthracene	mg/Kg	2	0.19	J	0.066	U	0.015	U	0.14	J	0.02	U	0.064	U	0.017	U	2	U	3.1	U	0.42	U	0.016	U
Benzo(a)pyrene	mg/Kg	0.2	0.19	J	0.052	U	0.012	U	0.14	J	0.016	U	0.05	U	0.013	U	**1.5**	J	2.4	U	0.33	U	0.013	U
Benzo(b)fluoranthene	mg/Kg	2	0.31	J	0.064	U	0.015	U	0.22	J	0.02	U	0.062	U	0.016	U	**2.3**	J	3	U	0.41	U	0.016	U
Benzo(ghi)perylene	mg/Kg	30000	0.13	J	0.057	U	0.013	U	0.11	J	0.017	U	0.055	U	0.014	U	1.7	U	2.7	U	0.37	U	0.014	U
Benzo(k)fluoranthene	mg/Kg	23	0.014	U	0.054	U	0.012	U	0.013	U	0.016	U	0.052	U	0.013	U	1.6	U	2.5	U	0.34	U	0.013	U
Bis(2-chloroethoxy)methane	mg/Kg	--	0.021	U	0.078	U	0.018	U	0.02	U	0.024	U	0.076	U	0.02	U	2.3	U	3.7	U	0.5	U	0.019	U
Bis(2-chloroethyl)ether	mg/Kg	2	0.01	U	0.038	U	0.0086	U	0.0094	U	0.012	U	0.037	U	0.0094	U	1.1	U	1.8	U	0.24	U	0.0094	U
Bis(2-ethylhexyl)phthalate	mg/Kg	140	0.035	U	0.13	U	0.029	U	0.032	U	0.039	U	0.12	U	0.032	U	3.8	U	6	U	0.82	U	0.032	U
Butyl benzyl phthalate	mg/Kg	14000	0.036	U	0.13	U	0.031	U	0.034	U	0.041	U	0.13	U	0.034	U	4	U	6.3	U	0.86	U	0.033	U
Caprolactam	mg/Kg	340000	0.085	U	0.32	U	0.072	U	0.079	U	0.097	U	0.31	U	0.079	U	9.5	U	15	U	2	U	0.079	U
Carbazole	mg/Kg	96	0.025	J	0.069	U	0.016	U	0.088	J	0.021	U	0.067	U	0.017	U	7	J	4.7	J	1.2	J	0.017	U
Chrysene	mg/Kg	230	0.19	J	0.066	U	0.015	U	0.14	J	0.02	U	0.064	U	0.017	U	2	U	3.1	U	0.43	U	0.017	U
Dibenzo(a,h)anthracene	mg/Kg	0.2	0.036	J	0.11	U	0.024	U	0.027	U	0.032	U	0.1	U	0.027	U	3.2	U	5	U	0.68	U	0.026	U
Dibenzofuran	mg/Kg	--	0.025	U	0.092	U	0.021	U	0.13	J	0.028	U	0.09	U	0.023	U	14	J	4.8	J	1.6	J	0.023	U
Diethyl phthalate	mg/Kg	550000	0.04	U	0.15	U	0.034	U	0.037	U	0.046	U	0.14	U	0.037	U	4.5	U	7	U	0.96	U	0.037	U
Dimethyl phthalate	mg/Kg	--	0.025	U	0.095	U	0.022	U	0.024	U	0.029	U	0.092	U	0.024	U	2.8	U	4.4	U	0.61	U	0.024	U
Di-n-butyl phthalate	mg/Kg	68000	0.075	U	0.28	U	0.063	U	0.069	U	0.085	U	0.27	U	0.07	U	8.3	U	13	U	1.8	U	0.069	U
Di-n-octyl phthalate	mg/Kg	27000	0.031	U	0.12	U	0.027	U	0.029	U	0.036	U	0.11	U	0.029	U	3.5	U	5.5	U	0.75	U	0.029	U

TABLE 4-4

ANALYTICAL RESULTS
BARRIER WALL ALIGNMENT SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	BW-01 05/19/08 Fill Primary		BW-01 05/19/08 Mat Primary		BW-01 05/19/08 Sand Primary		BW-02 05/15/08 Fill Primary		BW-02 05/15/08 Mat Primary		BW-02 05/15/08 Sand Primary		BW-02 05/15/08 Clay Primary		BW-03 05/14/08 Fill Primary		BW-03 05/14/08 Mat Primary		BW-03 05/14/08 Sand Primary		BW-03 05/14/08 Clay Primary	
		Sample Depth	**0.0-7.0 ft**		**10.0-16.0 ft**		**18.0-21.0 ft**		**0.0-9.75 ft**		**10.0-12.0 ft**		**16.5-21.7 ft**		**24.0-26.0 ft**		**0.0-6.25 ft**		**10.0-12.0 ft**		**16.0-18.0 ft**		**22.0-24.0 ft**	
		VOC Sample Depth	**6.5-7.5 ft**		**11.0-12.0 ft**		**19.0-20.0 ft**		**9.0-9.75 ft**		**10.0-11.0 ft**		**21.0-21.7 ft**		**25.0-26.0 ft**		**6.0-6.25 ft**		**11.0-12.0 ft**		**17.0-18.0 ft**		**23.0-24.0 ft**	
Semivolatile Organics (Continued)																								
Fluoranthene	mg/Kg	24000	0.38	J	0.11	U	0.025	U	0.41	J	0.033	U	0.1	U	0.027	U	4.8	J	5.1	U	0.69	U	0.027	U
Fluorene	mg/Kg	24000	0.022	U	0.081	U	0.019	U	0.16	J	0.025	U	0.079	U	0.02	U	8.2	J	3.8	U	1.2	J	0.02	U
Hexachlorobenzene	mg/Kg	1	0.027	U	0.1	U	0.023	U	0.025	U	0.031	U	0.098	U	0.025	U	3	U	4.7	U	0.65	U	0.025	U
Hexachlorobutadiene	mg/Kg	25	0.028	U	0.1	U	0.023	U	0.026	U	0.031	U	0.099	U	0.026	U	3.1	U	4.8	U	0.66	U	0.025	U
Hexachlorocyclopentadiene	mg/Kg	110	0.021	U	0.077	U	0.018	U	0.019	U	0.024	U	0.075	U	0.019	U	2.3	U	3.6	U	0.49	U	0.019	U
Hexachloroethane	mg/Kg	140	0.02	U	0.075	U	0.017	U	0.019	U	0.023	U	0.073	U	0.019	U	2.2	U	3.5	U	0.48	U	0.019	U
Indeno(1,2,3-cd)pyrene	mg/Kg	2	0.11	J	0.059	U	0.014	U	0.074	J	0.018	U	0.058	U	0.015	U	1.8	U	2.8	U	0.38	U	0.015	U
Isophorone	mg/Kg	2000	0.025	U	0.093	U	0.021	U	0.023	U	0.028	U	0.09	U	0.023	U	2.8	U	4.4	U	0.6	U	0.023	U
Naphthalene	mg/Kg	17	0.91		0.6	J	0.019	U	3.4		1.9		0.079	U	0.02	U	**2000**		**2000**		**270**		0.02	U
Nitrobenzene	mg/Kg	340	0.011	U	0.042	U	0.0095	U	0.01	U	0.013	U	0.04	U	0.01	U	1.2	U	2	U	0.27	U	0.01	U
N-Nitrosodiphenylamine	mg/Kg	390	0.024	U	0.091	U	0.021	U	0.023	U	0.028	U	0.088	U	0.023	U	2.7	U	4.3	U	0.58	U	0.023	U
N-Nitrosodipropylamine	mg/Kg	0.3	0.011	U	0.041	U	0.0094	U	0.01	U	0.013	U	0.04	U	0.01	U	1.2	U	1.9	U	0.26	U	0.01	U
Pentachlorophenol	mg/Kg	10	0.034	U	0.12	U	0.028	U	0.031	U	0.038	U	0.12	U	0.031	U	3.7	U	5.8	U	0.8	U	0.031	U
Phenanthrene	mg/Kg	300000	0.31	J	0.08	U	0.018	U	0.51		0.041	J	0.078	U	0.02	U	18	J	8	J	2.3	J	0.02	U
Phenol	mg/Kg	210000	0.027	U	0.1	U	51		0.025	U	0.031	U	20		0.025	U	3	U	65	J	5.2	J	0.025	U
Pyrene	mg/Kg	18000	0.34	J	0.1	U	0.023	U	0.31	J	0.031	U	0.099	U	0.026	U	3.1	U	4.8	U	0.66	U	0.025	U
Polychlorinated Dioxins/Furans																								
1,2,3,4,6,7,8-HpCDD	ug/Kg	--	0.0089		0.0011	QJ	0.00035	J	0.0042	J	0.0037	J	0.0002	QJ	--		0.059		0.012	Q	0.0065	U	--	
1,2,3,4,6,7,8-HpCDF	ug/Kg	--	1.5		0.023	J	0.013		0.025		0.00053	QJ	0.002	J	--		0.98		0.23		0.012		--	
1,2,3,4,7,8,9-HpCDF	ug/Kg	--	0.055		0.0017	J	0.00041	QJ	0.00079	J	0.0077	U	0.0061	U	--		0.035		0.0086	Q	0.0065	U	--	
1,2,3,4,7,8-HxCDD	ug/Kg	--	0.00079	J	0.025	U	0.0058	U	0.0063	U	0.0077	U	0.0061	U	--		0.0039	J	0.032	U	0.0065	U	--	
1,2,3,4,7,8-HxCDF	ug/Kg	--	0.55		0.0084	J	0.0043	J	0.0091	Q	0.0077	U	0.00056	J	--		0.35	Q	0.11	Q	0.0051	J	--	
1,2,3,6,7,8-HxCDD	ug/Kg	--	0.0025	J	0.025	U	0.0058	U	0.0063	U	0.0077	U	0.0061	U	--		0.013		0.032	U	0.0065	U	--	
1,2,3,6,7,8-HxCDF	ug/Kg	--	0.1	Q	0.0015	QJ	0.00064	QJ	0.0013	J	0.0077	U	0.00019	J	--		0.046		0.015	Q	0.00069	QJ	--	
1,2,3,7,8,9-HxCDD	ug/Kg	--	0.001	J	0.025	U	0.0058	U	0.0063	U	0.0077	U	0.0061	U	--		0.0062	J	0.032	U	0.0065	U	--	
1,2,3,7,8,9-HxCDF	ug/Kg	--	0.00088	Q	0.025	U	0.0058	U	0.0063	U	0.0077	U	0.0061	U	--		0.01	U	0.032	U	0.0065	U	--	
1,2,3,7,8-PCDD	ug/Kg	--	0.0011	QJ	0.025	U	0.0058	U	0.0063	U	0.0077	U	0.0061	U	--		0.0057	J	0.032	U	0.0065	U	--	
1,2,3,7,8-PCDF	ug/Kg	--	0.014		0.025	U	0.0058	U	0.00029	J	0.0077	U	0.0061	U	--		0.0068	J	0.0018	Q	0.0065	U	--	
2,3,4,6,7,8-HxCDF	ug/Kg	--	0.028		0.00068	QJ	0.00023	J	0.00044	QJ	0.0077	U	0.0061	U	--		0.017		0.0047	J	0.0065	U	--	
2,3,4,7,8-PCDF	ug/Kg	--	0.046		0.00083	QJ	0.00022	QJ	0.00077	J	0.0077	U	0.0061	U	--		0.039	Q	0.011	J	0.00055	QJ	--	
2,3,7,8-TCDD	ug/Kg	--	0.00016	QJ	0.0051	U	0.0012	U	0.0013		0.0015	U	0.0012	U	--		0.00093	QJ	0.0065	U	0.0013	U	--	
2,3,7,8-TCDF	ug/Kg	--	0.003	Q	0.0014	QJ	0.00027	QJ	0.00054	QJ	0.00016	QJ	0.0012	U	--		0.0061		0.004	Q	0.00074	QJ	--	
OCDD	ug/Kg	--	0.16		0.027	J	0.0042	J	0.13		0.13		0.0019	J	--		3.5	B	0.34	B	0.014	B	--	
OCDF	ug/Kg	--	3.3		0.066		0.029		0.048		0.00092	J	0.009	J	--		1.5		0.28		0.016		--	
Total HpCDD	ug/Kg	--	0.022		0.004	QJ	0.001	QJ	0.031		0.012		0.00061	QJ	--		0.13		0.028	J	0.0015	QJ	--	
Total HpCDF	ug/Kg	--	1.7	Q	0.03	QJ	0.016	Q	0.03	Q	0.00053	QJ	0.0023	QJ	--		1.2		0.28	Q	0.013	Q	--	
Total HxCDD	ug/Kg	--	0.016	J	0.025	U	0.0015	QJ	0.0027	QJ	0.0028	J	0.00048	QJ	--		0.077	Q	0.012	Q	0.0019	QJ	--	
Total HxCDF	ug/Kg	--	1.3	Q	0.019	QJ	0.009	QJ	0.02	Q	0.00025	J	0.0013	J	--		0.78	Q	0.24	Q	0.011	QJ	--	
Total PeCDD	ug/Kg	--	0.013	QJ	0.025	U	0.0014	QJ	0.00026	J	0.00043	QJ	0.00034	J	--		0.23	Q	0.03	Q	0.0024	QJ	--	
Total PeCDF	ug/Kg	--	0.55	Q	0.005	QJ	0.0029	QJ	0.012	QJ	0.00026	J	0.0061	U	--		0.43	Q	0.12	J	0.0033	QJ	--	
Total TCDD	ug/Kg	--	0.012	Q	0.0028	QJ	0.00079	QJ	0.0024	Q	0.00096	QJ	0.0012	U	--		0.068	Q	0.028	Q	0.0027	Q	--	
Total TCDF	ug/Kg	--	0.23	Q	0.0047	QJ	0.001	QJ	0.0081	Q	0.002	QJ	0.0012	U	--		0.3	Q	0.063	Q	0.0014	QJ	--	
Polychlorinated Dioxins/Furans (2,3,7,8 Equivalents)																								
1,2,3,4,6,7,8-HpCDD	0.01	--	8.90E-05		--		3.50E-06		4.20E-05		3.70E-05		--		--		5.90E-04		--		--		--	
1,2,3,4,6,7,8-HpCDF	0.01	--	1.50E-02		2.30E-04		1.30E-04		2.50E-04		--		2.00E-05		--		9.80E-03		2.30E-03		1.20E-04		--	
1,2,3,4,7,8,9-HpCDF	0.01	--	5.50E-04		1.70E-05		--		7.90E-06		--		--		--		3.50E-04		--		--		--	
1,2,3,4,7,8-HxCDD	0.10	--	7.90E-05		--		--		--		--		--		--		3.90E-04		--		--		--	
1,2,3,4,7,8-HxCDF	0.10	--	5.50E-02		8.40E-04		4.30E-04		--		--		5.60E-05		--		--		--		5.10E-04		--	
1,2,3,6,7,8-HxCDD	0.10	--	2.50E-04		--		--		--		--		--		--		1.30E-03		--		--		--	

TABLE 4-4

ANALYTICAL RESULTS
BARRIER WALL ALIGNMENT SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	BW-01 05/19/08 Fill Primary		BW-01 05/19/08 Mat Primary		BW-01 05/19/08 Sand Primary		BW-02 05/15/08 Fill Primary		BW-02 05/15/08 Mat Primary		BW-02 05/15/08 Sand Primary		BW-02 05/15/08 Clay Primary		BW-03 05/14/08 Fill Primary		BW-03 05/14/08 Mat Primary		BW-03 05/14/08 Sand Primary		BW-03 05/14/08 Clay Primary	
		Sample Depth	**0.0-7.0 ft**		**10.0-16.0 ft**		**18.0-21.0 ft**		**0.0-9.75 ft**		**10.0-12.0 ft**		**16.5-21.7 ft**		**24.0-26.0 ft**		**0.0-6.25 ft**		**10.0-12.0 ft**		**16.0-18.0 ft**		**22.0-24.0 ft**	
		VOC Sample Depth	**6.5-7.5 ft**		**11.0-12.0 ft**		**19.0-20.0 ft**		**9.0-9.75 ft**		**10.0-11.0 ft**		**21.0-21.7 ft**		**25.0-26.0 ft**		**6.0-6.25 ft**		**11.0-12.0 ft**		**17.0-18.0 ft**		**23.0-24.0 ft**	
Polychlorinated Dioxins/Furans (2,3,7,8 Equivalents) (Continued)																								
1,2,3,6,7,8-HxCDF	0.10	--	--		--		--		1.30E-04		--		1.90E-05		--		4.60E-03		--		--		--	
1,2,3,7,8,9-HxCDD	0.10	--	1.00E-04		--		--		--		--		--		--		6.20E-04		--		--		--	
1,2,3,7,8,9-HxCDF	0.10	--	--		--		--		--		--		--		--		--		--		--		--	
1,2,3,7,8-PCDD	1.00	--	--		--		--		--		--		--		--		5.70E-03		--		--		--	
1,2,3,7,8-PCDF	0.05	--	7.00E-04		--		--		1.45E-05		--		--		--		3.40E-04		--		--		--	
2,3,4,6,7,8-HxCDF	0.10	--	2.80E-03		--		2.30E-05		--		--		--		--		1.70E-03		4.70E-04		--		--	
2,3,4,7,8-PCDF	0.50	--	2.30E-02		--		--		3.85E-04		--		--		--		--		5.50E-03		--		--	
2,3,7,8-TCDD	1.00	--	--		--		--		1.30E-03		--		--		--		--		--		--		--	
2,3,7,8-TCDF	0.10	--	--		--		--		--		--		--		--		6.10E-04		--		--		--	
OCDD	0.0001	--	1.60E-05		2.70E-06		4.20E-07		1.30E-05		1.30E-05		1.90E-07		--		3.50E-04		3.40E-05		1.40E-06		--	
OCDF	0.0001	--	3.30E-04		6.60E-06		2.90E-06		4.80E-06		9.20E-08		9.00E-07		--		1.50E-04		2.80E-05		1.60E-06		--	
Total 2,3,7,8-TCDD Equivalents[2]	ug/Kg	1	9.79E-02		1.10E-03		5.90E-04		2.15E-03		5.01E-05		9.61E-05		--		2.65E-02		8.33E-03		6.33E-04		--	
Polychlorinated Biphenyls (Aroclors)																								
Aroclor 1016	mg/Kg	1	0.0034	U	0.012	U	0.0029	U	0.0031	U	0.0038	U	0.003	U	--		0.0038	U	0.012	U	0.0032	U	--	
Aroclor 1221	mg/Kg	1	0.0043	U	0.016	U	0.0037	U	0.004	U	0.0049	U	0.0039	U	--		0.0048	U	0.015	U	0.0041	U	--	
Aroclor 1232	mg/Kg	1	0.0039	U	0.014	U	0.0033	U	0.0036	U	0.0044	U	0.0035	U	--		0.0043	U	0.014	U	0.0037	U	--	
Aroclor 1242	mg/Kg	1	0.0037	U	0.014	U	0.0032	U	0.0034	U	0.0042	U	0.0033	U	--		0.0041	U	0.013	U	0.0035	U	--	
Aroclor 1248	mg/Kg	1	0.0021	U	0.0079	U	0.0018	U	0.002	U	0.0024	U	0.0019	U	--		0.052		0.0076	U	0.002	U	--	
Aroclor 1254	mg/Kg	1	0.0032	U	0.012	U	0.0028	U	0.003	U	0.0037	U	0.0029	U	--		0.0036	U	0.011	U	0.003	U	--	
Aroclor 1260	mg/Kg	1	0.0032	U	0.012	U	0.0028	U	0.003	U	0.0037	U	0.0029	U	--		0.022	JP	0.011	U	0.003	U	--	
Aroclor 1262	mg/Kg	1	0.005	U	0.018	U	0.0042	U	0.0046	U	0.0056	U	0.0044	U	--		0.0055	U	0.018	U	0.0047	U	--	
Aroclor 1268	mg/Kg	1	0.0029	U	0.011	U	0.0025	U	0.0027	U	0.0033	U	0.0026	U	--		0.0032	U	0.01	U	0.0027	U	--	
Metals																								
Aluminum	mg/Kg	--	18200		2990		3700		16000		11900		3110		10100		27600	J	10800	J	839	J	8790	J
Antimony	mg/Kg	450	1.2	U	1.1	BJ	0.24	BJ	1.2	U	0.14	U	0.11	U	0.12	U	1.4	U	1.1	B	0.12	U	0.12	U
Arsenic	mg/Kg	19	3.1	U	2.3	B	4.2		2.9	U	**37.2**		1.5		4.5		3.5	U	1.2	B	1	B	4.5	
Barium	mg/Kg	59000	45.9		12	B	23	B	57.1		43		20	B	113		132		15.9	B	19.3	B	29.6	
Beryllium	mg/Kg	140	0.042	U	0.39	B	0.24	B	0.039	U	0.59	B	0.32	B	0.73		0.047	U	0.81	B	0.066	B	0.67	
Cadmium	mg/Kg	78	0.42	B	0.25	B	0.055	U	1.1		0.75	B	0.08	B	0.67		2.1		0.36	B	0.061	U	0.5	B
Calcium	mg/Kg	--	109000		8220		1710		94600		2180		952		4680		239000		16600		2500		3110	
Chromium[3]	mg/Kg	120000	15900		55.7		33.5		14100	J	342	J	20.3	J	18.3	J	25200	J	1070	J	102	J	13.7	J
Chromium (Hexavalent)[3]	mg/Kg	20	**3820**		0.4	U	3.3		**2100**		**50.2**		0.4	U	0.4	U	**2830**		12.4		4.5		0.4	U
Cobalt	mg/Kg	590	55.9		4.2	B	6.1		48.2		6.1	B	2.3	B	10.3		122		7.3	B	1.6	B	10	
Copper	mg/Kg	45000	21.4		6.3	B	28.2		19.8		16		5		22.1		21.4		4.6	B	1.4	B	16.8	
Iron	mg/Kg	--	45500		10600		8560		39300		35300		5930		27700		57200		13700		2050		19800	
Lead	mg/Kg	800	101	J	6.4	J	2.4	J	88.9		19.7		3.7		12.4		110		125		8.8		10.3	
Magnesium	mg/Kg	--	17400		6640		1790		14600		4250		652		7160		37400		3560		299	B	5790	
Manganese	mg/Kg	5900	457		254		71.6		458		270		48.1		557		915	J	166	J	19.3	J	429	J
Mercury	mg/Kg	65	0.12		0.056	B	0.0083	U	0.2		0.054		0.016	B	0.022	B	1.3		3		0.099		0.02	B
Nickel	mg/Kg	23000	175		6.1	B	13		145	J	17.8	J	4.7	BJ	22.4	J	583	J	50.6	J	4.2	BJ	20.2	J
Potassium	mg/Kg	--	515	B	815	B	497	B	751		2050		473	B	1530		292	B	500	B	372	B	1300	
Selenium	mg/Kg	5700	0.39	U	1.5	U	0.33	U	0.36	U	0.98		0.35	U	0.42	B	0.43	U	1.6	B	0.37	U	0.36	U
Silver	mg/Kg	5700	0.2	BJ	0.35	BJ	0.051	BJ	0.23	B	0.11	B	0.045	U	0.14	B	0.46	BJ	0.22	BJ	0.067	BJ	0.19	BJ
Sodium	mg/Kg	--	1080	E	13000		608		882		2150		553	B	1340		956		2920		208	B	1250	
Thallium	mg/Kg	79	6.1		1.6	U	0.37	U	4.5		0.84	B	0.39	U	0.41	U	9.4		1.5	U	0.42	U	0.41	B
Vanadium	mg/Kg	1100	295		11.8	B	14.7		280		29.1		9.5		22.6		513		28.7		4.4	B	16.1	
Zinc	mg/Kg	110000	197		23		24.2		167		68.1		9.5		60		211	J	29.8	J	5	J	55.1	J

TABLE 4-4

ANALYTICAL RESULTS
BARRIER WALL ALIGNMENT SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	BW-01 05/19/08 Fill Primary		BW-01 05/19/08 Mat Primary		BW-01 05/19/08 Sand Primary		BW-02 05/15/08 Fill Primary		BW-02 05/15/08 Mat Primary		BW-02 05/15/08 Sand Primary		BW-02 05/15/08 Clay Primary		BW-03 05/14/08 Fill Primary		BW-03 05/14/08 Mat Primary		BW-03 05/14/08 Sand Primary		BW-03 05/14/08 Clay Primary	
		Sample Depth	**0.0-7.0 ft**		**10.0-16.0 ft**		**18.0-21.0 ft**		**0.0-9.75 ft**		**10.0-12.0 ft**		**16.5-21.7 ft**		**24.0-26.0 ft**		**0.0-6.25 ft**		**10.0-12.0 ft**		**16.0-18.0 ft**		**22.0-24.0 ft**	
		VOC Sample Depth	**6.5-7.5 ft**		**11.0-12.0 ft**		**19.0-20.0 ft**		**9.0-9.75 ft**		**10.0-11.0 ft**		**21.0-21.7 ft**		**25.0-26.0 ft**		**6.0-6.25 ft**		**11.0-12.0 ft**		**17.0-18.0 ft**		**23.0-24.0 ft**	
Toxicity Characteristic Leacing Procedure[4]																								
1,1-Dichloroethene	mg/L	0.7	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	--		0.035	U	0.035	U	0.035	U	--	
1,2-Dichloroethane	mg/L	0.5	0.026	U	0.026	U	0.026	U	0.026	U	0.026	U	0.026	U	--		0.026	U	0.026	U	0.026	U	--	
1,4-Dichlorobenzene	mg/L	7.5	0.0046	U	0.0046	U	0.0046	U	0.0046	U	0.0046	U	0.0046	U	--		0.0046	U	0.0046	U	0.047	J	--	
2,4,5-Trichlorophenol	mg/L	400	0.0041	U	0.0041	U	0.0041	U	0.0041	U	0.0041	U	0.0041	U	--		0.0041	U	0.0041	U	0.0041	U	--	
2,4,6-Trichlorophenol	mg/L	2	0.0026	U	0.0026	U	0.0026	U	0.0026	U	0.0026	U	0.0026	U	--		0.0026	U	0.0026	U	0.0026	U	--	
2,4-Dinitrotoluene	mg/L	0.13	0.0028	U	0.0028	U	0.0028	U	0.0028	U	0.0028	U	0.0028	U	--		0.0028	U	0.0028	U	0.0028	U	--	
2-Butanone	mg/L	200	0.029	U	0.029	U	0.029	U	0.029	U	0.029	U	0.029	U	--		0.029	U	0.029	U	0.029	U	--	
Benzene	mg/L	0.5	0.033	U	0.033	U	0.033	U	0.033	U	0.033	U	0.033	U	--		0.033	U	0.033	U	0.033	U	--	
Carbon Tetrachloride	mg/L	0.5	0.037	U	0.037	U	0.037	U	0.037	U	0.037	U	0.037	U	--		0.037	U	0.037	U	0.037	U	--	
Chlorobenzene	mg/L	100	0.028	U	0.028	U	0.029	J	0.028	U	0.028	U	0.028	U	--		0.028	U	0.028	U	0.028	U	--	
Chloroform	mg/L	6	0.031	U	0.031	U	0.031	U	0.031	U	0.031	U	0.031	U	--		0.031	U	0.031	U	0.031	U	--	
Cresols	mg/L	200	0.0089	U	0.0089	U	1.6		0.0089	U	0.0089	U	0.86		--		0.26		5.6		0.44		--	
Hexachlorobenzene	mg/L	0.13	0.0049	U	0.0049	U	0.0049	U	0.0049	U	0.0049	U	0.0049	U	--		0.0049	U	0.0049	U	0.0049	U	--	
Hexachlorobutadiene	mg/L	0.5	0.0033	U	0.0033	U	0.0033	U	0.0033	U	0.0033	U	0.0033	U	--		0.0033	U	0.0033	U	0.0033	U	--	
Hexachloroethane	mg/L	3	0.0036	U	0.0036	U	0.0036	U	0.0036	U	0.0036	U	0.0036	U	--		0.0036	U	0.0036	U	0.0036	U	--	
Nitrobenzene	mg/L	2	0.0056	U	0.0056	U	0.0056	U	0.0056	U	0.0056	U	0.0056	U	--		0.0056	U	0.0056	U	0.0056	U	--	
Pentachlorophenol	mg/L	100	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	--		0.005	U	0.005	U	0.005	U	--	
Pyridine	mg/L	5	0.011	U	0.011	U	0.011	U	0.011	U	0.011	U	0.011	U	--		0.011	U	0.011	U	0.011	U	--	
Tetrachloroethene	mg/L	0.7	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	--		0.023	U	0.023	U	0.023	U	--	
Trichloroethene	mg/L	0.5	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	--		0.035	U	0.035	U	0.035	U	--	
Vinyl chloride	mg/L	0.2	0.038	U	0.038	U	0.038	U	0.038	U	0.038	U	0.038	U	--		0.038	U	0.038	U	0.038	U	--	
Arsenic	mg/L	5	0.16	B	0.15	B	0.18	B	0.15	B	0.24	B	0.15	B	--		0.18	B	0.17	B	0.15	B	--	
Barium	mg/L	100	0.24	B	0.018	B	0.065	B	0.35	B	0.034	B	0.15	B	--		0.19	BJ	0.088	B	0.15	B	--	
Cadmium	mg/L	1	0.0012	U	0.0012	U	0.0024	B	0.0012	U	0.0012	U	0.0012	U	--		0.0012	U	0.0012	U	0.0012	U	--	
Chromium	mg/L	5	**14.6**		0.019	B	0.16	B	4.8		0.031	B	0.038	B	--		**43.5**	J	0.15	B	0.13	B	--	
Lead	mg/L	5	0.013	U	0.013	U	0.013	U	0.013	U	0.013	U	0.013	U	--		0.013	U	0.034	B	0.023	B	--	
Mercury	mg/L	0.2	0.000055	U	0.000055	U	0.000055	U	0.000055	U	0.000055	U	0.000055	U	--		0.000064	B	0.000055	U	0.000055	U	--	
Selenium	mg/L	1	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	--		0.033	B	0.015	U	0.015	U	--	
Silver	mg/L	5	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0033	B	0.0025	U	--		0.0025	U	0.0025	U	0.0025	U	--	
RCRA Characteristics and Indicators																								
Corrosivity (pH)	SU	2<pH<12.5	**12.51**		7.53		4.12		**12.81**		8.26		4.34		--		12.45		7.55		5.64		--	
Cyanide	mg/Kg	23000	0.43	B	0.48	U	0.11	U	3.4	J	0.39	BJ	0.13	BJ	--		1.8	J	2	B	0.32	BJ	--	
Total Sulfide (Reactivity)	mg/Kg	--	16.7	U	80.8	B	27.9	B	20.2	B	1110		29.4	B	--		18.6	U	767		41.4		--	
Ignitability	None	--	No		No		No		No		--		No		--		No		No		No		--	
Oxidation Reduction Potential	mV	--	312		381		419		288		200		435		422		--		--		--		--	
Percent Solids	%	--	73.6		19.8		85.9		79.2		64.8		81.7		79		66.1		20.9		77.2		78.8	

TABLE 4-4

ANALYTICAL RESULTS
BARRIER WALL ALIGNMENT SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	BW-04 05/08/08 Fill Primary		BW-04 05/08/08 Mat Primary		BW-04 05/08/08 Sand Primary		BW-04 05/09/08 Clay Primary		BW-16 05/05/08 Fill Primary		BW-16 05/05/08 Fill Duplicate		BW-16 05/05/08 Mat Primary		BW-16 05/05/08 Sand Primary		BW-17 07/23/08 Fill Primary		BW-17 07/24/08 Mat Primary		BW-17 07/24/08 Mat Duplicate	
		Sample Depth	**0.0-6.33 ft**		**6.33-8.0 ft**		**14.0-20.0 ft**		**30.0-32.0 ft**		**0.0-11.5 ft**		**0.0-11.5 ft**		**11.5-12.5 ft**		**13.5-19.5 ft**		**0.0-7.25 ft**		**10.0-13.0 ft**		**10.0-13.0 ft**	
		VOC Sample Depth	**6.0-6.33 ft**		**7.0-8.0 ft**		**18.0-19.0 ft**		**31.0-32.0 ft**		**10.0-11.0 ft**		**10.0-11.0 ft**		**11.5-12.5 ft**		**19.0-20.0 ft**		**7.0.0-7.25 ft**		**12.0-13.0 ft**		**12.0-13.0 ft**	
Volatile Organics																								
1,1,1-Trichloroethane	mg/Kg	4200	0.081	U	0.0019	U	2.3	U	0.0014	U	0.001	U	0.0011	U	0.0035	U	0.0011	U	0.00049	U	0.058	U	0.00077	U
1,1,2,2-Tetrachloroethane	mg/Kg	3	0.09	U	0.0021	U	2.6	U	0.0015	U	0.0011	U	0.0013	U	0.0039	U	0.0012	U	0.00072	U	0.064	U	0.0011	U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg	6	0.098	U	0.0022	U	2.8	U	0.0016	U	0.0012	U	0.0014	U	0.0042	U	0.0014	U	0.00083	U	0.061	U	0.0013	U
1,1,2-Trichloroethane	mg/Kg	--	0.085	U	0.0019	U	2.5	U	0.0014	U	0.0011	U	0.0012	U	0.0036	U	0.0012	U	0.0011	U	0.07	U	0.0017	U
1,1-Dichloroethane	mg/Kg	24	0.078	U	0.0018	U	2.2	U	0.0013	U	0.00096	U	0.0011	U	0.0033	U	0.0011	U	0.00058	U	0.055	U	0.00091	U
1,1-Dichloroethene	mg/Kg	150	0.093	U	0.0021	U	2.7	U	0.0016	U	0.0012	U	0.0013	U	0.004	U	0.0013	U	0.00085	U	0.067	U	0.0013	U
1,2,4-Trichlorobenzene	mg/Kg	820	0.082	J	0.0019	U	270		0.0014	U	0.001	U	0.0036	J	0.0035	U	0.0011	U	0.00088	U	0.059	U	0.0014	U
1,2-Dibromoethane	mg/Kg	0.04	0.083	U	0.0019	U	2.4	U	0.0014	U	0.001	U	0.0012	U	0.0035	U	0.0011	U	0.00087	U	0.059	U	0.0014	U
1,2-Dichlorobenzene	mg/Kg	59000	0.088	U	0.002	U	120		0.0015	U	0.0011	U	0.018		0.0037	U	0.013		0.0008	U	0.37		0.033	
1,2-Dichloroethane	mg/Kg	3	0.087	U	0.002	U	2.5	U	0.0015	U	0.0011	U	0.0012	U	0.0037	U	0.0012	U	0.00062	U	0.062	U	0.00097	U
1,2-Dichloropropane	mg/Kg	5	0.088	U	0.002	U	2.6	U	0.0015	U	0.0011	U	0.0012	U	0.0038	U	0.0012	U	0.00054	U	0.063	U	0.00086	U
1,3-Dichlorobenzene	mg/Kg	59000	0.084	U	0.0019	U	39		0.0014	U	0.001	U	0.0052	J	0.0036	U	0.018		0.00066	U	0.27	J	0.025	
1,4-Dichlorobenzene	mg/Kg	13	0.55		0.002	U	**43**		0.0015	U	0.0011	J	0.013		0.0038	U	0.033		0.0011	J	0.49		0.046	
2-Butanone	mg/Kg	44000	0.077	U	0.0018	U	2.2	U	0.0013	U	0.00096	U	0.0011	U	0.0033	U	0.0011	U	0.00088	U	0.055	U	0.0014	U
2-Hexanone	mg/Kg	--	0.063	U	0.0014	U	1.8	U	0.0011	U	0.00078	U	0.00089	U	0.0027	U	0.00087	U	0.00069	U	0.045	U	0.0011	U
4-Methyl-2-pentanone	mg/Kg	--	0.069	U	0.0016	U	2	U	0.0012	U	0.00086	U	0.00097	U	0.003	U	0.00095	U	0.00065	U	0.068	U	0.001	U
Acetone	mg/Kg	--	0.095	U	0.0091	U	2.7	U	0.009	J	0.0049	U	0.006	J	0.017	U	0.0077	J	0.054		0.068	U	0.0079	U
Benzene	mg/Kg	5	0.083	U	0.0035	J	2.4	U	0.0014	U	0.001	U	0.0012	U	0.0035	U	0.0011	U	0.00068	U	0.059	U	0.0011	U
Bromodichloromethane	mg/Kg	3	0.077	U	0.0018	U	2.2	U	0.0013	U	0.00096	U	0.0011	U	0.0033	U	0.0011	U	0.00056	U	0.055	U	0.00088	U
Bromoform	mg/Kg	280	0.081	U	0.0019	U	2.3	U	0.0014	U	0.001	U	0.0011	U	0.0035	U	0.0011	U	0.00044	U	0.058	U	0.0007	U
Bromomethane	mg/Kg	59	0.1	U	0.0023	U	2.9	U	0.0017	U	0.0012	U	0.0014	U	0.0043	U	0.0014	U	0.00074	U	0.072	U	0.0012	U
Carbon disulfide	mg/Kg	110000	0.098	U	0.0022	U	2.8	U	0.0016	U	0.0012	U	0.0014	U	0.0042	U	0.0013	U	0.00051	U	0.07	U	0.00081	U
Carbon tetrachloride	mg/Kg	2	0.071	U	0.0016	U	2.1	U	0.0012	U	0.00088	U	0.001	U	0.003	U	0.00098	U	0.00045	U	0.051	U	0.0007	U
Chlorobenzene	mg/Kg	7400	1.7		0.18		4.8	J	0.0015	U	0.021		0.03		0.019		0.023		0.014		0.13	J	0.015	
Chloroethane	mg/Kg	1100	0.11	U	0.0026	U	3.3	U	0.0019	U	0.0014	U	0.0016	U	0.0049	U	0.0016	U	0.0016	U	0.082	U	0.0024	U
Chloroform	mg/Kg	2	0.084	U	0.0019	U	2.4	U	0.0014	U	0.001	U	0.0012	U	0.0036	U	0.0012	U	0.00059	U	0.06	U	0.00092	U
Chloromethane	mg/Kg	12	0.088	U	0.002	U	2.6	U	0.0015	U	0.0011	U	0.0012	U	0.0038	U	0.0012	U	0.00085	U	0.063	U	0.0013	U
cis-1,2-Dichloroethene	mg/Kg	560	0.086	U	0.002	U	2.5	U	0.0014	U	0.0011	U	0.0012	U	0.0037	U	0.0012	U	0.00071	U	0.061	U	0.0011	U
cis-1,3-Dichloropropene	mg/Kg	7	0.071	U	0.0016	U	2.1	U	0.0012	U	0.00088	U	0.001	U	0.0031	U	0.00099	U	0.00068	U	0.051	U	0.0011	U
Cyclohexane	mg/Kg	--	0.079	U	0.0018	U	2.3	U	0.0013	U	0.00098	U	0.0011	U	0.0034	U	0.0011	U	0.00037	U	0.057	U	0.00059	U
Dibromochloromethane	mg/Kg	--	0.074	U	0.0017	U	2.1	U	0.0012	U	0.00091	U	0.001	U	0.0032	U	0.001	U	0.00071	U	0.053	U	0.0011	U
Dibromochloropropane	mg/Kg	8	0.067	U	0.0015	U	1.9	U	0.0011	U	0.00083	U	0.00094	U	0.0029	U	0.00092	U	0.00075	U	0.048	U	0.0012	U
Dichlorodifluoromethane	mg/Kg	230000	0.1	U	0.0023	U	2.9	U	0.0017	U	0.0013	U	0.0014	U	0.0043	U	0.0014	U	0.00067	U	0.073	U	0.001	U
Ethylbenzene	mg/Kg	110000	0.094	U	0.0022	U	2.7	U	0.0016	U	0.0012	U	0.0013	U	0.004	U	0.0013	U	0.00064	U	0.067	U	0.001	U
Isopropylbenzene	mg/Kg	--	0.085	U	0.002	U	2.5	U	0.0014	U	0.0011	U	0.0012	U	0.0036	U	0.0012	U	0.00068	U	0.061	U	0.0011	U
Methyl acetate	mg/Kg	--	0.084	U	0.0019	U	2.4	U	0.0014	U	0.001	U	0.0012	U	0.0036	U	0.0012	U	0.0009	U	0.06	U	0.0014	U
Methylcyclohexane	mg/Kg	--	0.089	U	0.002	U	2.6	U	0.0015	U	0.0011	U	0.0013	U	0.0038	U	0.0012	U	0.00073	U	0.064	U	0.0011	U
Methylene chloride	mg/Kg	97	0.061	U	0.0014	U	1.8	U	0.0016	J	0.00092	JB	0.0012	J	0.0034	JB	0.0011	JB	0.0013	J	0.044	U	0.0011	U
Methyltert-butylether	mg/Kg	320	0.074	U	0.0017	U	2.1	U	0.0012	U	0.00091	U	0.001	U	0.0031	U	0.001	U	0.00075	U	0.053	U	0.0012	U
Styrene	mg/Kg	260	0.089	U	0.002	U	2.6	U	0.0015	U	0.0011	U	0.0012	U	0.0038	U	0.0012	U	0.00053	U	0.063	U	0.00084	U
Tetrachloroethene	mg/Kg	5	0.1	U	0.0024	U	3	U	0.0017	U	0.0013	U	0.0015	U	0.0044	U	0.0014	U	0.00068	U	0.074	U	0.0011	U
Toluene	mg/Kg	91000	0.063	U	0.0014	U	1.8	U	0.0011	U	0.00078	U	0.00089	U	0.0027	U	0.00087	U	0.00073	U	0.045	U	0.0012	U
trans-1,2-Dichloroethene	mg/Kg	720	0.093	U	0.0021	U	2.7	U	0.0015	U	0.0011	U	0.0013	U	0.004	U	0.0013	U	0.0006	U	0.066	U	0.00094	U
trans-1,3-Dichloropropene	mg/Kg	7	0.069	U	0.0016	U	2	U	0.0012	U	0.00086	U	0.00098	U	0.003	U	0.00096	U	0.0006	U	0.05	U	0.00094	U
Trichloroethene	mg/Kg	20	0.089	U	0.002	U	2.6	U	0.0015	U	0.0011	U	0.0013	U	0.0038	U	0.0012	U	0.00066	U	0.064	U	0.001	U
Trichlorofluoromethane	mg/Kg	340000	0.13	U	0.003	U	3.7	U	0.0022	U	0.0016	U	0.0018	U	0.0055	U	0.0018	U	0.00092	U	0.092	U	0.0014	U
Vinyl chloride	mg/Kg	2	0.089	U	0.002	U	2.6	U	0.0015	U	0.0011	U	0.0013	U	0.0038	U	0.0012	U	0.00047	U	0.063	U	0.00074	U
Xylene (total)	mg/Kg	170000	0.28	U	0.0064	U	8.1	U	0.0047	U	0.0035	U	0.004	U	0.012	U	0.0039	U	0.0022	U	0.2	U	0.0035	U

TABLE 4-4

ANALYTICAL RESULTS
BARRIER WALL ALIGNMENT SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	BW-04 05/08/08 Fill Primary		BW-04 05/08/08 Mat Primary		BW-04 05/08/08 Sand Primary		BW-04 05/09/08 Clay Primary		BW-16 05/05/08 Fill Primary		BW-16 05/05/08 Fill Duplicate		BW-16 05/05/08 Mat Primary		BW-16 05/05/08 Sand Primary		BW-17 07/23/08 Fill Primary		BW-17 07/24/08 Mat Primary		BW-17 07/24/08 Mat Duplicate	
		Sample Depth	**0.0-6.33 ft**		**6.33-8.0 ft**		**14.0-20.0 ft**		**30.0-32.0 ft**		**0.0-11.5 ft**		**0.0-11.5 ft**		**11.5-12.5 ft**		**13.5-19.5 ft**		**0.0-7.25 ft**		**10.0-13.0 ft**		**10.0-13.0 ft**	
		VOC Sample Depth	**6.0-6.33 ft**		**7.0-8.0 ft**		**18.0-19.0 ft**		**31.0-32.0 ft**		**10.0-11.0 ft**		**10.0-11.0 ft**		**11.5-12.5 ft**		**19.0-20.0 ft**		**7.0.0-7.25 ft**		**12.0-13.0 ft**		**12.0-13.0 ft**	
Semivolatile Organics																								
1,1'-Biphenyl	mg/Kg	34000	0.2	J	0.036	U	0.18	J	0.024	U	0.022	U	0.023	U	--		0.021	U	0.021	U	0.044	U	0.033	U
2,2'-oxybis(1-chloropropane)	mg/Kg	--	0.032	U	0.039	U	0.025	U	0.027	U	0.024	U	0.025	U	--		0.023	U	0.022	U	0.047	U	0.036	U
2,4,5-Trichlorophenol	mg/Kg	68000	0.044	U	0.054	U	0.034	U	0.037	U	0.033	U	0.034	U	--		0.032	U	0.031	U	0.065	U	0.049	U
2,4,6-Trichlorophenol	mg/Kg	74	0.043	U	0.053	U	0.034	U	0.036	U	0.032	U	0.033	U	--		0.031	U	0.03	U	0.064	U	0.048	U
2,4-Dichlorophenol	mg/Kg	2100	0.016	U	0.019	U	0.012	U	0.013	U	0.012	U	0.012	U	--		0.012	U	0.011	U	0.024	U	0.018	U
2,4-Dimethylphenol	mg/Kg	14000	0.023	U	0.028	U	0.018	U	0.019	U	0.017	U	0.018	U	--		0.017	U	0.016	U	0.034	U	0.026	U
2,4-Dinitrophenol	mg/Kg	1400	0.63	U	0.77	U	0.49	U	0.53	U	0.48	U	0.49	U	--		0.46	U	0.44	U	0.94	U	0.7	U
2,4-Dinitrotoluene	mg/Kg	3	0.028	U	0.034	U	0.022	U	0.023	U	0.021	U	0.021	U	--		0.02	U	0.019	U	0.041	U	0.031	U
2,6-Dinitrotoluene	mg/Kg	3	0.034	U	0.042	U	0.027	U	0.029	U	0.026	U	0.026	U	--		0.025	U	0.024	U	0.051	U	0.038	U
2-Chloronaphthalene	mg/Kg	--	0.031	U	0.038	U	0.024	U	0.026	U	0.023	U	0.024	U	--		0.022	U	0.022	U	0.046	U	0.034	U
2-Chlorophenol	mg/Kg	2200	0.027	U	0.033	U	0.021	U	0.022	U	0.02	U	0.021	U	--		0.02	U	0.019	U	0.04	U	0.03	U
2-Methylnaphthalene	mg/Kg	2400	1.2		0.036	U	1.2		0.025	U	0.022	U	0.023	U	--		0.021	U	0.021	U	0.044	U	0.033	U
2-Methylphenol	mg/Kg	3400	0.033	U	0.041	U	0.03	J	0.028	U	0.029	J	0.026	U	--		0.024	U	0.023	U	0.05	U	0.037	U
2-Nitroaniline	mg/Kg	23000	0.032	U	0.039	U	0.025	U	0.027	U	0.024	U	0.025	U	--		0.023	U	0.022	U	0.048	U	0.036	U
2-Nitrophenol	mg/Kg	--	0.042	U	0.052	U	0.033	U	0.035	U	0.032	U	0.033	U	--		0.031	U	0.03	U	0.063	U	0.047	U
3,3'-Dichlorobenzidine	mg/Kg	4	0.12	U	0.15	U	0.094	U	0.1	U	0.09	U	0.092	U	--		0.087	U	0.084	U	0.18	U	0.13	U
3-Nitroaniline	mg/Kg	--	0.046	U	0.056	U	0.036	U	0.038	U	0.035	U	0.035	U	--		0.033	U	0.032	U	0.068	U	0.051	U
4,6-Dinitro-2-methylphenol	mg/Kg	68	0.38	U	0.46	U	0.29	U	0.31	U	0.28	U	0.29	U	--		0.27	U	0.26	U	0.56	U	0.42	U
4-Bromophenylphenyl ether	mg/Kg	--	0.024	U	0.029	U	0.019	U	0.02	U	0.018	U	0.018	U	--		0.017	U	0.017	U	0.036	U	0.027	U
4-Chloro-3-methylphenol	mg/Kg	--	0.032	U	0.04	U	0.025	U	0.027	U	0.025	U	0.025	U	--		0.024	U	0.023	U	0.048	U	0.036	U
4-Chloroaniline	mg/Kg	--	0.026	U	0.032	U	0.021	U	0.022	U	0.035	U	0.035	U	--		0.033	U	0.032	U	0.068	U	0.051	U
4-Chlorophenyl phenyl ether	mg/Kg	--	0.046	U	0.056	U	0.036	U	0.038	U	0.02	U	0.02	U	--		0.019	U	0.019	U	0.039	U	0.029	U
4-Methylphenol	mg/Kg	340	0.033	U	0.041	U	0.12	J	0.028	U	0.11	J	0.026	U	--		0.024	U	0.023	U	0.05	U	0.037	U
4-Nitroaniline	mg/Kg	--	0.022	U	0.027	U	0.018	U	0.019	U	0.017	U	0.017	U	--		0.016	U	0.016	U	0.033	U	0.025	U
4-Nitrophenol	mg/Kg	--	0.041	U	0.051	U	0.033	U	0.035	U	0.031	U	0.032	U	--		0.03	U	0.029	U	0.062	U	0.046	U
Acenaphthene	mg/Kg	37000	0.44	J	0.034	U	0.21	J	0.023	U	0.021	U	0.024	J	--		0.02	U	0.019	U	0.041	U	0.031	U
Acenaphthylene	mg/Kg	300000	0.078	J	0.038	U	0.024	U	0.026	U	0.023	U	0.03	J	--		0.023	U	0.022	U	0.046	U	0.035	U
Acetophenone	mg/Kg	5	0.032	U	0.04	U	0.025	U	0.027	U	0.024	U	0.025	U	--		0.024	U	0.023	U	0.048	U	0.036	U
Anthracene	mg/Kg	30000	0.66		0.037	U	0.083	J	0.025	U	0.041	J	0.073	J	--		0.022	U	0.021	U	0.053	J	0.039	J
Atrazine	mg/Kg	2400	0.037	U	0.045	U	0.029	U	0.031	U	0.028	U	0.028	U	--		0.027	U	0.026	U	0.055	U	0.041	U
Benzaldehyde	mg/Kg	68000	0.056	U	0.069	U	0.044	U	0.047	U	0.043	U	0.044	U	--		0.041	U	0.04	U	0.084	U	0.063	U
Benzo(a)anthracene	mg/Kg	2	0.89		0.026	U	0.017	U	0.018	U	0.18	J	0.32	J	--		0.015	U	0.015	U	0.11	J	0.024	U
Benzo(a)pyrene	mg/Kg	0.2	**0.76**		0.02	U	0.013	U	0.014	U	0.2	J	**0.3**	J	--		0.082	J	0.012	U	0.11	J	0.12	J
Benzo(b)fluoranthene	mg/Kg	2	1.5		0.025	U	0.016	U	0.017	U	0.37	J	0.61		--		0.015	U	0.014	U	0.29	J	0.24	J
Benzo(ghi)perylene	mg/Kg	30000	0.66		0.022	U	0.014	U	0.015	U	0.19	J	0.3	J	--		0.013	U	0.013	U	0.058	J	0.09	J
Benzo(k)fluoranthene	mg/Kg	23	0.017	U	0.021	U	0.013	U	0.014	U	0.013	U	0.013	U	--		0.012	U	0.012	U	0.025	U	0.019	U
Bis(2-chloroethoxy)methane	mg/Kg	--	0.025	U	0.03	U	0.019	U	0.021	U	0.019	U	0.019	U	--		0.018	U	0.017	U	0.037	U	0.028	U
Bis(2-chloroethyl)ether	mg/Kg	2	0.012	U	0.015	U	0.0094	U	0.01	U	0.0091	U	0.0092	U	--		0.0087	U	0.0084	U	0.018	U	0.013	U
Bis(2-ethylhexyl)phthalate	mg/Kg	140	0.16	J	0.05	U	0.032	U	0.034	U	0.099	J	0.13	J	--		0.03	U	0.11	J	0.061	U	0.099	J
Butyl benzyl phthalate	mg/Kg	14000	0.043	U	0.052	U	0.033	U	0.036	U	0.1	J	0.057	J	--		0.031	U	0.03	U	0.064	U	0.048	U
Caprolactam	mg/Kg	340000	0.1	U	0.12	U	0.079	U	0.084	U	0.076	U	0.078	U	--		0.073	U	0.071	U	0.15	U	0.11	U
Carbazole	mg/Kg	96	0.46	J	0.027	U	0.036	J	0.018	U	0.016	U	0.044	J	--		0.016	U	0.015	U	0.032	U	0.024	U
Chrysene	mg/Kg	230	0.82		0.026	U	0.017	U	0.018	U	0.2	J	0.38	J	--		0.015	U	0.015	U	0.16	J	0.024	U
Dibenzo(a,h)anthracene	mg/Kg	0.2	0.18	J	0.042	U	0.027	U	0.028	U	0.026	U	0.054	J	--		0.025	U	0.024	U	0.05	U	0.038	U
Dibenzofuran	mg/Kg	--	0.62		0.036	U	0.25	J	0.025	U	0.022	U	0.023	U	--		0.021	U	0.021	U	0.044	U	0.033	U
Diethyl phthalate	mg/Kg	550000	0.048	U	0.058	U	0.037	U	0.04	U	0.036	U	0.037	U	--		0.035	U	0.033	U	0.071	U	0.053	U
Dimethyl phthalate	mg/Kg	--	0.03	U	0.037	U	0.024	U	0.025	U	0.023	U	0.023	U	--		0.022	U	0.021	U	0.045	U	0.034	U
Di-n-butyl phthalate	mg/Kg	68000	0.088	U	0.11	U	0.069	U	0.074	U	0.067	U	0.068	U	--		0.064	U	0.062	U	0.13	U	0.099	U
Di-n-octyl phthalate	mg/Kg	27000	0.037	U	0.046	U	0.029	U	0.031	U	0.028	U	0.029	U	--		0.027	U	0.026	U	0.055	U	0.041	U

TABLE 4-4

ANALYTICAL RESULTS
BARRIER WALL ALIGNMENT SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	BW-04 05/08/08 Fill Primary		BW-04 05/08/08 Mat Primary		BW-04 05/08/08 Sand Primary		BW-04 05/09/08 Clay Primary		BW-16 05/05/08 Fill Primary		BW-16 05/05/08 Fill Duplicate		BW-16 05/05/08 Mat Primary		BW-16 05/05/08 Sand Primary		BW-17 07/23/08 Fill Primary		BW-17 07/24/08 Mat Primary		BW-17 07/24/08 Mat Duplicate	
		Sample Depth	**0.0-6.33 ft**		**6.33-8.0 ft**		**14.0-20.0 ft**		**30.0-32.0 ft**		**0.0-11.5 ft**		**0.0-11.5 ft**		**11.5-12.5 ft**		**13.5-19.5 ft**		**0.0-7.25 ft**		**10.0-13.0 ft**		**10.0-13.0 ft**	
		VOC Sample Depth	**6.0-6.33 ft**		**7.0-8.0 ft**		**18.0-19.0 ft**		**31.0-32.0 ft**		**10.0-11.0 ft**		**10.0-11.0 ft**		**11.5-12.5 ft**		**19.0-20.0 ft**		**7.0.0-7.25 ft**		**12.0-13.0 ft**		**12.0-13.0 ft**	
Semivolatile Organics (Continued)																								
Fluoranthene	mg/Kg	24000	2.5		0.042	U	0.046	J	0.029	U	0.33	J	0.59		--		0.025	U	0.024	U	0.18	J	0.14	J
Fluorene	mg/Kg	24000	0.18	J	0.032	U	0.19	J	0.022	U	0.02	U	0.02	U	--		0.019	U	0.018	U	0.038	U	0.029	U
Hexachlorobenzene	mg/Kg	1	0.032	U	0.039	U	0.084	J	0.027	U	0.024	U	0.025	U	--		0.023	U	0.022	U	0.048	U	0.036	U
Hexachlorobutadiene	mg/Kg	25	0.033	U	0.04	U	0.026	U	0.027	U	0.025	U	0.025	U	--		0.024	U	0.023	U	0.048	U	0.036	U
Hexachlorocyclopentadiene	mg/Kg	110	0.024	U	0.03	U	0.019	U	0.02	U	0.018	U	0.019	U	--		0.018	U	0.017	U	0.036	U	0.027	U
Hexachloroethane	mg/Kg	140	0.024	U	0.029	U	0.019	U	0.02	U	0.018	U	0.018	U	--		0.017	U	0.017	U	0.035	U	0.027	U
Indeno(1,2,3-cd)pyrene	mg/Kg	2	0.54		0.023	U	0.015	U	0.016	U	0.15	J	0.23	J	--		0.014	U	0.013	U	0.099	J	0.074	J
Isophorone	mg/Kg	2000	0.03	U	0.036	U	0.023	U	0.025	U	0.022	U	0.023	U	--		0.022	U	0.021	U	0.044	U	0.033	U
Naphthalene	mg/Kg	17	**170**		16		13		0.022	U	0.048	J	0.02	U	--		0.019	U	0.018	U	0.038	U	0.029	U
Nitrobenzene	mg/Kg	340	0.013	U	0.016	U	0.01	U	0.011	U	0.01	U	0.01	U	--		0.0097	U	0.0093	U	0.02	U	0.015	U
N-Nitrosodiphenylamine	mg/Kg	390	0.029	U	0.035	U	0.023	U	0.024	U	0.022	U	0.022	U	--		0.021	U	0.02	U	0.043	U	0.032	U
N-Nitrosodipropylamine	mg/Kg	0.3	0.013	U	0.016	U	0.01	U	0.011	U	0.0098	U	0.01	U	--		0.0095	U	0.0092	U	0.019	U	0.015	U
Pentachlorophenol	mg/Kg	10	0.04	U	0.049	U	0.031	U	0.033	U	0.03	U	0.031	U	--		0.029	U	0.028	U	0.059	U	0.044	U
Phenanthrene	mg/Kg	300000	3.3		0.031	U	0.22	J	0.021	U	0.15	J	0.3	J	--		0.019	U	0.018	U	0.038	U	0.029	U
Phenol	mg/Kg	210000	0.032	U	0.039	U	0.025	U	0.027	U	0.13	J	0.025	U	--		0.023	U	0.023	U	0.048	U	0.036	U
Pyrene	mg/Kg	18000	1.9		0.04	U	0.031	J	0.027	U	0.27	J	0.49		--		0.024	U	0.023	U	0.17	J	0.16	J
Polychlorinated Dioxins/Furans																								
1,2,3,4,6,7,8-HpCDD	ug/Kg	--	0.012		0.0049	J	0.066		--		0.036		0.026		--		0.0059	U	0.012		0.00076	J	--	
1,2,3,4,6,7,8-HpCDF	ug/Kg	--	0.7		0.0099	QJ	2.9		--		1.2		0.52		--		0.0013	J	0.0026	BJ	0.0066	BJ	--	
1,2,3,4,7,8,9-HpCDF	ug/Kg	--	0.017		0.01	U	0.09		--		0.029		0.013		--		0.0059	U	0.0056	U	0.012	U	--	
1,2,3,4,7,8-HxCDD	ug/Kg	--	0.00094	J	0.01	U	0.0078	J	--		0.00098	QJ	0.00075	J	--		0.0059	U	0.0056	U	0.012	U	--	
1,2,3,4,7,8-HxCDF	ug/Kg	--	0.23	Q	0.0038	QJ	0.95	Q	--		0.21		0.1		--		0.00026	J	0.00058	QJ	0.0016	J	--	
1,2,3,6,7,8-HxCDD	ug/Kg	--	0.002	J	0.01	U	0.027		--		0.0025	J	0.0012	J	--		0.0059	U	0.0056	U	0.012	U	--	
1,2,3,6,7,8-HxCDF	ug/Kg	--	0.043		0.00083	J	0.12		--		0.055	Q	0.032	Q	--		0.0059	U	0.00022	J	0.0003	QJ	--	
1,2,3,7,8,9-HxCDD	ug/Kg	--	0.0017	J	0.00048	QJ	0.015		--		0.0015	QJ	0.0015	J	--		0.0059	U	0.0056	U	0.012	U	--	
1,2,3,7,8,9-HxCDF	ug/Kg	--	0.008	U	0.01	U	0.013	U	--		0.00066	Q	0.00067	QJ	--		0.0059	U	0.0056	U	0.012	U	--	
1,2,3,7,8-PCDD	ug/Kg	--	0.0015	QJ	0.01	U	0.014	Q	--		0.0012	QJ	0.00084	QJ	--		0.0059	U	0.0056	U	0.00042	QJ	--	
1,2,3,7,8-PCDF	ug/Kg	--	0.0087	Q	0.00024	QJ	0.012	J	--		0.011		0.0053	J	--		0.0059	U	0.0056	U	0.012	U	--	
2,3,4,6,7,8-HxCDF	ug/Kg	--	0.013		0.01	U	0.039		--		0.016		0.0075		--		0.0059	U	0.0056	U	0.00018	QJ	--	
2,3,4,7,8-PCDF	ug/Kg	--	0.028	Q	0.00051	QJ	0.093		--		0.018	Q	0.0084	Q	--		0.0059	U	0.0056	U	0.012	U	--	
2,3,7,8-TCDD	ug/Kg	--	0.0022	Q	0.002	U	0.0028	Q	--		0.0025		0.0013		--		0.0012	U	0.0011	U	0.0024	U	--	
2,3,7,8-TCDF	ug/Kg	--	0.0021	Q	0.002	U	0.0098	Q	--		0.014	Q	0.0084	Q	--		0.0012	U	0.0011	U	0.0024	U	--	
OCDD	ug/Kg	--	0.077	B	0.14	B	0.3	B	--		1.2		1.4		--		0.0054	QJ	2.1	BJ	0.01	BJ	--	
OCDF	ug/Kg	--	0.84		0.016	J	4.3		--		1.2	B	0.52	B	--		0.0039	BJ	0.0055	BJ	0.014	BJ	--	
Total HpCDD	ug/Kg	--	0.028		0.016		0.12		--		0.093		0.065		--		0.00033	QJ	0.027		0.002	QJ	--	
Total HpCDF	ug/Kg	--	0.78		0.011	QJ	3.2		--		1.3		0.59		--		0.0013	J	0.0026	BJ	0.0069	QJB	--	
Total HxCDD	ug/Kg	--	0.027		0.0067	QJ	0.16	Q	--		0.028	Q	0.016	QJ	--		0.0059	U	0.0012	QJ	0.012	U	--	
Total HxCDF	ug/Kg	--	0.62	Q	0.01	QJ	2.1	Q	--		0.68	Q	0.35	Q	--		0.00034	J	0.0012	QJ	0.0041	QJ	--	
Total PeCDD	ug/Kg	--	0.031	Q	0.01	U	0.27	Q	--		0.022	Q	0.012	QJ	--		0.0059	U	0.0056	U	0.00042	QJ	--	
Total PeCDF	ug/Kg	--	0.39	Q	0.0052	QJ	0.96	Q	--		0.35	Q	0.13	Q	--		0.0059	U	0.0056	U	0.0011	JQ	--	
Total TCDD	ug/Kg	--	0.035	Q	0.00077	QJ	0.66	Q	--		0.033	Q	0.014	Q	--		0.0012	U	0.0011	U	0.00048	QJ	--	
Total TCDF	ug/Kg	--	0.27	Q	0.0077	Q	0.67	Q	--		0.24	Q	0.12	Q	--		0.0012	U	0.0011	U	0.0013	JQ	--	
Polychlorinated Dioxins/Furans (2,3,7,8 Equivalents)																								
1,2,3,4,6,7,8-HpCDD	0.01	--	1.20E-04		4.90E-05		6.60E-04		--		3.60E-04		2.60E-04		--		--		1.20E-04		7.60E-06		--	
1,2,3,4,6,7,8-HpCDF	0.01	--	7.00E-03		--		2.90E-02		--		1.20E-02		5.20E-03		--		1.30E-05		2.60E-05		6.60E-05		--	
1,2,3,4,7,8,9-HpCDF	0.01	--	1.70E-04		--		9.00E-04		--		2.90E-04		1.30E-04		--		--		--		--		--	
1,2,3,4,7,8-HxCDD	0.10	--	9.40E-05		--		7.80E-04		--		--		7.50E-05		--		--		--		--		--	
1,2,3,4,7,8-HxCDF	0.10	--	--		--		--		--		2.10E-02		1.00E-02		--		2.60E-05		--		1.60E-04		--	
1,2,3,6,7,8-HxCDD	0.10	--	2.00E-04		--		2.70E-03		--		2.50E-04		1.20E-04		--		--		--		--		--	

TABLE 4-4

ANALYTICAL RESULTS
BARRIER WALL ALIGNMENT SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	BW-04 05/08/08 Fill Primary		BW-04 05/08/08 Mat Primary		BW-04 05/08/08 Sand Primary		BW-04 05/09/08 Clay Primary		BW-16 05/05/08 Fill Primary		BW-16 05/05/08 Fill Duplicate		BW-16 05/05/08 Mat Primary		BW-16 05/05/08 Sand Primary		BW-17 07/23/08 Fill Primary		BW-17 07/24/08 Mat Primary		BW-17 07/24/08 Mat Duplicate	
		Sample Depth	**0.0-6.33 ft**		**6.33-8.0 ft**		**14.0-20.0 ft**		**30.0-32.0 ft**		**0.0-11.5 ft**		**0.0-11.5 ft**		**11.5-12.5 ft**		**13.5-19.5 ft**		**0.0-7.25 ft**		**10.0-13.0 ft**		**10.0-13.0 ft**	
		VOC Sample Depth	**6.0-6.33 ft**		**7.0-8.0 ft**		**18.0-19.0 ft**		**31.0-32.0 ft**		**10.0-11.0 ft**		**10.0-11.0 ft**		**11.5-12.5 ft**		**19.0-20.0 ft**		**7.0.0-7.25 ft**		**12.0-13.0 ft**		**12.0-13.0 ft**	
Polychlorinated Dioxins/Furans (2,3,7,8 Equivalents) (Continu																								
1,2,3,6,7,8-HxCDF	0.10	--	4.30E-03		8.30E-05		1.20E-02		--		--		--		--		--		2.20E-05		--		--	
1,2,3,7,8,9-HxCDD	0.10	--	1.70E-04		--		1.50E-03		--		--		1.50E-04		--		--		--		--		--	
1,2,3,7,8,9-HxCDF	0.10	--	--		--		--		--		--		--		--		--		--		--		--	
1,2,3,7,8-PCDD	1.00	--	--		--		--		--		--		--		--		--		--		--		--	
1,2,3,7,8-PCDF	0.05	--	--		--		6.00E-04		--		5.50E-04		2.65E-04		--		--		--		--		--	
2,3,4,6,7,8-HxCDF	0.10	--	1.30E-03		--		3.90E-03		--		1.60E-03		7.50E-04		--		--		--		--		--	
2,3,4,7,8-PCDF	0.50	--	--		--		4.65E-02		--		--		--		--		--		--		--		--	
2,3,7,8-TCDD	1.00	--	--		--		--		--		2.50E-03		1.30E-03		--		--		--		--		--	
2,3,7,8-TCDF	0.10	--	--		--		--		--		--		--		--		--		--		--		--	
OCDD	0.0001	--	7.70E-06		1.40E-05		3.00E-05		--		1.20E-04		1.40E-04		--		--		2.10E-04		1.00E-06		--	
OCDF	0.0001	--	8.40E-05		1.60E-06		4.30E-04		--		1.20E-04		5.20E-05		--		3.90E-07		5.50E-07		1.40E-06		--	
Total 2,3,7,8-TCDD Equivalents[2]	ug/Kg	1	1.34E-02		1.48E-04		9.90E-02		--		3.88E-02		1.84E-02		--		3.94E-05		3.79E-04		2.36E-04		--	
Polychlorinated Biphenyls (Aroclors)																								
Aroclor 1016	mg/Kg	1	0.004	U	0.0049	U	0.0031	U	--		0.003	U	0.0031	U	--		0.0029	U	0.0028	U	0.0059	U	0.0044	U
Aroclor 1221	mg/Kg	1	0.0051	U	0.0063	U	0.004	U	--		0.0039	U	0.0039	U	--		0.0038	U	0.0036	U	0.0076	U	0.0057	U
Aroclor 1232	mg/Kg	1	0.0046	U	0.0056	U	0.0036	U	--		0.0035	U	0.0035	U	--		0.0034	U	0.0032	U	0.0068	U	0.0051	U
Aroclor 1242	mg/Kg	1	0.0044	U	0.0054	U	0.0034	U	--		0.0033	U	0.0034	U	--		0.0032	U	0.0031	U	0.0065	U	0.0049	U
Aroclor 1248	mg/Kg	1	0.0025	U	0.0031	U	0.002	U	--		0.0019	U	0.002	U	--		0.0019	U	0.0018	U	0.0038	U	0.0028	U
Aroclor 1254	mg/Kg	1	0.0038	U	0.0047	U	0.003	U	--		0.39		0.87		--		0.0028	U	0.0027	U	0.0057	U	0.0043	U
Aroclor 1260	mg/Kg	1	0.046		0.0047	U	0.003	U	--		0.0029	U	0.0029	U	--		0.0028	U	0.0027	U	0.0057	U	0.0043	U
Aroclor 1262	mg/Kg	1	0.0059	U	0.0072	U	0.0046	U	--		0.0044	U	0.0045	U	--		0.0043	U	0.0041	U	0.0087	U	0.0065	U
Aroclor 1268	mg/Kg	1	0.0034	U	0.0042	U	0.0027	U	--		0.0026	U	0.0027	U	--		0.0025	U	0.0024	U	0.0051	U	0.0038	U
Metals																								
Aluminum	mg/Kg	--	27300		10800		4540		14800		9200	J	8280	J	--		2770	J	13300		4020		5540	
Antimony	mg/Kg	450	1.5	U	0.18	U	0.12	U	0.25	B	1.3		1.2		--		0.22	B	0.1	U	0.35	BJ	0.17	U
Arsenic	mg/Kg	19	9.8	B	6.5		1.8		7.8		6.5		5.5		--		1.1	B	1.9		1.8	B	1.2	B
Barium	mg/Kg	59000	62.3		26.1	B	10.6	B	94.9		102		88.4		--		10.8	B	98.7		26.7	B	24.2	B
Beryllium	mg/Kg	140	0.099	U	0.75	B	0.34	B	0.94		0.54		0.52		--		0.21	B	0.85		0.16	B	0.16	B
Cadmium	mg/Kg	78	2.2		0.48	B	0.15	B	0.064	U	0.11	B	0.19	B	--		0.055	U	0.15	B	0.11	U	0.085	U
Calcium	mg/Kg	--	150000		2050		605	B	5660		1070		1050		--		513	B	1740		3470		1870	
Chromium[3]	mg/Kg	120000	21000	J	88.8	J	17.1	J	24.7	J	104	J	94.3	J	--		12	J	22.6		17.3		9.2	
Chromium (Hexavalent)[3]	mg/Kg	20	**2510**		0.4	U	0.4	U	0.4	U	6.6		5.4		--		0.4	U	0.4	U	0.4	U	0.4	U
Cobalt	mg/Kg	590	126		8	B	3.8	B	13.5		4.9	B	4.6	B	--		2.2	B	10.1		1.4	B	1.4	B
Copper	mg/Kg	45000	23.8		11.5		5.9		29.6		49.1		40.7		--		4.1		24.6		8.2		3.7	B
Iron	mg/Kg	--	72100		22300		8230		29800	J	14400		13600		--		6800		24500		5410		4790	
Lead	mg/Kg	800	52.3		10.5		3.4		12.2		113		111		--		1.9		14		13.7		6.3	
Magnesium	mg/Kg	--	46800		4660		1280		9370		1990		1790		--		1030		6720		2510		1590	
Manganese	mg/Kg	5900	933		209		63.7		662		187		198		--		42.2		503		151		105	
Mercury	mg/Kg	65	0.18		0.03	B	0.0089	U	0.025	B	0.18		0.12		--		0.0084	U	0.012	B	0.028	B	0.022	B
Nickel	mg/Kg	23000	597	J	20.3	J	9.1	J	29.1		14.5		14		--		5.1		23.8		4.6	B	4.3	B
Potassium	mg/Kg	--	308	B	2210		482	B	2000		496	B	484	B	--		272	B	2260		216	B	235	B
Selenium	mg/Kg	5700	0.46	U	0.94	B	0.36	U	0.58	B	0.87		0.73		--		0.34	U	0.32	U	0.69	U	0.52	U
Silver	mg/Kg	5700	0.57	B	0.15	B	0.047	U	0.15	B	0.17	BJ	0.16	B	--		0.044	U	0.12	B	0.089	U	0.067	U
Sodium	mg/Kg	--	1340		2640		467	B	503	B	54.7	B	89.8	B	--		64.6	B	150	B	862	B	510	B
Thallium	mg/Kg	79	8.6		0.64	U	0.4	U	2		0.87	B	1.2		--		0.38	U	0.69	B	0.77	U	0.58	U
Vanadium	mg/Kg	1100	**1390**		38.6		19.1		29.3		39		37.2		--		10.4		27.4		9.8	B	10.2	
Zinc	mg/Kg	110000	223		49.2		19.8		67.9		73.5		85.2		--		12.4		64.8	J	14.5		14.2	

TABLE 4-4

ANALYTICAL RESULTS
BARRIER WALL ALIGNMENT SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	BW-04 05/08/08 Fill Primary		BW-04 05/08/08 Mat Primary		BW-04 05/08/08 Sand Primary		BW-04 05/09/08 Clay Primary		BW-16 05/05/08 Fill Primary		BW-16 05/05/08 Fill Duplicate		BW-16 05/05/08 Mat Primary		BW-16 05/05/08 Sand Primary		BW-17 07/23/08 Fill Primary		BW-17 07/24/08 Mat Primary		BW-17 07/24/08 Mat Duplicate	
		Sample Depth	**0.0-6.33 ft**		**6.33-8.0 ft**		**14.0-20.0 ft**		**30.0-32.0 ft**		**0.0-11.5 ft**		**0.0-11.5 ft**		**11.5-12.5 ft**		**13.5-19.5 ft**		**0.0-7.25 ft**		**10.0-13.0 ft**		**10.0-13.0 ft**	
		VOC Sample Depth	**6.0-6.33 ft**		**7.0-8.0 ft**		**18.0-19.0 ft**		**31.0-32.0 ft**		**10.0-11.0 ft**		**10.0-11.0 ft**		**11.5-12.5 ft**		**19.0-20.0 ft**		**7.0.0-7.25 ft**		**12.0-13.0 ft**		**12.0-13.0 ft**	
Toxicity Characteristic Leacing Procedure[4]																								
1,1-Dichloroethene	mg/L	0.7	0.035	U	0.035	U	0.035	U	--		0.035	U	--		0.035	U	0.035	U	0.035	U	0.035	U	--	
1,2-Dichloroethane	mg/L	0.5	0.026	U	0.026	U	0.026	U	--		0.026	U	--		0.026	U	0.026	U	0.026	U	0.026	U	--	
1,4-Dichlorobenzene	mg/L	7.5	0.059		0.0046	U	0.46		--		0.0046	U	--		0.0046	U	0.0046	U	0.0046	U	0.011	J	--	
2,4,5-Trichlorophenol	mg/L	400	0.0041	U	0.0041	U	0.0041	U	--		0.0041	U	--		0.0041	U	0.0041	U	0.0041	U	0.0041	U	--	
2,4,6-Trichlorophenol	mg/L	2	0.0026	U	0.0026	U	0.0026	U	--		0.0026	U	--		0.0026	U	0.0026	U	0.0026	U	0.0026	U	--	
2,4-Dinitrotoluene	mg/L	0.13	0.0028	U	0.0028	U	0.0028	U	--		0.0028	U	--		0.0028	U	0.0028	U	0.0028	U	0.0028	U	--	
2-Butanone	mg/L	200	0.029	U	0.029	U	0.029	U	--		0.029	U	--		0.029	U	0.029	U	0.029	U	0.029	U	--	
Benzene	mg/L	0.5	0.033	U	0.033	U	0.033	U	--		0.033	U	--		0.033	U	0.033	U	0.033	U	0.033	U	--	
Carbon Tetrachloride	mg/L	0.5	0.037	U	0.037	U	0.037	U	--		0.037	U	--		0.037	U	0.037	U	0.037	U	0.037	U	--	
Chlorobenzene	mg/L	100	0.12	J	0.26		0.028	U	--		0.028	U	--		0.028	U	0.028	U	0.028	U	0.028	U	--	
Chloroform	mg/L	6	0.031	U	0.031	U	0.031	U	--		0.031	U	--		0.031	U	0.031	U	0.031	U	0.031	U	--	
Cresols	mg/L	200	0.0089	U	0.0089	U	0.0089	U	--		0.0089	U	--		0.0089	U	0.0089	U	0.0089	U	0.0089	U	--	
Hexachlorobenzene	mg/L	0.13	0.0049	U	0.0049	U	0.0049	U	--		0.0049	U	--		0.0049	U	0.0049	U	0.0049	U	0.0049	U	--	
Hexachlorobutadiene	mg/L	0.5	0.0033	U	0.0033	U	0.0033	U	--		0.0033	U	--		0.0033	U	0.0033	U	0.0033	U	0.0033	U	--	
Hexachloroethane	mg/L	3	0.0036	U	0.0036	U	0.0036	U	--		0.0036	U	--		0.0036	U	0.0036	U	0.0036	U	0.0036	U	--	
Nitrobenzene	mg/L	2	0.0056	U	0.0056	U	0.0056	U	--		0.0056	U	--		0.0056	U	0.0056	U	0.0056	U	0.0056	U	--	
Pentachlorophenol	mg/L	100	0.005	U	0.005	U	0.005	U	--		0.005	U	--		0.005	U	0.005	U	0.005	U	0.005	U	--	
Pyridine	mg/L	5	0.011	U	0.011	U	0.011	U	--		0.011	U	--		0.011	U	0.011	U	0.011	U	0.011	U	--	
Tetrachloroethene	mg/L	0.7	0.023	U	0.023	U	0.023	U	--		0.023	U	--		0.023	U	0.023	U	0.023	U	0.023	U	--	
Trichloroethene	mg/L	0.5	0.035	U	0.035	U	0.035	U	--		0.035	U	--		0.035	U	0.035	U	0.035	U	0.035	U	--	
Vinyl chloride	mg/L	0.2	0.038	U	0.038	U	0.038	U	--		0.038	U	--		0.038	U	0.038	U	0.038	U	0.038	U	--	
Arsenic	mg/L	5	0.22	B	0.14	B	0.16	B	--		0.18	B	--		0.17	B	0.19	B	0.14	B	0.16	B	--	
Barium	mg/L	100	0.091	B	0.028	B	0.092	B	--		0.64	B	--		0.12	B	0.18	B	0.73	BJ	0.1	BJ	--	
Cadmium	mg/L	1	0.0012	U	0.0012	U	0.0012	U	--		0.0012	U	--		0.0012	U	0.0012	U	0.0012	U	0.0012	U	--	
Chromium	mg/L	5	**43.7**		0.057	B	0.024	B	--		0.32	B	--		0.0022	B	0.022	B	0.0011	U	0.0062	B	--	
Lead	mg/L	5	0.013	U	0.013	U	0.013	U	--		0.096	B	--		0.013	U	0.013	U	0.013	U	0.013	U	--	
Mercury	mg/L	0.2	0.000055	U	0.000055	U	0.000055	U	--		0.000055	U	--		0.000055	U	0.000055	U	0.000055	U	0.000055	U	--	
Selenium	mg/L	1	0.015	U	0.015	U	0.015	U	--		0.015	U	--		0.015	U	0.017	B	0.015	U	0.015	U	--	
Silver	mg/L	5	0.0025	U	0.0025	U	0.0025	U	--		0.0025	U	--		0.0025	U	0.0025	U	0.0025	U	0.0025	U	--	
RCRA Characteristics and Indicators																								
Corrosivity (pH)	SU	2<pH<12.5	11.96		8.31		6.19		8.21		6.43		6.3		--		7.76		7.54		7.3		--	
Cyanide	mg/Kg	23000	0.75	B	0.19	U	0.12	U	--		0.12	U	0.61	B	--		0.11	U	0.24	B	0.23	U	0.17	U
Total Sulfide (Reactivity)	mg/Kg	--	19.7	U	24.5	U	15.4	U	--		14.9	U	--		--		14.5	U	13.8	U	95.6		--	
Ignitability	None	--	No		No		No		--		No		--		--		No		No		No		--	
Oxidation Reduction Potential	mV	--	--		--		--		--		481		--		--		431		629		617		599	
Percent Solids	%	--	62.3		50.2		79.4		--		82.4		--		--		84.6		88.6		41.9		55.2	

TABLE 4-4

ANALYTICAL RESULTS
BARRIER WALL ALIGNMENT SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	BW-17 07/24/08 Sand Primary		BW-17 07/24/08 Clay Primary		BW-18A 04/29/08 Fill Primary		BW-18A 04/29/08 Mat Primary		BW-18A 04/29/08 Sand Primary		BW-18B 07/25/08 Fill Primary		BW-18B 07/28/08 Mat Primary		BW-18B 07/28/08 Sand Primary		BW-18B 07/28/08 Clay Primary		BW-19 07/28/08 Fill Primary		BW-19 07/29/08 Sand Primary	
		Sample Depth	**13.0-17.0 ft**		**22.0-24.0 ft**		**0.5-7.0 ft**		**7.0-10.0 ft**		**10.0-18.0 ft**		**0.0-5.75 ft**		**8.0-13.0 ft**		**13.0-17.75 ft**		**22.0-24.0 ft**		**0.0-7.5 ft**		**12.0-16.25 ft**	
		VOC Sample Depth	**16.0-17.0 ft**		**23.0-24.0 ft**		**6.5-7.0 ft**		**9.0-10.0 ft**		**16.0-17.0 ft**		**5.0-5.75 ft**		**12.0-13.0 ft**		**17.0-17.75 ft**		**23.0-24.0 ft**		**7.0-7.5 ft**		**16.0-16.25 ft**	
Volatile Organics																								
1,1,1-Trichloroethane	mg/Kg	4200	0.76	U	0.00055	U	18	U	7.9	U	2.3	U	0.11	U	0.00067	U	63	U	0.00054	U	0.0005	U	0.057	U
1,1,2,2-Tetrachloroethane	mg/Kg	3	0.85	U	0.00081	U	20	U	8.8	U	2.5	U	0.12	U	0.00098	U	71	U	0.0008	U	0.00074	U	0.064	U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg	6	0.8	U	0.00094	U	22	U	9.6	U	2.7	U	0.11	U	0.0011	U	66	U	0.00092	U	0.00085	U	0.06	U
1,1,2-Trichloroethane	mg/Kg	--	0.93	U	0.0012	U	19	U	8.3	U	2.4	U	0.13	U	0.0015	U	77	U	0.0012	U	0.0011	U	0.07	U
1,1-Dichloroethane	mg/Kg	24	0.73	U	0.00065	U	18	U	7.6	U	2.2	U	0.1	U	0.00079	U	61	U	0.00064	U	0.00059	U	0.055	U
1,1-Dichloroethene	mg/Kg	150	0.88	U	0.00096	U	21	U	9.1	U	2.6	U	0.13	U	0.0012	U	73	U	0.00094	U	0.00087	U	0.066	U
1,2,4-Trichlorobenzene	mg/Kg	820	0.96	J	0.00099	U	**1300**		55		90		0.11	U	0.0012	U	210	J	0.00098	U	0.0009	U	0.058	U
1,2-Dibromoethane	mg/Kg	0.04	0.78	U	0.00097	U	19	U	8.1	U	2.3	U	0.11	U	0.0012	U	65	U	0.00096	U	0.00088	U	0.059	U
1,2-Dichlorobenzene	mg/Kg	59000	53		0.0009	U	2700		1200		200		0.46	J	0.09		5600		0.0014	J	0.00082	U	0.96	
1,2-Dichloroethane	mg/Kg	3	0.82	U	0.00069	U	20	U	8.5	U	2.4	U	0.12	U	0.00084	U	68	U	0.00068	U	0.00063	U	0.062	U
1,2-Dichloropropane	mg/Kg	5	0.83	U	0.00061	U	20	U	8.6	U	2.5	U	0.12	U	0.00074	U	69	U	0.0006	U	0.00056	U	0.063	U
1,3-Dichlorobenzene	mg/Kg	59000	57		0.00074	U	2800		1000		200		1.2		0.071		7300		0.0014	J	0.00067	U	0.84	
1,4-Dichlorobenzene	mg/Kg	13	**70**		0.00072	U	**1600**		**660**		**110**		2.1		0.16		**8400**		0.0022	J	0.00065	U	1.2	
2-Butanone	mg/Kg	44000	0.73	U	0.00099	U	18	U	7.6	U	2.2	U	0.1	U	0.0012	U	60	U	0.00098	U	0.0009	U	0.055	U
2-Hexanone	mg/Kg	--	0.6	U	0.00078	U	14	U	6.2	U	1.8	U	0.085	U	0.00094	U	49	U	0.00076	U	0.00071	U	0.045	U
4-Methyl-2-pentanone	mg/Kg	--	0.9	U	0.00073	U	16	U	6.8	U	1.9	U	0.13	U	0.00089	U	54	U	0.00072	U	0.00067	U	0.049	U
Acetone	mg/Kg	--	0.9	U	0.0056	U	22	U	9.3	U	2.6	U	0.13	U	0.0068	U	74	U	0.0055	U	0.0051	U	0.067	U
Benzene	mg/Kg	5	0.78	U	0.00076	U	19	U	8.1	U	2.3	U	0.11	U	0.037		65	U	0.00075	U	0.00069	U	0.059	U
Bromodichloromethane	mg/Kg	3	0.73	U	0.00063	U	18	U	7.6	U	2.2	U	0.1	U	0.00077	U	61	U	0.00062	U	0.00058	U	0.055	U
Bromoform	mg/Kg	280	0.77	U	0.0005	U	18	U	7.9	U	2.3	U	0.11	U	0.0006	U	63	U	0.00049	U	0.00045	U	0.058	U
Bromomethane	mg/Kg	59	0.95	U	0.00083	U	23	U	9.9	U	2.8	U	0.14	U	0.001	U	79	U	0.00082	U	0.00076	U	0.072	U
Carbon disulfide	mg/Kg	110000	0.92	U	0.00058	U	22	U	9.6	U	2.7	U	0.13	U	0.0007	U	76	U	0.00057	U	0.0023	J	0.069	U
Carbon tetrachloride	mg/Kg	2	0.67	U	0.0005	U	16	U	7	U	2	U	0.096	U	0.00061	U	56	U	0.00049	U	0.00046	U	0.051	U
Chlorobenzene	mg/Kg	7400	0.92	J	0.00085	U	68	J	130		4.8	J	1.3		0.078		69	U	0.00084	U	0.00078	U	0.074	J
Chloroethane	mg/Kg	1100	1.1	U	0.0017	U	26	U	11	U	3.2	U	0.15	U	0.0021	U	90	U	0.0017	U	0.0016	U	0.081	U
Chloroform	mg/Kg	2	0.8	U	0.00066	U	19	U	8.2	U	2.3	U	0.11	U	0.0008	U	66	U	0.00065	U	0.0006	U	0.06	U
Chloromethane	mg/Kg	12	0.83	U	0.00096	U	20	U	8.6	U	2.5	U	0.12	U	0.0012	U	69	U	0.00094	U	0.00087	U	0.063	U
cis-1,2-Dichloroethene	mg/Kg	560	0.81	U	0.00079	U	19	U	8.4	U	2.4	U	0.12	U	0.00096	U	67	U	0.00078	U	0.00072	U	0.061	U
cis-1,3-Dichloropropene	mg/Kg	7	0.68	U	0.00076	U	16	U	7	U	2	U	0.096	U	0.00093	U	56	U	0.00075	U	0.0007	U	0.051	U
Cyclohexane	mg/Kg	--	0.75	U	0.00042	U	18	U	7.8	U	2.2	U	0.11	U	0.00051	U	62	U	0.00041	U	0.00038	U	0.056	U
Dibromochloromethane	mg/Kg	--	0.7	U	0.0008	U	17	U	7.2	U	2.1	U	0.099	U	0.00097	U	58	U	0.00079	U	0.00073	U	0.052	U
Dibromochloropropane	mg/Kg	8	0.63	U	0.00084	U	15	U	6.6	U	1.9	U	0.09	U	0.001	U	52	U	0.00083	U	0.00077	U	0.048	U
Dichlorodifluoromethane	mg/Kg	230000	0.96	U	0.00075	U	23	U	10	U	2.8	U	0.14	U	0.0067	J	79	U	0.00074	U	0.00068	U	0.072	U
Ethylbenzene	mg/Kg	110000	0.89	U	0.00072	U	21	U	9.2	U	2.6	U	0.13	U	0.00088	U	73	U	0.00071	U	0.00066	U	0.067	U
Isopropylbenzene	mg/Kg	--	0.81	U	0.00076	U	19	U	8.4	U	2.4	U	0.11	U	0.00093	U	67	U	0.00075	U	0.0007	U	0.061	U
Methyl acetate	mg/Kg	--	0.8	U	0.001	U	19	U	8.3	U	2.4	U	0.11	U	0.0012	U	66	U	0.001	U	0.00092	U	0.06	U
Methylcyclohexane	mg/Kg	--	0.84	U	0.00082	U	20	U	8.7	U	2.5	U	0.12	U	0.00099	U	70	U	0.0008	U	0.00074	U	0.063	U
Methylene chloride	mg/Kg	97	0.58	U	0.00076	U	14	U	9.7	J	1.7	U	0.082	U	0.00092	U	48	U	0.00074	U	0.00069	U	0.043	U
Methyltert-butylether	mg/Kg	320	0.7	U	0.00084	U	17	U	7.2	U	2.1	U	0.099	U	0.001	U	58	U	0.00083	U	0.00077	U	0.052	U
Styrene	mg/Kg	260	0.84	U	0.0006	U	20	U	8.7	U	2.5	U	0.12	U	0.00073	U	69	U	0.00059	U	0.00055	U	0.063	U
Tetrachloroethene	mg/Kg	5	0.98	U	0.00077	U	23	U	10	U	2.9	U	0.14	U	0.00093	U	81	U	0.00075	U	0.0007	U	0.074	U
Toluene	mg/Kg	91000	0.6	U	0.00082	U	14	U	6.2	U	1.8	U	0.085	U	0.001	U	49	U	0.00081	U	0.00075	U	0.045	U
trans-1,2-Dichloroethene	mg/Kg	720	0.88	U	0.00067	U	21	U	9.1	U	2.6	U	0.12	U	0.00081	U	72	U	0.00066	U	0.00061	U	0.066	U
trans-1,3-Dichloropropene	mg/Kg	7	0.66	U	0.00067	U	16	U	6.8	U	1.9	U	0.093	U	0.00082	U	54	U	0.00066	U	0.00061	U	0.049	U
Trichloroethene	mg/Kg	20	0.84	U	0.00074	U	20	U	8.7	U	2.5	U	0.12	U	0.0009	U	70	U	0.00073	U	0.00067	U	0.063	U
Trichlorofluoromethane	mg/Kg	340000	1.2	U	0.001	U	29	U	13	U	3.6	U	0.17	U	0.0013	U	100	U	0.001	U	0.00094	U	0.092	U
Vinyl chloride	mg/Kg	2	0.84	U	0.00053	U	20	U	8.7	U	2.5	U	0.12	U	0.00064	U	69	U	0.00052	U	0.00048	U	0.063	U
Xylene (total)	mg/Kg	170000	2.7	U	0.0025	U	64	U	27	U	7.8	U	0.38	U	0.0031	U	220	U	0.0025	U	0.0023	U	0.2	U

TABLE 4-4

ANALYTICAL RESULTS
BARRIER WALL ALIGNMENT SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	BW-17 07/24/08 Sand Primary		BW-17 07/24/08 Clay Primary		BW-18A 04/29/08 Fill Primary		BW-18A 04/29/08 Mat Primary		BW-18A 04/29/08 Sand Primary		BW-18B 07/25/08 Fill Primary		BW-18B 07/28/08 Mat Primary		BW-18B 07/28/08 Sand Primary		BW-18B 07/28/08 Clay Primary		BW-19 07/28/08 Fill Primary		BW-19 07/29/08 Sand Primary	
		Sample Depth	**13.0-17.0 ft**		**22.0-24.0 ft**		**0.5-7.0 ft**		**7.0-10.0 ft**		**10.0-18.0 ft**		**0.0-5.75 ft**		**8.0-13.0 ft**		**13.0-17.75 ft**		**22.0-24.0 ft**		**0.0-7.5 ft**		**12.0-16.25 ft**	
		VOC Sample Depth	**16.0-17.0 ft**		**23.0-24.0 ft**		**6.5-7.0 ft**		**9.0-10.0 ft**		**16.0-17.0 ft**		**5.0-5.75 ft**		**12.0-13.0 ft**		**17.0-17.75 ft**		**23.0-24.0 ft**		**7.0-7.5 ft**		**16.0-16.25 ft**	
Semivolatile Organics																								
1,1'-Biphenyl	mg/Kg	34000	0.022	U	0.024	U	0.73	J	0.46	J	1.6		0.046	U	0.028	U	0.023	U	0.024	U	0.2	J	0.023	U
2,2'-oxybis(1-chloropropane)	mg/Kg	--	0.024	U	0.026	U	0.051	U	0.37	U	0.023	U	0.051	U	0.03	U	0.025	U	0.026	U	0.049	U	0.025	U
2,4,5-Trichlorophenol	mg/Kg	68000	0.033	U	0.036	U	0.07	U	0.51	U	0.032	U	0.07	U	0.041	U	0.034	U	0.036	U	0.067	U	0.034	U
2,4,6-Trichlorophenol	mg/Kg	74	0.033	U	0.036	U	0.068	U	0.5	U	0.032	U	0.068	U	0.04	U	0.033	U	0.036	U	0.065	U	0.033	U
2,4-Dichlorophenol	mg/Kg	2100	0.22	J	0.013	U	0.59	J	0.39	J	0.23	J	0.025	U	0.015	U	0.16	J	0.013	U	0.024	U	0.012	U
2,4-Dimethylphenol	mg/Kg	14000	0.017	U	0.019	U	0.036	U	0.27	U	0.017	U	0.036	U	0.021	U	0.018	U	0.019	U	0.035	U	0.032	J
2,4-Dinitrophenol	mg/Kg	1400	0.48	U	0.52	U	1	U	7.3	U	0.46	U	1	U	0.59	U	0.49	U	0.52	U	0.96	U	0.49	U
2,4-Dinitrotoluene	mg/Kg	3	0.021	U	0.023	U	0.044	U	0.32	U	0.02	U	0.044	U	0.026	U	0.021	U	0.023	U	0.042	U	0.021	U
2,6-Dinitrotoluene	mg/Kg	3	0.026	U	0.028	U	0.054	U	0.4	U	0.025	U	0.054	U	0.032	U	0.027	U	0.028	U	0.052	U	0.027	U
2-Chloronaphthalene	mg/Kg	--	0.023	U	0.025	U	0.049	U	0.36	U	0.023	U	0.049	U	0.029	U	0.024	U	0.025	U	0.047	U	0.024	U
2-Chlorophenol	mg/Kg	2200	0.02	U	0.022	U	0.042	U	0.31	U	0.02	U	0.042	U	0.025	U	0.021	U	0.022	U	0.041	U	0.021	U
2-Methylnaphthalene	mg/Kg	2400	0.022	U	0.024	U	0.25	J	0.34	U	0.033	J	0.073	J	0.028	U	0.023	U	0.024	U	0.63	J	0.023	U
2-Methylphenol	mg/Kg	3400	0.025	U	0.028	U	0.053	U	0.39	U	0.024	U	0.053	U	0.031	U	0.026	U	0.028	U	0.051	U	0.026	U
2-Nitroaniline	mg/Kg	23000	0.024	U	0.026	U	0.051	U	0.37	U	0.023	U	0.051	U	0.03	U	0.025	U	0.026	U	0.049	U	0.025	U
2-Nitrophenol	mg/Kg	--	0.032	U	0.035	U	0.067	U	0.49	U	0.031	U	0.067	U	0.04	U	0.033	U	0.035	U	0.065	U	0.033	U
3,3'-Dichlorobenzidine	mg/Kg	4	0.091	U	0.099	U	0.19	U	1.4	U	0.088	U	0.19	U	0.11	U	0.093	U	0.099	U	0.18	U	0.093	U
3-Nitroaniline	mg/Kg	--	0.035	U	0.038	U	0.072	U	0.53	U	0.034	U	0.072	U	0.043	U	0.035	U	0.038	U	0.07	U	0.035	U
4,6-Dinitro-2-methylphenol	mg/Kg	68	0.29	U	0.31	U	0.59	U	4.4	U	0.28	U	0.59	U	0.35	U	0.29	U	0.31	U	0.57	U	0.29	U
4-Bromophenylphenyl ether	mg/Kg	--	0.018	U	0.02	U	0.038	U	0.28	U	0.018	U	0.038	U	0.022	U	0.019	U	0.02	U	0.036	U	0.019	U
4-Chloro-3-methylphenol	mg/Kg	--	0.025	U	0.027	U	0.051	U	0.38	U	0.024	U	0.051	U	0.03	U	0.025	U	0.027	U	0.049	U	0.025	U
4-Chloroaniline	mg/Kg	--	0.035	U	0.038	U	0.073	U	0.53	U	0.034	U	0.073	U	0.043	U	0.036	U	0.038	U	0.07	U	0.036	U
4-Chlorophenyl phenyl ether	mg/Kg	--	0.02	U	0.022	U	0.042	U	0.31	U	0.019	U	0.042	U	0.025	U	0.02	U	0.022	U	0.04	U	0.02	U
4-Methylphenol	mg/Kg	340	0.025	U	0.028	U	0.053	U	0.39	U	0.024	U	0.053	U	0.031	U	0.026	U	0.028	U	0.051	U	0.026	U
4-Nitroaniline	mg/Kg	--	0.017	U	0.019	U	0.035	U	0.26	U	0.022	J	0.035	U	0.021	U	0.017	U	0.019	U	0.034	U	0.017	U
4-Nitrophenol	mg/Kg	--	0.031	U	0.034	U	0.066	U	0.48	U	0.03	U	0.066	U	0.039	U	0.032	U	0.034	U	0.063	U	0.032	U
Acenaphthene	mg/Kg	37000	0.021	U	0.023	U	0.62	J	0.32	U	0.068	J	0.23	J	0.026	U	0.021	U	0.023	U	1.1		0.022	U
Acenaphthylene	mg/Kg	300000	0.024	U	0.026	U	0.088	J	0.36	U	0.023	U	0.34	J	0.029	U	0.024	U	0.026	U	0.84		0.024	U
Acetophenone	mg/Kg	5	0.025	U	0.027	U	0.051	U	0.38	U	0.024	U	0.051	U	0.03	U	0.025	U	0.027	U	0.049	U	0.025	U
Anthracene	mg/Kg	30000	0.023	U	0.025	U	1.5		0.43	J	0.078	J	2.6		0.028	U	0.023	U	0.025	U	16		0.033	J
Atrazine	mg/Kg	2400	0.028	U	0.03	U	0.058	U	0.43	U	0.027	U	0.058	U	0.034	U	0.028	U	0.03	U	0.056	U	0.028	U
Benzaldehyde	mg/Kg	68000	0.043	U	0.047	U	0.089	U	0.66	U	0.041	U	0.089	U	0.053	U	0.044	U	0.047	U	0.086	U	0.044	U
Benzo(a)anthracene	mg/Kg	2	0.016	U	0.017	U	**4.5**		1.2	J	0.17	J	**5**		0.02	U	0.016	U	0.017	U	**12**		0.12	J
Benzo(a)pyrene	mg/Kg	0.2	0.012	U	0.014	U	**5.1**		**1.3**	J	0.15	J	**4.7**		0.015	U	0.013	U	0.014	U	**15**		0.12	J
Benzo(b)fluoranthene	mg/Kg	2	0.016	U	0.017	U	**6.4**		1.5	J	0.21	J	**6.5**		0.019	U	0.016	U	0.017	U	**21**		0.18	J
Benzo(ghi)perylene	mg/Kg	30000	0.014	U	0.015	U	4.7		1	J	0.12	J	2.8		0.017	U	0.014	U	0.015	U	11		0.073	J
Benzo(k)fluoranthene	mg/Kg	23	0.013	U	0.014	U	0.027	U	0.2	U	0.013	U	0.027	U	0.016	U	0.013	U	0.014	U	0.026	U	0.013	U
Bis(2-chloroethoxy)methane	mg/Kg	--	0.019	U	0.021	U	0.039	U	0.29	U	0.018	U	0.039	U	0.023	U	0.019	U	0.021	U	0.038	U	0.019	U
Bis(2-chloroethyl)ether	mg/Kg	2	0.0091	U	0.0099	U	0.019	U	0.14	U	0.0088	U	0.019	U	0.011	U	0.0093	U	0.0099	U	0.018	U	0.0093	U
Bis(2-ethylhexyl)phthalate	mg/Kg	140	0.031	U	0.034	U	0.13	J	0.47	U	0.11	J	0.065	U	0.038	U	0.13	J	0.034	U	0.062	U	0.061	J
Butyl benzyl phthalate	mg/Kg	14000	0.032	U	0.035	U	0.068	U	0.5	U	0.031	U	0.068	U	0.04	U	0.033	U	0.035	U	0.065	U	0.033	U
Caprolactam	mg/Kg	340000	0.077	U	0.083	U	0.16	U	1.2	U	0.074	U	0.16	U	0.095	U	0.078	U	0.083	U	0.15	U	0.078	U
Carbazole	mg/Kg	96	0.017	U	0.018	U	0.3	J	0.25	U	0.016	U	0.16	J	0.021	J	0.017	U	0.018	U	5.5		0.017	U
Chrysene	mg/Kg	230	0.016	U	0.017	U	4.5		0.92	J	0.17	J	5.1		0.02	U	0.016	U	0.017	U	11		0.096	J
Dibenzo(a,h)anthracene	mg/Kg	0.2	0.026	U	0.028	U	**0.95**		0.39	U	0.029	J	**0.63**	J	0.032	U	0.026	U	0.028	U	**2.6**		0.026	U
Dibenzofuran	mg/Kg	--	0.022	U	0.024	U	0.49	J	0.34	U	0.053	J	0.15	J	0.028	U	0.023	U	0.024	U	1.1		0.023	U
Diethyl phthalate	mg/Kg	550000	0.036	U	0.039	U	0.084	J	0.55	U	0.035	U	0.075	U	0.045	U	0.037	U	0.039	U	0.072	U	0.037	U
Dimethyl phthalate	mg/Kg	--	0.023	U	0.025	U	0.048	U	0.35	U	0.022	U	0.048	U	0.028	U	0.023	U	0.025	U	0.046	U	0.023	U
Di-n-butyl phthalate	mg/Kg	68000	0.067	U	0.073	U	0.14	U	1	U	0.065	U	0.14	U	0.083	U	0.069	U	0.073	U	0.13	U	0.069	U
Di-n-octyl phthalate	mg/Kg	27000	0.028	U	0.031	U	0.059	U	0.43	U	0.027	U	0.059	U	0.035	U	0.029	U	0.031	U	0.057	U	0.029	U

TABLE 4-4

ANALYTICAL RESULTS
BARRIER WALL ALIGNMENT SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	BW-17 07/24/08 Sand Primary		BW-17 07/24/08 Clay Primary		BW-18A 04/29/08 Fill Primary		BW-18A 04/29/08 Mat Primary		BW-18A 04/29/08 Sand Primary		BW-18B 07/25/08 Fill Primary		BW-18B 07/28/08 Mat Primary		BW-18B 07/28/08 Sand Primary		BW-18B 07/28/08 Clay Primary		BW-19 07/28/08 Fill Primary		BW-19 07/29/08 Sand Primary	
		Sample Depth	**13.0-17.0 ft**		**22.0-24.0 ft**		**0.5-7.0 ft**		**7.0-10.0 ft**		**10.0-18.0 ft**		**0.0-5.75 ft**		**8.0-13.0 ft**		**13.0-17.75 ft**		**22.0-24.0 ft**		**0.0-7.5 ft**		**12.0-16.25 ft**	
		VOC Sample Depth	**16.0-17.0 ft**		**23.0-24.0 ft**		**6.5-7.0 ft**		**9.0-10.0 ft**		**16.0-17.0 ft**		**5.0-5.75 ft**		**12.0-13.0 ft**		**17.0-17.75 ft**		**23.0-24.0 ft**		**7.0-7.5 ft**		**16.0-16.25 ft**	
Semivolatile Organics (Continued)																								
Fluoranthene	mg/Kg	24000	0.026	U	0.028	U	11		2.4	J	0.45		10		0.032	U	0.027	U	0.028	U	23		0.24	J
Fluorene	mg/Kg	24000	0.02	U	0.021	U	0.73	J	0.3	U	0.058	J	0.47	J	0.024	U	0.02	U	0.021	U	2.1		0.02	U
Hexachlorobenzene	mg/Kg	1	0.024	U	0.026	U	0.051	U	0.37	U	0.023	U	0.051	U	0.03	U	0.025	U	0.026	U	0.049	U	0.025	U
Hexachlorobutadiene	mg/Kg	25	0.025	U	0.027	U	0.052	U	0.38	U	0.024	U	0.052	U	0.031	U	0.025	U	0.027	U	0.05	U	0.025	U
Hexachlorocyclopentadiene	mg/Kg	110	0.019	U	0.02	U	0.039	U	0.28	U	0.018	U	0.039	U	0.023	U	0.019	U	0.02	U	0.037	U	0.019	U
Hexachloroethane	mg/Kg	140	0.018	U	0.02	U	0.038	U	0.28	U	0.017	U	0.038	U	0.022	U	0.018	U	0.02	U	0.036	U	0.019	U
Indeno(1,2,3-cd)pyrene	mg/Kg	2	0.014	U	0.016	U	**3.8**		0.89	J	0.11	J	**2.4**		0.018	U	0.015	U	0.016	U	**9.1**		0.076	J
Isophorone	mg/Kg	2000	0.023	U	0.025	U	0.047	U	0.34	U	0.022	U	0.047	U	0.028	U	0.023	U	0.025	U	0.045	U	0.023	U
Naphthalene	mg/Kg	17	0.035	J	0.021	U	1		0.3	U	0.058	J	1.3		0.076	J	0.22	J	0.021	U	2		0.02	U
Nitrobenzene	mg/Kg	340	0.01	U	0.011	U	0.021	U	0.15	U	0.0097	U	0.021	U	0.012	U	0.01	U	0.011	U	0.02	U	0.01	U
N-Nitrosodiphenylamine	mg/Kg	390	0.022	U	0.024	U	0.046	U	0.34	U	0.021	U	0.046	U	0.027	U	0.022	U	0.024	U	0.044	U	0.022	U
N-Nitrosodipropylamine	mg/Kg	0.3	0.0099	U	0.011	U	0.021	U	0.15	U	0.0096	U	0.021	U	0.012	U	0.01	U	0.011	U	0.02	U	0.01	U
Pentachlorophenol	mg/Kg	10	0.03	U	0.033	U	0.063	U	0.46	U	0.029	U	0.063	U	0.037	U	0.031	U	0.033	U	0.06	U	0.031	U
Phenanthrene	mg/Kg	300000	0.019	U	0.021	U	4.6		1.3	J	0.31	J	6.2		0.05	J	0.02	U	0.021	U	12		0.086	J
Phenol	mg/Kg	210000	0.024	U	0.027	U	0.051	U	0.37	U	0.024	U	0.051	U	0.03	U	0.025	U	0.027	U	0.049	U	0.025	U
Pyrene	mg/Kg	18000	0.025	U	0.027	U	6.7		1.5	J	0.31	J	8.2		0.031	U	0.025	U	0.027	U	16		0.16	J
Polychlorinated Dioxins/Furans																								
1,2,3,4,6,7,8-HpCDD	ug/Kg	--	0.00055	QJ	--		0.36		0.071		0.054		0.4		0.0075	U	0.00032	J	--		0.04	J	0.00024	J
1,2,3,4,6,7,8-HpCDF	ug/Kg	--	0.034	B	--		0.76	B	0.09	B	0.062	B	2	B	0.0034	BJ	0.28	B	--		0.36		0.00094	QBJ
1,2,3,4,7,8,9-HpCDF	ug/Kg	--	0.00095	J	--		0.025	J	0.0029	QJ	0.0022	J	0.049	J	0.0075	U	0.0099		--		0.0085	QJ	0.0062	U
1,2,3,4,7,8-HxCDD	ug/Kg	--	0.0061	U	--		0.0055	J	0.00077	QJ	0.00052	QJ	0.0037	QJ	0.0075	U	0.00015	QJ	--		0.061	U	0.0062	U
1,2,3,4,7,8-HxCDF	ug/Kg	--	0.0098		--		0.2	Q	0.023	J	0.017	Q	0.49	Q	0.0011	J	0.084	Q	--		0.085		0.00025	QJ
1,2,3,6,7,8-HxCDD	ug/Kg	--	0.00018	QJ	--		0.018	J	0.0029	J	0.0026	QJ	0.013	J	0.0075	U	0.00043	QJ	--		0.0018	QJ	0.0062	U
1,2,3,6,7,8-HxCDF	ug/Kg	--	0.0025	QJ	--		0.051	QJ	0.0052	J	0.0037	J	0.11	Q	0.0075	U	0.018	Q	--		0.02	QBJ	0.000086	QJ
1,2,3,7,8,9-HxCDD	ug/Kg	--	0.0061	U	--		0.015	J	0.003	J	0.0023	J	0.012	QJ	0.0075	U	0.00034	J	--		0.0014	QBJ	0.0062	U
1,2,3,7,8,9-HxCDF	ug/Kg	--	0.00017	J	--		0.065	U	0.023	U	0.006	U	0.064	U	0.0075	U	0.00016	QJ	--		0.0017	BJ	0.0062	U
1,2,3,7,8-PCDD	ug/Kg	--	0.0061	U	--		0.0051	J	0.00058	U	0.00054	QJ	0.0057	QJ	0.0075	U	0.00024	J	--		0.061	U	0.0062	U
1,2,3,7,8-PCDF	ug/Kg	--	0.00031	QJ	--		0.011	J	0.00097	QJ	0.0009	QJ	0.019	J	0.0075	U	0.0021	QJ	--		0.0058	QJ	0.0062	U
2,3,4,6,7,8-HxCDF	ug/Kg	--	0.0006	QJ	--		0.021	QBJ	0.0015	BJ	0.0011	BJ	0.033	J	0.0075	U	0.0043	J	--		0.0059	QJ	0.0062	U
2,3,4,7,8-PCDF	ug/Kg	--	0.0011	QJ	--		0.016	J	0.0013	QJ	0.0015	J	0.049	QJ	0.0075	U	0.0071	Q	--		0.01	J	0.0062	U
2,3,7,8-TCDD	ug/Kg	--	0.012	U	--		0.0018	QJ	0.00087	U	0.00019	U	0.013	U	0.0015	U	0.0012	U	--		0.0012	U	0.0012	U
2,3,7,8-TCDF	ug/Kg	--	0.00027	QJ	--		0.012	QJ	0.0019	QJ	0.0012	QJ	0.0066	QJ	0.0075	U	0.00041	QJ	--		0.0089	QJ	0.0012	U
OCDD	ug/Kg	--	0.0067	BJ	--		3.2	B	0.71	B	0.53	B	3.6	B	0.0046	BJ	0.038	B	--		0.44	B	0.0014	BJ
OCDF	ug/Kg	--	0.071	B	--		0.73	B	0.16	B	0.082	B	3	B	0.011	BJ	0.51	B	--		0.66	B	0.0022	QBJ
Total HpCDD	ug/Kg	--	0.0014	QJ	--		0.97		0.19		0.14		0.79		0.035	J	0.00074	QJ	--		0.086	BJ	0.00024	J
Total HpCDF	ug/Kg	--	0.038	B	--		0.9	QB	0.11	QB	0.078	B	2.2	B	0.0038	QBJ	0.32	B	--		0.41	Q	0.00094	QBJ
Total HxCDD	ug/Kg	--	0.0016	QJ	--		0.22	Q	0.042	QJ	0.03	Q	0.16	JQ	0.0075	U	0.00044	JQ	--		0.026	QBJ	0.0062	U
Total HxCDF	ug/Kg	--	0.029	Q	--		0.59	QB	0.06	QJB	0.05	Q	1.3	Q	0.0018	QJ	0.24	Q	--		0.26	QB	0.00056	QJ
Total PeCDD	ug/Kg	--	0.0061	U	--		0.044	QJ	0.0035	QJ	0.0033	QJ	0.069	QJ	0.0075	U	0.0042	JQ	--		0.014	QJ	0.0062	U
Total PeCDF	ug/Kg	--	0.014	JQ	--		0.3	Q	0.025	QJ	0.022	QJ	0.94	Q	0.0075	U	0.11	Q	--		0.14	JQB	0.0062	U
Total TCDD	ug/Kg	--	0.00074	QJ	--		0.019	QJ	0.0032	QJ	0.0014	QJ	0.053	Q	0.0015	U	0.0048	Q	--		0.022	QJ	0.0012	U
Total TCDF	ug/Kg	--	0.0083	Q	--		0.19	Q	0.013	QJ	0.0095	Q	0.88	Q	0.0075	U	0.072	Q	--		0.12	Q	0.0012	U
Polychlorinated Dioxins/Furans (2,3,7,8 Equivalents)																								
1,2,3,4,6,7,8-HpCDD	0.01	--	--		--		3.60E-03		7.10E-04		5.40E-04		4.00E-03		--		3.20E-06		--		4.00E-04		2.40E-06	
1,2,3,4,6,7,8-HpCDF	0.01	--	3.40E-04		--		7.60E-03		9.00E-04		6.20E-04		2.00E-02		3.40E-05		2.80E-03		--		3.60E-03		--	
1,2,3,4,7,8,9-HpCDF	0.01	--	9.50E-06		--		2.50E-04		--		2.20E-05		4.90E-04		--		9.90E-05		--		--		--	
1,2,3,4,7,8-HxCDD	0.10	--	--		--		5.50E-04		--		--		--		--		--		--		--		--	
1,2,3,4,7,8-HxCDF	0.10	--	9.80E-04		--		--		2.30E-03		--		--		1.10E-04		--		--		8.50E-03		--	
1,2,3,6,7,8-HxCDD	0.10	--	--		--		1.80E-03		2.90E-04		--		1.30E-03		--		--		--		--		--	

TABLE 4-4

ANALYTICAL RESULTS
BARRIER WALL ALIGNMENT SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	BW-17 07/24/08 Sand Primary		BW-17 07/24/08 Clay Primary		BW-18A 04/29/08 Fill Primary		BW-18A 04/29/08 Mat Primary		BW-18A 04/29/08 Sand Primary		BW-18B 07/25/08 Fill Primary		BW-18B 07/28/08 Mat Primary		BW-18B 07/28/08 Sand Primary		BW-18B 07/28/08 Clay Primary		BW-19 07/28/08 Fill Primary		BW-19 07/29/08 Sand Primary	
		Sample Depth	**13.0-17.0 ft**		**22.0-24.0 ft**		**0.5-7.0 ft**		**7.0-10.0 ft**		**10.0-18.0 ft**		**0.0-5.75 ft**		**8.0-13.0 ft**		**13.0-17.75 ft**		**22.0-24.0 ft**		**0.0-7.5 ft**		**12.0-16.25 ft**	
		VOC Sample Depth	**16.0-17.0 ft**		**23.0-24.0 ft**		**6.5-7.0 ft**		**9.0-10.0 ft**		**16.0-17.0 ft**		**5.0-5.75 ft**		**12.0-13.0 ft**		**17.0-17.75 ft**		**23.0-24.0 ft**		**7.0-7.5 ft**		**16.0-16.25 ft**	
Polychlorinated Dioxins/Furans (2,3,7,8 Equivalents) (Continu																								
1,2,3,6,7,8-HxCDF	0.10	--	--		--		--		5.20E-04		3.70E-04		--		--		--		--		--		--	
1,2,3,7,8,9-HxCDD	0.10	--	--		--		1.50E-03		3.00E-04		2.30E-04		--		--		3.40E-05		--		--		--	
1,2,3,7,8,9-HxCDF	0.10	--	1.70E-05		--		--		--		--		--		--		--		--		1.70E-04		--	
1,2,3,7,8-PCDD	1.00	--	--		--		5.10E-03		--		--		--		--		2.40E-04		--		--		--	
1,2,3,7,8-PCDF	0.05	--	--		--		5.50E-04		--		--		9.50E-04		--		--		--		--		--	
2,3,4,6,7,8-HxCDF	0.10	--	--		--		--		1.50E-04		1.10E-04		3.30E-03		--		4.30E-04		--		--		--	
2,3,4,7,8-PCDF	0.50	--	--		--		8.00E-03		--		7.50E-04		--		--		--		--		5.00E-03		--	
2,3,7,8-TCDD	1.00	--	--		--		--		--		--		--		--		--		--		--		--	
2,3,7,8-TCDF	0.10	--	--		--		--		--		--		--		--		--		--		--		--	
OCDD	0.0001	--	6.70E-07		--		3.20E-04		7.10E-05		5.30E-05		3.60E-04		4.60E-07		3.80E-06		--		4.40E-05		1.40E-07	
OCDF	0.0001	--	7.10E-06		--		7.30E-05		1.60E-05		8.20E-06		3.00E-04		1.10E-06		5.10E-05		--		6.60E-05		--	
Total 2,3,7,8-TCDD Equivalents[2]	ug/Kg	1	1.35E-03		--		2.93E-02		5.26E-03		2.70E-03		3.07E-02		1.46E-04		3.66E-03		--		1.78E-02		2.54E-06	
Polychlorinated Biphenyls (Aroclors)																								
Aroclor 1016	mg/Kg	1	0.003	U	--		0.0032	U	0.012	U	0.003	U	0.0032	U	0.0037	U	0.0031	U	--		0.003	U	0.0031	U
Aroclor 1221	mg/Kg	1	0.0039	U	--		0.0041	U	0.015	U	0.0038	U	0.004	U	0.0047	U	0.004	U	--		0.0039	U	0.004	U
Aroclor 1232	mg/Kg	1	0.0035	U	--		0.0036	U	0.013	U	0.0034	U	0.0036	U	0.0043	U	0.0036	U	--		0.0035	U	0.0036	U
Aroclor 1242	mg/Kg	1	0.0033	U	--		0.0035	U	0.013	U	0.0032	U	0.0035	U	0.0041	U	0.0034	U	--		0.0033	U	0.0034	U
Aroclor 1248	mg/Kg	1	0.0019	U	--		0.002	U	0.0074	U	0.0019	U	0.002	U	0.0024	U	0.002	U	--		0.0019	U	0.002	U
Aroclor 1254	mg/Kg	1	0.0029	U	--		0.003	U	0.011	U	0.0028	U	0.2		0.0035	U	0.003	U	--		0.0029	U	0.003	U
Aroclor 1260	mg/Kg	1	0.0029	U	--		0.003	U	0.011	U	0.0028	U	0.11		0.0035	U	0.003	U	--		0.0029	U	0.003	U
Aroclor 1262	mg/Kg	1	0.0045	U	--		0.0047	U	0.017	U	0.0043	U	0.0046	U	0.0054	U	0.0046	U	--		0.0045	U	0.0046	U
Aroclor 1268	mg/Kg	1	0.0026	U	--		0.0027	U	0.01	U	0.0025	U	0.0027	U	0.0032	U	0.0027	U	--		0.0026	U	0.0027	U
Metals																								
Aluminum	mg/Kg	--	4020		13600		4520	J	1600	J	2980	J	6740		2920	J	4870	J	10100	J	2680	J	3310	J
Antimony	mg/Kg	450	0.11	U	0.12	U	19.5		4.8		0.11	U	1.9		0.14	U	0.11	U	0.22	BJ	1.1	BJ	0.11	U
Arsenic	mg/Kg	19	1.8		8.2		**54.9**		11.5		1.2		14.7		0.72	B	2.1		5.1		10.5		3.1	
Barium	mg/Kg	59000	15.5	B	85.7		119		46.3	B	15.6	B	134		22.9	B	28.5		71.5		64		15.7	B
Beryllium	mg/Kg	140	0.31	B	0.84		0.51	B	0.14	U	0.25	B	0.49	B	0.21	B	0.44	B	0.79		0.49		0.34	B
Cadmium	mg/Kg	78	0.13	B	0.52	B	0.061	U	0.22	U	0.056	U	1.3		0.071	U	0.058	U	0.062	U	0.057	U	0.059	U
Calcium	mg/Kg	--	550	B	6220		3810		19900		558	B	11800		2160		621	B	6020		1550		534	B
Chromium[3]	mg/Kg	120000	8.7		21.8		168	J	28.7	J	8.1	J	378		18.5		12.3		17.6		107		8.9	
Chromium (Hexavalent)[3]	mg/Kg	20	0.4	U	0.4	U	13.4		0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
Cobalt	mg/Kg	590	4.3	B	12.9		7.9		1.2	B	2.5	B	16.9		1.1	B	3.7	B	10.3		4.9	B	3.3	B
Copper	mg/Kg	45000	5.9		26.7		59.1		11.9		5.7		195		2.5	B	6.7		20.4		57.4		6.3	
Iron	mg/Kg	--	9490		31600		37300	J	13300	J	8180	J	35100	J	4000		11800		24300		18700		11300	
Lead	mg/Kg	800	3.1		13.3		**3730**		346		3.6		213		3	JB	3.8	J	12.1	J	88.6	J	2.8	J
Magnesium	mg/Kg	--	1370		8190		1710		3360		1110		5080		1540		1570		6790		740		1370	
Manganese	mg/Kg	5900	66.8		629		107		229		37.5		526	J	114		58.5		541		132		61.3	
Mercury	mg/Kg	65	0.0087	U	0.02	B	0.87		0.36		0.0085	U	0.74		0.014	B	0.0089	U	NA		0.29		0.0089	U
Nickel	mg/Kg	23000	7.3		27.8		21.5		4.6	B	6		65.4		3	B	8.4	J	22	J	14.7	J	7.3	J
Potassium	mg/Kg	--	356	B	1840		581	B	409	B	325	B	515	B	237	B	396	B	1400		286	B	343	B
Selenium	mg/Kg	5700	0.35	U	0.38	U	3.7		2.5		0.34	U	0.86		0.43	U	0.36	U	0.38	U	0.98		0.36	U
Silver	mg/Kg	5700	0.045	U	0.19	B	0.34	B	0.17	U	0.044	U	0.65		0.056	U	0.046	U	0.06	B	0.16	B	0.046	U
Sodium	mg/Kg	--	193	B	282	B	153	B	1540	B	58.6	B	292	B	919		155	B	444	B	210	B	218	B
Thallium	mg/Kg	79	0.39	U	0.43	U	1.7		1.5	U	0.38	U	0.67	B	0.48	U	0.4	U	0.43	U	0.39	U	0.4	U
Vanadium	mg/Kg	1100	11.7		26.7		44.5		10.3	B	12		127		7.3	B	18		22.2		34.2		12.2	
Zinc	mg/Kg	110000	17.7		69		250		50.1		39.8		449		8.7	J	21	J	56.3	J	74	J	16.8	J

TABLE 4-4

ANALYTICAL RESULTS
BARRIER WALL ALIGNMENT SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	BW-17 07/24/08 Sand Primary		BW-17 07/24/08 Clay Primary		BW-18A 04/29/08 Fill Primary		BW-18A 04/29/08 Mat Primary		BW-18A 04/29/08 Sand Primary		BW-18B 07/25/08 Fill Primary		BW-18B 07/28/08 Mat Primary		BW-18B 07/28/08 Sand Primary		BW-18B 07/28/08 Clay Primary		BW-19 07/28/08 Fill Primary		BW-19 07/29/08 Sand Primary	
		Sample Depth	**13.0-17.0 ft**		**22.0-24.0 ft**		**0.5-7.0 ft**		**7.0-10.0 ft**		**10.0-18.0 ft**		**0.0-5.75 ft**		**8.0-13.0 ft**		**13.0-17.75 ft**		**22.0-24.0 ft**		**0.0-7.5 ft**		**12.0-16.25 ft**	
		VOC Sample Depth	**16.0-17.0 ft**		**23.0-24.0 ft**		**6.5-7.0 ft**		**9.0-10.0 ft**		**16.0-17.0 ft**		**5.0-5.75 ft**		**12.0-13.0 ft**		**17.0-17.75 ft**		**23.0-24.0 ft**		**7.0-7.5 ft**		**16.0-16.25 ft**	
Toxicity Characteristic Leacing Procedure[4]																								
1,1-Dichloroethene	mg/L	0.7	0.035	U	--		0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	--		0.035	U	0.035	U
1,2-Dichloroethane	mg/L	0.5	0.026	U	--		0.026	U	0.026	U	0.026	U	0.026	U	0.026	U	0.026	U	--		0.026	U	0.026	U
1,4-Dichlorobenzene	mg/L	7.5	0.81		--		2.7		4.3		2.2		0.0046	U	0.022	J	**27**		--		0.028	J	0.0046	U
2,4,5-Trichlorophenol	mg/L	400	0.0041	U	--		0.0041	U	0.0041	U	0.0041	U	0.0041	U	0.0041	U	0.0041	U	--		0.0041	U	0.0041	U
2,4,6-Trichlorophenol	mg/L	2	0.0026	U	--		0.0026	U	0.0026	U	0.0026	U	0.0026	U	0.0026	U	0.0026	U	--		0.0026	U	0.0026	U
2,4-Dinitrotoluene	mg/L	0.13	0.0028	U	--		0.0028	U	0.0028	U	0.0028	U	0.0028	U	0.0028	U	0.0028	U	--		0.0028	U	0.0028	U
2-Butanone	mg/L	200	0.029	U	--		0.029	U	0.029	U	0.029	U	0.029	U	0.029	U	0.029	U	--		0.029	U	0.029	U
Benzene	mg/L	0.5	0.033	U	--		0.071	J	0.072	J	0.033	U	0.033	U	0.033	U	0.033	U	--		0.033	U	0.033	U
Carbon Tetrachloride	mg/L	0.5	0.037	U	--		0.037	U	0.037	U	0.037	U	0.037	U	0.037	U	0.037	U	--		0.037	U	0.037	U
Chlorobenzene	mg/L	100	0.028	U	--		3.4		5.3		0.17	J	0.028	U	0.028	U	0.2		--		0.028	U	0.028	U
Chloroform	mg/L	6	0.031	U	--		0.031	U	0.031	U	0.031	U	0.031	U	0.031	U	0.031	U	--		0.031	U	0.031	U
Cresols	mg/L	200	0.0089	U	--		0.0089	U	0.0089	U	0.0089	U	0.0089	U	0.0089	U	0.0089	U	--		0.0089	U	0.0089	U
Hexachlorobenzene	mg/L	0.13	0.0049	U	--		0.0049	U	0.0049	U	0.0049	U	0.0049	U	0.0049	U	0.0049	U	--		0.0049	U	0.0049	U
Hexachlorobutadiene	mg/L	0.5	0.0033	U	--		0.0033	U	0.0033	U	0.0033	U	0.0033	U	0.0033	U	0.0033	U	--		0.0033	U	0.0033	U
Hexachloroethane	mg/L	3	0.0036	U	--		0.0036	U	0.0036	U	0.0036	U	0.0036	U	0.0036	U	0.0036	U	--		0.0036	U	0.0036	U
Nitrobenzene	mg/L	2	0.0056	U	--		0.0056	U	0.0056	U	0.0056	U	0.0056	U	0.0056	U	0.0056	U	--		0.0056	U	0.0056	U
Pentachlorophenol	mg/L	100	0.005	U	--		0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	--		0.005	U	0.005	U
Pyridine	mg/L	5	0.011	U	--		0.011	U	0.011	U	0.011	U	0.011	U	0.011	U	0.011	U	--		0.011	U	0.011	U
Tetrachloroethene	mg/L	0.7	0.023	U	--		0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	--		0.023	U	0.023	U
Trichloroethene	mg/L	0.5	0.035	U	--		0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	--		0.035	U	0.035	U
Vinyl chloride	mg/L	0.2	0.038	U	--		0.038	U	0.038	U	0.038	U	0.038	U	0.038	U	0.038	U	--		0.038	U	0.038	U
Arsenic	mg/L	5	0.18	B	--		0.025	B	0.0072	B	0.0028	B	0.15	B	0.14	B	0.2	B	--		0.2	B	0.19	B
Barium	mg/L	100	0.22	BJ	--		1.3	BJ	0.15	BJ	0.29	B	0.79	BJ	0.089	BJ	0.29	BJ	--		0.23	BJ	0.25	BJ
Cadmium	mg/L	1	0.0012	U	--		0.0054	B	0.00023	U	0.00023	U	0.0061	B	0.0012	U	0.0012	U	--		0.0012	U	0.0012	U
Chromium	mg/L	5	0.015	B	--		0.013	B	0.003	B	0.0041	B	0.027	B	0.0025	B	0.0041	B	--		0.0078	B	0.003	B
Lead	mg/L	5	0.013	U	--		**16.1**		0.021	B	0.0043	B	0.11	B	0.013	U	0.013	U	--		0.013	U	0.013	U
Mercury	mg/L	0.2	0.000055	U	--		0.000055	U	0.000055	U	0.000055	U	0.000055	U	0.000055	U	0.000055	U	--		0.000083	B	0.000055	U
Selenium	mg/L	1	0.015	U	--		0.0092	B	0.0092	B	0.0081	B	0.015	U	0.015	U	0.015	U	--		0.015	U	0.015	U
Silver	mg/L	5	0.0025	U	--		0.00088	B	0.00081	B	0.00059	U	0.0025	U	0.0025	U	0.0025	U	--		0.0025	U	0.0025	U
RCRA Characteristics and Indicators																								
Corrosivity (pH)	SU	2<pH<12.5	7.25		--		7.44		7.21		6.5		8.53		7.43		6.54		--		7.83		5.23	
Cyanide	mg/Kg	23000	0.12	U	--		0.12	U	0.45	U	0.11	U	0.56	B	0.14	U	0.12	U	--		0.41	B	0.7	J
Total Sulfide (Reactivity)	mg/Kg	--	58.5		--		217		224		38.1		366		18.5	U	15.3	U	--		15	U	15.3	U
Ignitability	None	--	No		--		No		No		No		No		No		No		--		No		No	
Oxidation Reduction Potential	mV	--	599		605		300		314		328		436		609		584		583		554		492	
Percent Solids	%	--	82		75.3		77.5		21.4		84		78.6		66.4		80.2		75.3		81.8		80.1	

TABLE 4-4

ANALYTICAL RESULTS
BARRIER WALL ALIGNMENT SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	BW-19 07/29/08 Sand Duplicate		BW-19 07/29/08 Clay Primary		BW-20 07/24/08 Fill Primary		BW-20 07/25/08 Mat Primary		BW-20 07/25/08 Sand Primary		BW-20 07/25/08 Clay Primary		BW-21 07/29/08 Fill Primary		BW-21 07/29/08 Mat Primary		BW-21 07/29/08 Sand Primary	
		Sample Depth	**12.0-16.25 ft**		**22.0-24.0 ft**		**0.0-4.0 ft**		**6.0-10.0 ft**		**10.0-15.25 ft**		**24.0-26.0 ft**		**0.0-6.0 ft**		**8.0-10.5 ft**		**10.5-16.0 ft**	
		VOC Sample Depth	**16.0-16.25 ft**		**23.0-24.0 ft**		**2.0-3.0 ft**		**8.0-9.0 ft**		**15.0-15.25 ft**		**25.0-26.0 ft**		**5.0-6.0 ft**		**10.0-10.5 ft**		**15.0-16.0 ft**	
Volatile Organics																				
1,1,1-Trichloroethane	mg/Kg	4200	0.06	U	0.00061	U	16	U	0.2	U	23	U	0.056	U	0.00051	U	0.00063	U	0.00052	U
1,1,2,2-Tetrachloroethane	mg/Kg	3	0.067	U	0.0009	U	18	U	0.23	U	26	U	0.063	U	0.00075	U	0.00093	U	0.00077	U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg	6	0.063	U	0.001	U	17	U	0.21	U	24	U	0.059	U	0.00087	U	0.0011	U	0.00089	U
1,1,2-Trichloroethane	mg/Kg	--	0.073	U	0.0013	U	19	U	0.25	U	28	U	0.068	U	0.0011	U	0.0014	U	0.0011	U
1,1-Dichloroethane	mg/Kg	24	0.058	U	0.00072	U	15	U	0.2	U	22	U	0.054	U	0.0006	U	0.00075	U	0.00062	U
1,1-Dichloroethene	mg/Kg	150	0.069	U	0.0011	U	18	U	0.24	U	27	U	0.065	U	0.00089	U	0.0011	U	0.00091	U
1,2,4-Trichlorobenzene	mg/Kg	820	0.061	U	0.0011	U	16	U	0.21	U	58	J	0.057	U	0.00092	U	0.0011	U	0.00094	U
1,2-Dibromoethane	mg/Kg	0.04	0.062	U	0.0011	U	16	U	0.21	U	24	U	0.057	U	0.0009	U	0.0011	U	0.00092	U
1,2-Dichlorobenzene	mg/Kg	59000	0.76		0.001	U	17	U	0.5	J	2600		0.51		0.00083	U	0.001	U	0.00085	U
1,2-Dichloroethane	mg/Kg	3	0.065	U	0.00077	U	17	U	0.22	U	25	U	0.06	U	0.00064	U	0.0008	U	0.00066	U
1,2-Dichloropropane	mg/Kg	5	0.066	U	0.00068	U	17	U	0.22	U	25	U	0.061	U	0.00057	U	0.0007	U	0.00058	U
1,3-Dichlorobenzene	mg/Kg	59000	0.63		0.00083	U	16	U	0.53	J	2900		0.58		0.00068	U	0.00085	U	0.0007	U
1,4-Dichlorobenzene	mg/Kg	13	0.98		0.0008	U	17	U	0.69	J	**3400**		0.66		0.00066	U	0.00083	U	0.00068	U
2-Butanone	mg/Kg	44000	0.058	U	0.0011	U	15	U	0.2	U	22	U	0.054	U	0.00092	U	0.0011	U	0.00094	U
2-Hexanone	mg/Kg	--	0.047	U	0.00087	U	12	U	0.16	U	18	U	0.044	U	0.00072	U	0.0009	U	0.00074	U
4-Methyl-2-pentanone	mg/Kg	--	0.051	U	0.00082	U	19	U	0.24	U	27	U	0.066	U	0.00068	U	0.00085	U	0.0007	U
Acetone	mg/Kg	--	0.071	U	0.0063	U	19	U	24		27	U	0.066	U	0.0052	U	0.0065	U	0.0054	U
Benzene	mg/Kg	5	0.061	U	0.00085	U	**120**		1.2		24	U	0.057	U	0.0007	U	0.00088	U	0.00072	U
Bromodichloromethane	mg/Kg	3	0.058	U	0.00071	U	15	U	0.2	U	22	U	0.054	U	0.00059	U	0.00073	U	0.0006	U
Bromoform	mg/Kg	280	0.06	U	0.00056	U	16	U	0.2	U	23	U	0.056	U	0.00046	U	0.00057	U	0.00047	U
Bromomethane	mg/Kg	59	0.075	U	0.00093	U	20	U	0.25	U	29	U	0.07	U	0.00077	U	0.00096	U	0.00079	U
Carbon disulfide	mg/Kg	110000	0.073	U	0.00064	U	19	U	0.25	U	28	U	0.068	U	0.00053	U	0.00066	U	0.00055	U
Carbon tetrachloride	mg/Kg	2	0.053	U	0.00056	U	14	U	0.18	U	21	U	0.049	U	0.00047	U	0.00058	U	0.00048	U
Chlorobenzene	mg/Kg	7400	0.066	U	0.00095	U	17	U	0.22	U	32	J	0.061	U	0.00079	U	0.00098	U	0.00081	U
Chloroethane	mg/Kg	1100	0.085	U	0.002	U	22	U	0.29	U	33	U	0.079	U	0.0016	U	0.002	U	0.0017	U
Chloroform	mg/Kg	2	0.063	U	0.00074	U	17	U	0.21	U	24	U	0.058	U	0.00061	U	0.00076	U	0.00063	U
Chloromethane	mg/Kg	12	0.066	U	0.0011	U	17	U	0.22	U	25	U	0.061	U	0.00089	U	0.0011	U	0.00091	U
cis-1,2-Dichloroethene	mg/Kg	560	0.064	U	0.00089	U	17	U	0.22	U	25	U	0.06	U	0.00073	U	0.00091	U	0.00075	U
cis-1,3-Dichloropropene	mg/Kg	7	0.053	U	0.00085	U	14	U	0.18	U	21	U	0.05	U	0.00071	U	0.00088	U	0.00073	U
Cyclohexane	mg/Kg	--	0.059	U	0.00047	U	16	U	0.2	U	23	U	0.055	U	0.00039	U	0.00048	U	0.0004	U
Dibromochloromethane	mg/Kg	--	0.055	U	0.00089	U	14	U	0.19	U	21	U	0.051	U	0.00074	U	0.00092	U	0.00076	U
Dibromochloropropane	mg/Kg	8	0.05	U	0.00094	U	13	U	0.17	U	19	U	0.046	U	0.00078	U	0.00097	U	0.0008	U
Dichlorodifluoromethane	mg/Kg	230000	0.076	U	0.00084	U	20	U	0.26	U	29	U	0.07	U	0.00069	U	0.00086	U	0.00071	U
Ethylbenzene	mg/Kg	110000	0.07	U	0.00081	U	18	U	0.24	U	27	U	0.065	U	0.00067	U	0.00083	U	0.00069	U
Isopropylbenzene	mg/Kg	--	0.063	U	0.00085	U	17	U	0.22	U	25	U	0.059	U	0.00071	U	0.00088	U	0.00073	U
Methyl acetate	mg/Kg	--	0.063	U	0.0011	U	17	U	0.21	U	24	U	0.059	U	0.00094	U	0.0012	U	0.00096	U
Methylcyclohexane	mg/Kg	--	0.066	U	0.00091	U	17	U	0.23	U	26	U	0.062	U	0.00076	U	0.00094	U	0.00078	U
Methylene chloride	mg/Kg	97	0.047	J	0.00085	U	12	U	0.15	U	18	U	0.042	U	0.0007	U	0.00087	U	0.0023	J
Methyltert-butylether	mg/Kg	320	0.055	U	0.00094	U	14	U	0.19	U	21	U	0.051	U	0.00078	U	0.00097	U	0.0008	U
Styrene	mg/Kg	260	0.066	U	0.00067	U	17	U	0.22	U	26	U	0.061	U	0.00055	U	0.00069	U	0.00057	U
Tetrachloroethene	mg/Kg	5	0.077	U	0.00086	U	20	U	0.26	U	30	U	0.072	U	0.00071	U	0.00088	U	0.00073	U
Toluene	mg/Kg	91000	0.047	U	0.00092	U	75	J	0.84	J	18	U	0.044	U	0.00076	U	0.00095	U	0.00078	U
trans-1,2-Dichloroethene	mg/Kg	720	0.069	U	0.00075	U	18	U	0.23	U	27	U	0.064	U	0.00062	U	0.00077	U	0.00064	U
trans-1,3-Dichloropropene	mg/Kg	7	0.052	U	0.00075	U	14	U	0.18	U	20	U	0.048	U	0.00062	U	0.00078	U	0.00064	U
Trichloroethene	mg/Kg	20	0.066	U	0.00083	U	17	U	0.23	U	26	U	0.062	U	0.00069	U	0.00085	U	0.0007	U
Trichlorofluoromethane	mg/Kg	340000	0.096	U	0.0012	U	25	U	0.33	U	37	U	0.089	U	0.00096	U	0.0012	U	0.00098	U
Vinyl chloride	mg/Kg	2	0.066	U	0.00059	U	17	U	0.22	U	26	U	0.062	U	0.00049	U	0.00061	U	0.0005	U
Xylene (total)	mg/Kg	170000	0.21	U	0.0028	U	96	J	1.3	J	81	U	0.19	U	0.0023	U	0.0029	U	0.0024	U

TABLE 4-4

ANALYTICAL RESULTS
BARRIER WALL ALIGNMENT SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	BW-19 07/29/08 Sand Duplicate		BW-19 07/29/08 Clay Primary		BW-20 07/24/08 Fill Primary		BW-20 07/25/08 Mat Primary		BW-20 07/25/08 Sand Primary		BW-20 07/25/08 Clay Primary		BW-21 07/29/08 Fill Primary		BW-21 07/29/08 Mat Primary		BW-21 07/29/08 Sand Primary	
		Sample Depth	**12.0-16.25 ft**		**22.0-24.0 ft**		**0.0-4.0 ft**		**6.0-10.0 ft**		**10.0-15.25 ft**		**24.0-26.0 ft**		**0.0-6.0 ft**		**8.0-10.5 ft**		**10.5-16.0 ft**	
		VOC Sample Depth	**16.0-16.25 ft**		**23.0-24.0 ft**		**2.0-3.0 ft**		**8.0-9.0 ft**		**15.0-15.25 ft**		**25.0-26.0 ft**		**5.0-6.0 ft**		**10.0-10.5 ft**		**15.0-16.0 ft**	
Semivolatile Organics																				
1,1'-Biphenyl	mg/Kg	34000	0.023	U	0.024	U	66		18	J	0.56		0.024	U	0.11	J	0.03	U	0.023	U
2,2'-oxybis(1-chloropropane)	mg/Kg	--	0.025	U	0.026	U	1.1	U	2.5	U	0.024	U	0.026	U	0.055	U	0.032	U	0.025	U
2,4,5-Trichlorophenol	mg/Kg	68000	0.034	U	0.036	U	1.6	U	3.4	U	0.033	U	0.035	U	0.076	U	0.044	U	0.035	U
2,4,6-Trichlorophenol	mg/Kg	74	0.033	U	0.035	U	1.5	U	3.3	U	0.032	U	0.035	U	0.074	U	0.043	U	0.034	U
2,4-Dichlorophenol	mg/Kg	2100	0.012	U	0.013	U	0.57	U	1.2	U	0.29	J	0.013	U	0.027	U	0.016	U	0.012	U
2,4-Dimethylphenol	mg/Kg	14000	0.046	J	0.019	U	28		9.3	J	2.2		0.018	U	0.092	J	0.036	J	0.018	U
2,4-Dinitrophenol	mg/Kg	1400	0.48	U	0.51	U	23	U	49	U	0.47	U	0.51	U	1.1	U	0.64	U	0.5	U
2,4-Dinitrotoluene	mg/Kg	3	0.021	U	0.022	U	0.99	U	2.1	U	0.021	U	0.022	U	0.047	U	0.028	U	0.022	U
2,6-Dinitrotoluene	mg/Kg	3	0.026	U	0.028	U	1.2	U	2.7	U	0.026	U	0.028	U	0.059	U	0.035	U	0.027	U
2-Chloronaphthalene	mg/Kg	--	0.024	U	0.025	U	1.1	U	2.4	U	0.023	U	0.025	U	0.053	U	0.031	U	0.024	U
2-Chlorophenol	mg/Kg	2200	0.021	U	0.022	U	0.96	U	2.1	U	0.02	U	0.022	U	0.046	U	0.027	U	0.021	U
2-Methylnaphthalene	mg/Kg	2400	0.023	U	0.024	U	370		95		2.8		0.024	U	0.5	J	0.038	J	0.023	U
2-Methylphenol	mg/Kg	3400	0.026	U	0.027	U	21		8.1	J	0.025	U	0.027	U	0.11	J	0.034	U	0.026	U
2-Nitroaniline	mg/Kg	23000	0.025	U	0.026	U	1.1	U	2.5	U	0.024	U	0.026	U	0.055	U	0.032	U	0.025	U
2-Nitrophenol	mg/Kg	--	0.033	U	0.034	U	1.5	U	3.3	U	0.032	U	0.034	U	0.073	U	0.043	U	0.033	U
3,3'-Dichlorobenzidine	mg/Kg	4	0.092	U	0.097	U	4.3	U	9.3	U	0.09	U	0.096	U	0.21	U	0.12	U	0.094	U
3-Nitroaniline	mg/Kg	--	0.035	U	0.037	U	1.6	U	3.6	U	0.034	U	0.037	U	0.079	U	0.046	U	0.036	U
4,6-Dinitro-2-methylphenol	mg/Kg	68	0.29	U	0.3	U	13	U	29	U	0.28	U	0.3	U	0.65	U	0.38	U	0.3	U
4-Bromophenylphenyl ether	mg/Kg	--	0.018	U	0.019	U	0.86	U	1.9	U	0.018	U	0.019	U	0.041	U	0.024	U	0.019	U
4-Chloro-3-methylphenol	mg/Kg	--	0.025	U	0.026	U	1.2	U	2.5	U	0.024	U	0.026	U	0.056	U	0.033	U	0.026	U
4-Chloroaniline	mg/Kg	--	0.035	U	0.037	U	1.6	U	3.6	U	0.034	U	0.037	U	0.079	U	0.046	U	0.036	U
4-Chlorophenyl phenyl ether	mg/Kg	--	0.02	U	0.021	U	0.95	U	2	U	0.02	U	0.021	U	0.045	U	0.027	U	0.021	U
4-Methylphenol	mg/Kg	340	0.026	U	0.027	U	54		22	J	0.025	U	0.027	U	0.18	J	0.034	U	0.026	U
4-Nitroaniline	mg/Kg	--	0.017	U	0.018	U	0.8	U	1.7	U	0.017	U	0.018	U	0.039	U	0.023	U	0.018	U
4-Nitrophenol	mg/Kg	--	0.032	U	0.034	U	1.5	U	3.2	U	0.031	U	0.033	U	0.072	U	0.042	U	0.033	U
Acenaphthene	mg/Kg	37000	0.021	U	0.022	U	240		44		0.94		0.022	U	0.21	J	0.028	U	0.022	U
Acenaphthylene	mg/Kg	300000	0.024	U	0.025	U	360		170		0.65		0.025	U	0.97		0.031	U	0.024	U
Acetophenone	mg/Kg	5	0.025	U	0.026	U	1.2	U	2.5	U	0.024	U	0.026	U	0.063	J	0.033	U	0.025	U
Anthracene	mg/Kg	30000	0.063	J	0.024	U	390		120		0.64		0.024	U	1.4		0.08	J	0.024	U
Atrazine	mg/Kg	2400	0.028	U	0.03	U	1.3	U	2.9	U	0.027	U	0.03	U	0.063	U	0.037	U	0.029	U
Benzaldehyde	mg/Kg	68000	0.043	U	0.046	U	2	U	4.4	U	0.042	U	0.046	U	0.097	U	0.057	U	0.044	U
Benzo(a)anthracene	mg/Kg	2	0.11	J	0.017	U	**400**		**110**		0.67		0.017	U	**7.2**		0.17	J	0.017	U
Benzo(a)pyrene	mg/Kg	0.2	0.08	J	0.013	U	**330**		**90**		**0.53**		0.013	U	**7.6**		0.17	J	0.013	U
Benzo(b)fluoranthene	mg/Kg	2	0.12	J	0.017	U	**470**		**140**		0.72		0.016	U	**12**		0.19	J	0.016	U
Benzo(ghi)perylene	mg/Kg	30000	0.037	J	0.015	U	180		49		0.33	J	0.015	U	6.4		0.059	J	0.014	U
Benzo(k)fluoranthene	mg/Kg	23	0.013	U	0.014	U	0.61	U	1.3	U	0.013	U	0.014	U	0.029	U	0.017	U	0.013	U
Bis(2-chloroethoxy)methane	mg/Kg	--	0.019	U	0.02	U	0.89	U	1.9	U	0.019	U	0.02	U	0.043	U	0.025	U	0.02	U
Bis(2-chloroethyl)ether	mg/Kg	2	0.0092	U	0.0097	U	0.43	U	0.93	U	0.009	U	0.0097	U	0.021	U	0.012	U	0.0094	U
Bis(2-ethylhexyl)phthalate	mg/Kg	140	0.49		0.033	U	1.5	U	3.2	U	0.031	U	0.033	U	0.07	U	0.1	J	0.032	U
Butyl benzyl phthalate	mg/Kg	14000	0.033	U	0.035	U	1.5	U	3.3	U	0.032	U	0.034	U	0.074	U	0.043	U	0.034	U
Caprolactam	mg/Kg	340000	0.078	U	0.082	U	3.6	U	7.8	U	0.075	U	0.081	U	0.17	U	0.1	U	0.079	U
Carbazole	mg/Kg	96	0.02	J	0.018	U	**190**		58		0.31	J	0.018	U	0.7	J	0.047	J	0.017	U
Chrysene	mg/Kg	230	0.08	J	0.017	U	**320**		97		0.5		0.017	U	7		0.19	J	0.017	U
Dibenzo(a,h)anthracene	mg/Kg	0.2	0.026	U	0.027	U	**52**		**13**	J	0.084	J	0.027	U	**1.3**		0.034	U	0.027	U
Dibenzofuran	mg/Kg	--	0.023	U	0.024	U	350		93		0.9		0.024	U	0.43	J	0.03	U	0.023	U
Diethyl phthalate	mg/Kg	550000	0.037	U	0.038	U	1.7	U	3.7	U	0.036	U	0.038	U	0.082	U	0.048	U	0.037	U
Dimethyl phthalate	mg/Kg	--	0.023	U	0.024	U	1.1	U	2.3	U	0.023	U	0.024	U	0.052	U	0.03	U	0.024	U
Di-n-butyl phthalate	mg/Kg	68000	0.068	U	0.071	U	3.2	U	6.9	U	0.066	U	0.071	U	0.15	U	0.089	U	0.069	U
Di-n-octyl phthalate	mg/Kg	27000	0.029	U	0.03	U	1.3	U	2.9	U	0.028	U	0.03	U	0.064	U	0.038	U	0.029	U

TABLE 4-4

ANALYTICAL RESULTS
BARRIER WALL ALIGNMENT SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	BW-19 07/29/08 Sand Duplicate		BW-19 07/29/08 Clay Primary		BW-20 07/24/08 Fill Primary		BW-20 07/25/08 Mat Primary		BW-20 07/25/08 Sand Primary		BW-20 07/25/08 Clay Primary		BW-21 07/29/08 Fill Primary		BW-21 07/29/08 Mat Primary		BW-21 07/29/08 Sand Primary	
		Sample Depth	**12.0-16.25 ft**		**22.0-24.0 ft**		**0.0-4.0 ft**		**6.0-10.0 ft**		**10.0-15.25 ft**		**24.0-26.0 ft**		**0.0-6.0 ft**		**8.0-10.5 ft**		**10.5-16.0 ft**	
		VOC Sample Depth	**16.0-16.25 ft**		**23.0-24.0 ft**		**2.0-3.0 ft**		**8.0-9.0 ft**		**15.0-15.25 ft**		**25.0-26.0 ft**		**5.0-6.0 ft**		**10.0-10.5 ft**		**15.0-16.0 ft**	
Semivolatile Organics (Continued)																				
Fluoranthene	mg/Kg	24000	0.27	J	0.028	U	1300		310		1.9		0.028	U	11		0.28	J	0.027	U
Fluorene	mg/Kg	24000	0.02	U	0.021	U	570		150		1		0.021	U	0.38	J	0.026	U	0.02	U
Hexachlorobenzene	mg/Kg	1	0.025	U	0.026	U	1.1	U	2.5	U	0.024	U	0.026	U	0.055	U	0.032	U	0.025	U
Hexachlorobutadiene	mg/Kg	25	0.025	U	0.026	U	1.2	U	2.5	U	0.024	U	0.026	U	0.056	U	0.033	U	0.026	U
Hexachlorocyclopentadiene	mg/Kg	110	0.019	U	0.02	U	0.88	U	1.9	U	0.018	U	0.02	U	0.042	U	0.025	U	0.019	U
Hexachloroethane	mg/Kg	140	0.018	U	0.019	U	0.86	U	1.9	U	0.018	U	0.019	U	0.041	U	0.024	U	0.019	U
Indeno(1,2,3-cd)pyrene	mg/Kg	2	0.037	J	0.015	U	**150**		**47**		0.29	J	0.015	U	**4.9**		0.053	J	0.015	U
Isophorone	mg/Kg	2000	0.023	U	0.024	U	1.1	U	2.3	U	0.022	U	0.024	U	0.051	U	0.03	U	0.023	U
Naphthalene	mg/Kg	17	0.02	U	0.021	U	**1600**		**360**		13		0.021	U	1.4		0.057	J	0.02	U
Nitrobenzene	mg/Kg	340	0.01	U	0.011	U	0.48	U	1	U	0.0099	U	0.011	U	0.023	U	0.013	U	0.01	U
N-Nitrosodiphenylamine	mg/Kg	390	0.022	U	0.023	U	1	U	2.2	U	0.022	U	0.023	U	0.05	U	0.029	U	0.023	U
N-Nitrosodipropylamine	mg/Kg	0.3	0.01	U	0.011	U	0.47	U	1	U	0.0098	U	0.01	U	0.022	U	0.013	U	0.01	U
Pentachlorophenol	mg/Kg	10	0.03	U	0.032	U	1.4	U	3.1	U	0.03	U	0.032	U	0.068	U	0.04	U	0.031	U
Phenanthrene	mg/Kg	300000	0.23	J	0.021	U	1900		460		2.8		0.021	U	3.7		0.26	J	0.02	U
Phenol	mg/Kg	210000	0.025	U	0.026	U	32		13	J	1.2		0.026	U	0.055	U	0.032	U	0.025	U
Pyrene	mg/Kg	18000	0.18	J	0.026	U	760		220		1.1		0.026	U	8.4		0.22	J	0.026	U
Polychlorinated Dioxins/Furans																				
1,2,3,4,6,7,8-HpCDD	ug/Kg	--	0.0062	U	--		0.7		0.13		0.048	J	--		0.015	J	0.00053	QJ	0.00025	QJ
1,2,3,4,6,7,8-HpCDF	ug/Kg	--	0.00019	QBJ	--		0.37		0.72	B	17	B	--		0.33	B	0.0049	BJ	0.0022	BJ
1,2,3,4,7,8,9-HpCDF	ug/Kg	--	0.0062	U	--		0.036	J	0.022	J	0.42		--		0.018	J	0.00055	J	0.0063	U
1,2,3,4,7,8-HxCDD	ug/Kg	--	0.0062	U	--		0.019	J	0.004	J	0.0038	QJ	--		0.0048	J	0.00016	QJ	0.0063	U
1,2,3,4,7,8-HxCDF	ug/Kg	--	0.0062	U	--		0.094	J	0.15		4.3	Q	--		0.15	Q	0.0022	J	0.00072	QJ
1,2,3,6,7,8-HxCDD	ug/Kg	--	0.0062	U	--		0.032	QJ	0.0066	J	0.017	J	--		0.0058	J	0.00023	J	0.0063	U
1,2,3,6,7,8-HxCDF	ug/Kg	--	0.0062	U	--		0.028	BJ	0.038	QJ	0.84	Q	--		0.022	J	0.00043	QJ	0.00015	QJ
1,2,3,7,8,9-HxCDD	ug/Kg	--	0.0062	U	--		0.034	BJ	0.0085	J	0.0051	J	--		0.0081	QJ	0.00031	QJ	0.0063	U
1,2,3,7,8,9-HxCDF	ug/Kg	--	0.0062	U	--		0.019	QBJ	0.1	U	0.0017	J	--		0.0083	J	0.00035	QJ	0.0063	U
1,2,3,7,8-PCDD	ug/Kg	--	0.0062	U	--		0.018	QJ	0.0025	J	0.0042	QJ	--		0.0054	J	0.00039	QJ	0.0063	U
1,2,3,7,8-PCDF	ug/Kg	--	0.0062	U	--		0.02	QJ	0.0064	QJ	0.05	QJ	--		0.0069	J	0.00015	QJ	0.0063	U
2,3,4,6,7,8-HxCDF	ug/Kg	--	0.0062	U	--		0.023	J	0.016	J	0.17		--		0.0095	J	0.00027	QJ	0.000091	QJ
2,3,4,7,8-PCDF	ug/Kg	--	0.0062	U	--		0.024	J	0.019	J	0.32		--		0.016	J	0.00029	QJ	0.0063	U
2,3,7,8-TCDD	ug/Kg	--	0.0012	U	--		0.073	U	0.0021	U	0.0016	J	--		0.014	U	0.0016	U	0.0013	U
2,3,7,8-TCDF	ug/Kg	--	0.0012	U	--		0.017	QJ	0.0096	QJ	0.0054	QJ	--		0.013	QJ	0.0002	QJ	0.0013	U
OCDD	ug/Kg	--	0.00081	QBJ	--		6.2	B	0.74	B	0.2	B	--		0.076	BJ	0.0036	BJ	0.0014	BJ
OCDF	ug/Kg	--	0.00086	QBJ	--		0.53	BJ	1.2	B	45	B	--		0.67	B	0.013	BJ	0.0055	BJ
Total HpCDD	ug/Kg	--	0.0062	U	--		1.3	B	0.44		0.098	J	--		0.024	J	0.00075	QJ	0.00049	JQ
Total HpCDF	ug/Kg	--	0.00019	QBJ	--		0.73		0.87	B	18	B	--		0.38	B	0.0058	JB	0.0024	QJB
Total HxCDD	ug/Kg	--	0.0062	U	--		0.19	JQB	0.086	JQ	0.084	QJ	--		0.028	QJ	0.0007	QJ	0.00025	J
Total HxCDF	ug/Kg	--	0.0062	U	--		0.48	JQB	0.53	Q	9.7	Q	--		0.28	Q	0.0047	QJ	0.0014	JQ
Total PeCDD	ug/Kg	--	0.0062	U	--		0.027	QJ	0.021	QJ	0.044	QJ	--		0.02	QJ	0.00039	QJ	0.0063	U
Total PeCDF	ug/Kg	--	0.0062	U	--		0.22	QJB	0.25	JQ	3.7	Q	--		0.12	QJ	0.0018	QJ	0.0063	U
Total TCDD	ug/Kg	--	0.0012	U	--		0.015	QJ	0.0093	JQ	0.035	Q	--		0.016	JQ	0.00043	QJ	0.0013	U
Total TCDF	ug/Kg	--	0.0062	U	--		0.063	QJ	150	Q	1.7	Q	--		0.1	Q	0.00057	QJ	0.0013	U
Polychlorinated Dioxins/Furans (2,3,7,8 Equivalents)																				
1,2,3,4,6,7,8-HpCDD	0.01	--	--		--		7.00E-03		1.30E-03		4.80E-04		--		1.50E-04		--		--	
1,2,3,4,6,7,8-HpCDF	0.01	--	--		--		3.70E-03		7.20E-03		1.70E-01		--		3.30E-03		4.90E-05		2.20E-05	
1,2,3,4,7,8,9-HpCDF	0.01	--	--		--		3.60E-04		2.20E-04		4.20E-03		--		1.80E-04		5.50E-06		--	
1,2,3,4,7,8-HxCDD	0.10	--	--		--		1.90E-03		4.00E-04		--		--		4.80E-04		--		--	
1,2,3,4,7,8-HxCDF	0.10	--	--		--		9.40E-03		1.50E-02		--		--		--		2.20E-04		--	
1,2,3,6,7,8-HxCDD	0.10	--	--		--		--		6.60E-04		1.70E-03		--		5.80E-04		2.30E-05		--	

TABLE 4-4

ANALYTICAL RESULTS
BARRIER WALL ALIGNMENT SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	BW-19 07/29/08 Sand Duplicate		BW-19 07/29/08 Clay Primary		BW-20 07/24/08 Fill Primary		BW-20 07/25/08 Mat Primary		BW-20 07/25/08 Sand Primary		BW-20 07/25/08 Clay Primary		BW-21 07/29/08 Fill Primary		BW-21 07/29/08 Mat Primary		BW-21 07/29/08 Sand Primary	
		Sample Depth	**12.0-16.25 ft**		**22.0-24.0 ft**		**0.0-4.0 ft**		**6.0-10.0 ft**		**10.0-15.25 ft**		**24.0-26.0 ft**		**0.0-6.0 ft**		**8.0-10.5 ft**		**10.5-16.0 ft**	
		VOC Sample Depth	**16.0-16.25 ft**		**23.0-24.0 ft**		**2.0-3.0 ft**		**8.0-9.0 ft**		**15.0-15.25 ft**		**25.0-26.0 ft**		**5.0-6.0 ft**		**10.0-10.5 ft**		**15.0-16.0 ft**	
Polychlorinated Dioxins/Furans (2,3,7,8 Equivalents) (Continu																				
1,2,3,6,7,8-HxCDF	0.10	--	--		--		2.80E-03		--		--		--		2.20E-03		--		--	
1,2,3,7,8,9-HxCDD	0.10	--	--		--		3.40E-03		8.50E-04		5.10E-04		--		--		--		--	
1,2,3,7,8,9-HxCDF	0.10	--	--		--		--		--		1.70E-04		--		8.30E-04		--		--	
1,2,3,7,8-PCDD	1.00	--	--		--		--		2.50E-03		--		--		5.40E-03		--		--	
1,2,3,7,8-PCDF	0.05	--	--		--		--		--		--		--		3.45E-04		--		--	
2,3,4,6,7,8-HxCDF	0.10	--	--		--		2.30E-03		1.60E-03		1.70E-02		--		9.50E-04		--		--	
2,3,4,7,8-PCDF	0.50	--	--		--		1.20E-02		9.50E-03		1.60E-01		--		8.00E-03		--		--	
2,3,7,8-TCDD	1.00	--	--		--		--		--		1.60E-03		--		--		--		--	
2,3,7,8-TCDF	0.10	--	--		--		--		--		--		--		--		--		--	
OCDD	0.0001	--	--		--		6.20E-04		7.40E-05		2.00E-05		--		7.60E-06		3.60E-07		1.40E-07	
OCDF	0.0001	--	--		--		5.30E-05		1.20E-04		4.50E-03		--		6.70E-05		1.30E-06		5.50E-07	
Total 2,3,7,8-TCDD Equivalents[2]	ug/Kg	1	--		--		4.35E-02		3.94E-02		3.60E-01		--		2.25E-02		2.99E-04		2.27E-05	
Polychlorinated Biphenyls (Aroclors)																				
Aroclor 1016	mg/Kg	1	0.0031	U	--		0.0036	U	0.01	U	0.003	U	--		0.0034	U	0.004	U	0.0031	U
Aroclor 1221	mg/Kg	1	0.004	U	--		0.0046	U	0.013	U	0.0038	U	--		0.0044	U	0.0052	U	0.004	U
Aroclor 1232	mg/Kg	1	0.0036	U	--		0.0041	U	0.012	U	0.0034	U	--		0.004	U	0.0046	U	0.0036	U
Aroclor 1242	mg/Kg	1	0.0034	U	--		0.0039	U	0.011	U	0.0033	U	--		0.0038	U	0.0044	U	0.0034	U
Aroclor 1248	mg/Kg	1	0.002	U	--		0.0023	U	0.0066	U	0.0019	U	--		0.0022	U	0.0026	U	0.002	U
Aroclor 1254	mg/Kg	1	0.003	U	--		0.0034	U	0.0099	U	0.0028	U	--		0.0033	U	0.0039	U	0.003	U
Aroclor 1260	mg/Kg	1	0.003	U	--		0.0034	U	0.0099	U	0.0028	U	--		0.0033	U	0.0038	U	0.003	U
Aroclor 1262	mg/Kg	1	0.0046	U	--		0.0053	U	0.015	U	0.0044	U	--		0.0051	U	0.0059	U	0.0046	U
Aroclor 1268	mg/Kg	1	0.0027	U	--		0.0031	U	0.0089	U	0.0026	U	--		0.003	U	0.0035	U	0.0027	U
Metals																				
Aluminum	mg/Kg	--	3080	J	11100	J	1740		3710		3140		12600		3080	J	1640	J	4150	J
Antimony	mg/Kg	450	0.11	U	0.19	BJ	0.53	BJ	2.3	B	0.11	U	0.12	U	0.13	U	0.15	U	0.12	U
Arsenic	mg/Kg	19	2.4		5.9		17		**24**		1.4		7.7		5.8		0.37	U	2	
Barium	mg/Kg	59000	17.3	B	74.3		42.9		40.3	B	12.2	B	73.4		39.3		12.6	B	17.4	B
Beryllium	mg/Kg	140	0.29	B	0.87		0.2	B	0.13	U	0.32	B	0.84		0.49	B	0.13	B	0.4	B
Cadmium	mg/Kg	78	0.059	U	0.061	U	1.5		1.3	B	0.12	B	0.51	B	0.065	U	0.076	U	0.059	U
Calcium	mg/Kg	--	513	B	5830		1740		4090		584	B	5220		1690		2150		658	
Chromium[3]	mg/Kg	120000	8.7		19.4		2650		1040		10.4		21.2		1570		33.9		13.3	
Chromium (Hexavalent)[3]	mg/Kg	20	0.4	U	0.4	U	6.4		0.4	U	0.4	U	0.4	U	**99.1**		0.4	U	0.4	U
Cobalt	mg/Kg	590	3.2	B	12		4.9	B	8.6	B	3.3	B	12.4		3.9	B	0.26	B	3.2	B
Copper	mg/Kg	45000	5.7		22.3		93.3		69.1		5.1		25.3		46.2		2.3	B	6.5	
Iron	mg/Kg	--	10700		28000		44200		44100	J	9710	J	30900	J	10700		1570		10700	
Lead	mg/Kg	800	3.7	J	13.3	J	102		209		2.8		12.2		69.1	J	2.6	J	3.2	J
Magnesium	mg/Kg	--	1230		7210		606	B	2480		1180		7610		949		1940		1360	
Manganese	mg/Kg	5900	56.6		599		364		267	J	74.9	J	548	J	119		51.7		56.7	
Mercury	mg/Kg	65	0.0089	U	0.013	B	1.3		15.1		0.0085	U	0.022	B	0.39		0.012	U	0.009	U
Nickel	mg/Kg	23000	6.6	J	24.6	J	24.2		39		7.5		26.8		11.5	J	1.3	BJ	6.9	J
Potassium	mg/Kg	--	315	B	1450		136	B	334	B	315	B	1650		231	B	179	B	394	B
Selenium	mg/Kg	5700	0.36	U	0.37	U	2.7		1.6	B	0.35	U	0.37	U	0.92		0.47	U	0.36	U
Silver	mg/Kg	5700	0.046	U	0.18	B	0.36	B	0.62	B	0.045	U	0.18	B	0.12	B	0.06	U	0.047	U
Sodium	mg/Kg	--	263	B	523	B	2300		2370		505	B	581	B	202	B	2190		583	B
Thallium	mg/Kg	79	0.4	U	0.42	U	2		1.3	U	0.39	U	0.64	B	0.44	U	0.52	U	0.41	U
Vanadium	mg/Kg	1100	12.2		24.4		42		128		12.6		26.5		55.3		3.6	B	15.5	
Zinc	mg/Kg	110000	16.2	J	63.5	J	170		283		20.6		64.6		31.1	J	3.4	J	18.6	J

TABLE 4-4

ANALYTICAL RESULTS
BARRIER WALL ALIGNMENT SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	BW-19 07/29/08 Sand Duplicate		BW-19 07/29/08 Clay Primary		BW-20 07/24/08 Fill Primary		BW-20 07/25/08 Mat Primary		BW-20 07/25/08 Sand Primary		BW-20 07/25/08 Clay Primary		BW-21 07/29/08 Fill Primary		BW-21 07/29/08 Mat Primary		BW-21 07/29/08 Sand Primary	
		Sample Depth	**12.0-16.25 ft**		**22.0-24.0 ft**		**0.0-4.0 ft**		**6.0-10.0 ft**		**10.0-15.25 ft**		**24.0-26.0 ft**		**0.0-6.0 ft**		**8.0-10.5 ft**		**10.5-16.0 ft**	
		VOC Sample Depth	**16.0-16.25 ft**		**23.0-24.0 ft**		**2.0-3.0 ft**		**8.0-9.0 ft**		**15.0-15.25 ft**		**25.0-26.0 ft**		**5.0-6.0 ft**		**10.0-10.5 ft**		**15.0-16.0 ft**	
Toxicity Characteristic Leacing Procedure[4]																				
1,1-Dichloroethene	mg/L	0.7	--		--		0.035	U	0.035	U	0.035	U	--		0.0087	U	0.0087	U	0.0087	U
1,2-Dichloroethane	mg/L	0.5	--		--		0.026	U	0.026	U	0.026	U	--		0.0064	U	0.0064	U	0.0064	U
1,4-Dichlorobenzene	mg/L	7.5	--		--		0.062		0.0046	U	**25**		--		0.0046	U	0.0046	U	0.0046	U
2,4,5-Trichlorophenol	mg/L	400	--		--		0.0041	U	0.0041	U	0.0041	U	--		0.0041	U	0.0041	U	0.0041	U
2,4,6-Trichlorophenol	mg/L	2	--		--		0.0026	U	0.0026	U	0.0026	U	--		0.0026	U	0.0026	U	0.0026	U
2,4-Dinitrotoluene	mg/L	0.13	--		--		0.0028	U	0.0028	U	0.0028	U	--		0.0028	U	0.0028	U	0.0028	U
2-Butanone	mg/L	200	--		--		0.029	U	0.12	J	0.029	U	--		0.0073	U	0.0073	U	0.0073	U
Benzene	mg/L	0.5	--		--		0.36		0.033	U	0.046	J	--		0.0081	U	0.0081	U	0.0081	U
Carbon Tetrachloride	mg/L	0.5	--		--		0.037	U	0.037	U	0.037	U	--		0.0091	U	0.0091	U	0.0091	U
Chlorobenzene	mg/L	100	--		--		0.028	U	0.028	U	0.83		--		0.0071	U	0.0071	U	0.0071	U
Chloroform	mg/L	6	--		--		0.031	U	0.031	U	0.031	U	--		0.0078	U	0.0078	U	0.0078	U
Cresols	mg/L	200	--		--		1.8		0.0089	U	0.45		--		0.0089	U	0.0089	U	0.0089	U
Hexachlorobenzene	mg/L	0.13	--		--		0.0049	U	0.0049	U	0.0049	U	--		0.0049	U	0.0049	U	0.0049	U
Hexachlorobutadiene	mg/L	0.5	--		--		0.0033	U	0.0033	U	0.0033	U	--		0.0033	U	0.0033	U	0.0033	U
Hexachloroethane	mg/L	3	--		--		0.0036	U	0.0036	U	0.0036	U	--		0.0036	U	0.0036	U	0.0036	U
Nitrobenzene	mg/L	2	--		--		0.0056	U	0.0056	U	0.0056	U	--		0.0056	U	0.0056	U	0.0056	U
Pentachlorophenol	mg/L	100	--		--		0.005	U	0.005	U	0.005	U	--		0.005	U	0.005	U	0.005	U
Pyridine	mg/L	5	--		--		0.011	U	0.011	U	0.011	U	--		0.011	U	0.011	U	0.011	U
Tetrachloroethene	mg/L	0.7	--		--		0.023	U	0.023	U	0.023	U	--		0.0057	U	0.0057	U	0.0057	U
Trichloroethene	mg/L	0.5	--		--		0.035	U	0.035	U	0.035	U	--		0.0088	U	0.0088	U	0.0088	U
Vinyl chloride	mg/L	0.2	--		--		0.038	U	0.038	U	0.038	U	--		0.0094	U	0.0094	U	0.0094	U
Arsenic	mg/L	5	--		--		0.16	B	0.17	B	0.13	B	--		0.18	B	0.16	B	0.2	B
Barium	mg/L	100	--		--		0.16	BJ	0.038	BJ	0.14	BJ	--		0.21	BJ	0.055	BJ	0.2	BJ
Cadmium	mg/L	1	--		--		0.0012	U	0.0012	U	0.0012	U	--		0.0012	U	0.0012	U	0.0012	U
Chromium	mg/L	5	--		--		0.58		0.0062	B	0.017	B	--		0.52		0.0052	B	0.0055	B
Lead	mg/L	5	--		--		0.013	U	0.013	U	0.013	U	--		0.032	B	0.013	U	0.013	U
Mercury	mg/L	0.2	--		--		0.000055	U	0.000055	U	0.000055	U	--		0.000055	U	0.000055	U	0.000055	U
Selenium	mg/L	1	--		--		0.015	U	0.015	U	0.015	U	--		0.015	U	0.015	U	0.015	U
Silver	mg/L	5	--		--		0.0025	U	0.0025	U	0.0025	U	--		0.0025	U	0.0025	U	0.0025	U
RCRA Characteristics and Indicators																				
Corrosivity (pH)	SU	2<pH<12.5	--		--		8.39		5.49		8.16		--		7.77		7.42		8.2	
Cyanide	mg/Kg	23000	0.21	BJ	--		13.4		10.6		0.13	B	--		0.95	J	0.27	BJ	0.23	BJ
Total Sulfide (Reactivity)	mg/Kg	--	--		--		210		51.1	U	14.7	U	--		77.6		19.9	U	15.5	U
Ignitability	None	--	--		--		No		No		No		--		No		No		No	
Oxidation Reduction Potential	mV	--	464		485		592		455		442		444		456		470		469	
Percent Solids	%	--	80.1		76.9		68.4		24		83.2		77.3		72.2		61.6		79.1	

TABLE 4-4

ANALYTICAL RESULTS
BARRIER WALL ALIGNMENT SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Notes:

1. Criteria are the NJDEP Non-Residential Direct Contact Soil Remediation Standards (online at www.nj.gov/dep/srp/regs/rs/rs appendix1.pdf) unless noted otherwise.
2. The 1 ug/kg benchmark for 2,3,7,8-TCDD equivalents is the United States Environmental Protection Agency residential guideline per OSWER Directive 9200.4-26.
3. Nonpromulgated criteria for total (trivalent) and hexavalent chromium determined by chromium workgroup (www.state.nj.us/dep/srp/guidance/rs/chrome criteria.pdf). Criterion for residential exposure to trivalent chromium was used for total chromium.
4. Toxicity Characteristic Leaching Procedure limits as specified in 40 Code of Federal Regulations 261.24 - available at electronic CFR website (ecfr.gpoaccess.gov).

Exceedances are shown in bold, shaded typeface. Data qualifiers are as follows:

B - Organic results. Analyte detected in associated method blank
B - Inorganic results. Result is an estimate. Quantitation between the detection limit and the reporting limit.
E - Inorganic results. Serial dilution was outside quality control limits for this analyte.
J - Organic results. Result is an estimate. Quantitated between the detection limit and the reporting limit.
J - Inorganic results. Result is an estimated concentration. Quantitated below the reporting limit.
P - Organic results. Percent difference between initial and confirmation column results is greater than 40%.
Q - One or more quality control criteria for identification not attained. Value is an Estimated Maximum Possible Concentration. Analyte may be present below the quantitation limit indicated.
S - Organic results. Ion suppression.
U - Not detected at the detection limit indicated.
-- - Not analyzed or criteria unavailable.

TABLE 4-5

ANALYTICAL RESULTS
GEOTECHNICAL BORINGS
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	GT-1 05/14/08 25-26 ft Primary		GT-2 05/12/08 19-20 ft Primary		GT-3 05/08/08 22-24 ft Primary		GT-4 05/13/08 29-30 ft Primary		GT-5 05/13/08 26-27 ft Primary	
Volatile Organics												
1,1,1-Trichloroethane	mg/Kg	4200	0.007	U	0.014	U	0.014	U	0.013	U	0.013	U
1,1,2,2-Tetrachloroethane	mg/Kg	3	0.01	U	0.015	U	0.015	U	0.015	U	0.015	U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg	--	0.015	U	0.017	U	0.016	U	0.016	U	0.016	U
1,1,2-Trichloroethane	mg/Kg	6	0.012	U	0.015	U	0.014	U	0.014	U	0.014	U
1,1-Dichloroethane	mg/Kg	24	0.0083	U	0.013	U	0.013	U	0.013	U	0.013	U
1,1-Dichloroethene	mg/Kg	150	0.012	U	0.016	U	0.016	U	0.015	U	0.015	U
1,2,4-Trichlorobenzene	mg/Kg	820	0.013	U	0.014	U	0.03	J	0.013	U	0.013	U
1,2-Dibromoethane	mg/Kg	0.04	0.012	U	0.014	U	0.014	U	0.014	U	0.014	U
1,2-Dichlorobenzene	mg/Kg	59000	0.012	U	0.015	U	0.015	U	0.014	U	0.014	U
1,2-Dichloroethane	mg/Kg	3	0.0089	U	0.015	U	0.015	U	0.014	U	0.014	U
1,2-Dichloropropane	mg/Kg	5	0.0078	U	0.015	U	0.015	U	0.014	U	0.014	U
1,3-Dichlorobenzene	mg/Kg	59000	0.0095	U	0.014	U	0.014	U	0.014	U	0.014	U
1,4-Dichlorobenzene	mg/Kg	13	0.0092	U	0.015	U	0.015	U	0.014	U	0.014	U
2-Butanone	mg/Kg	44000	0.013	U	0.037	J	0.19		0.013	U	0.013	U
2-Hexanone	mg/Kg	--	0.01	U	0.011	U	0.011	U	0.01	U	0.01	U
4-Methyl-2-pentanone	mg/Kg	--	0.0094	U	0.012	U	0.012	U	0.011	U	0.011	U
Acetone	mg/Kg	--	0.072	U	0.45		1.8		0.08	J	0.075	J
Benzene	mg/Kg	5	0.0097	U	0.014	U	0.014	U	0.014	U	0.014	U
Bromodichloromethane	mg/Kg	3	0.0081	U	0.013	U	0.013	U	0.013	U	0.013	U
Bromoform	mg/Kg	280	0.0064	U	0.014	U	0.014	U	0.013	U	0.013	U
Bromomethane	mg/Kg	59	0.011	U	0.017	U	0.017	U	0.017	U	0.016	U
Carbon disulfide	mg/Kg	110000	0.0074	U	0.017	U	0.016	U	0.016	U	0.016	U
Carbon tetrachloride	mg/Kg	2	0.0064	U	0.012	U	0.012	U	0.012	U	0.012	U
Chlorobenzene	mg/Kg	7400	0.011	U	0.015	U	0.015	U	0.014	U	0.014	U
Chloroethane	mg/Kg	1100	0.022	U	0.02	U	0.019	U	0.019	U	0.019	U
Chloroform	mg/Kg	2	0.0084	U	0.014	U	0.014	U	0.014	U	0.014	U
Chloromethane	mg/Kg	12	0.012	U	0.015	U	0.015	U	0.014	U	0.014	U
cis-1,2-Dichloroethene	mg/Kg	560	0.01	U	0.015	U	0.014	U	0.014	U	0.014	U
cis-1,3-Dichloropropene	mg/Kg	7	0.0098	U	0.012	U	0.012	U	0.012	U	0.012	U
Cyclohexane	mg/Kg	--	0.0054	U	0.014	U	0.013	U	0.013	U	0.013	U
Dibromochloromethane	mg/Kg	8	0.01	U	0.013	U	0.012	U	0.012	U	0.012	U
Dibromochloropropane	mg/Kg	--	0.011	U	0.011	U	0.011	U	0.011	U	0.011	U
Dichlorodifluoromethane	mg/Kg	230000	0.0096	U	0.017	U	0.017	U	0.017	U	0.017	U
Ethylbenzene	mg/Kg	110000	0.0093	U	0.016	U	0.016	U	0.015	U	0.015	U
Isopropylbenzene	mg/Kg	--	0.0098	U	0.015	U	0.014	U	0.014	U	0.014	U
Methyl Acetate	mg/Kg	--	0.013	U	0.014	U	0.014	U	0.014	U	0.014	U
Methylcyclohexane	mg/Kg	--	0.01	U	0.015	U	0.015	U	0.015	U	0.015	U
Methylene chloride	mg/Kg	97	0.0097	U	0.026	J	0.01	U	0.014	JB	0.01	JB
Methyltert-butylether	mg/Kg	320	0.011	U	0.013	U	0.012	U	0.012	U	0.012	U
Styrene	mg/Kg	260	0.0077	U	0.015	U	0.015	U	0.015	U	0.015	U
Tetrachloroethene	mg/Kg	5	0.0098	U	0.018	U	0.017	U	0.017	U	0.017	U
Toluene	mg/Kg	91000	0.011	U	0.011	U	0.011	U	0.01	U	0.01	U
trans-1,2-Dichloroethene	mg/Kg	720	0.0086	U	0.016	U	0.016	U	0.015	U	0.015	U
Trans-1,3-Dichloropropene	mg/Kg	7	0.0086	U	0.012	U	0.012	U	0.011	U	0.011	U
Trichloroethene	mg/Kg	20	0.0095	U	0.015	U	0.015	U	0.015	U	0.015	U
Trichlorofluoromethane	mg/Kg	340000	0.013	U	0.022	U	0.022	U	0.021	U	0.021	U
Vinyl chloride	mg/Kg	2	0.0068	U	0.015	U	0.015	U	0.015	U	0.015	U
Xylene (total)	mg/Kg	170000	0.032	U	0.048	U	0.047	U	0.046	U	0.046	U

TABLE 4-5

ANALYTICAL RESULTS
GEOTECHNICAL BORINGS
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	GT-1 05/14/08 25-26 ft Primary		GT-2 05/12/08 19-20 ft Primary		GT-3 05/08/08 22-24 ft Primary		GT-4 05/13/08 29-30 ft Primary		GT-5 05/13/08 26-27 ft Primary	
Semivolatile Organics												
1,1'-Biphenyl	mg/Kg	34000	0.032	U	0.032	U	0.032	U	0.032	J	0.032	U
2,2'-oxybis(1-chloropropane)	mg/Kg	--	0.032	U	0.24	U	0.25	U	0.27	U	0.27	U
2,4,5-Trichlorophenol	mg/Kg	68000	0.032	U	0.33	U	0.35	U	0.38	U	0.37	U
2,4,6-Trichlorophenol	mg/Kg	74	0.032	U	0.32	U	0.34	U	0.37	U	0.36	U
2,4-Dichlorophenol	mg/Kg	2100	0.032	U	0.12	U	0.13	U	0.14	U	0.13	U
2,4-Dimethylphenol	mg/Kg	14000	0.032	U	0.17	U	3	J	1.3	J	0.19	U
2,4-Dinitrophenol	mg/Kg	1400	0.032	U	4.7	U	5	U	5.4	U	5.3	U
2,4-Dinitrotoluene	mg/Kg	3	0.032	U	0.21	U	0.22	U	0.23	U	0.23	U
2,6-Dinitrotoluene	mg/Kg	3	0.032	U	0.26	U	0.27	U	0.29	U	0.29	U
2-Chloronaphthalene	mg/Kg	--	0.032	U	0.23	U	0.24	U	0.26	U	0.26	U
2-Chlorophenol	mg/Kg	2200	0.032	U	0.2	U	0.21	U	0.23	U	0.22	U
2-Methylnaphthalene	mg/Kg	2400	0.032	U	0.22	U	1.1	J	17		0.25	U
2-Methylphenol	mg/Kg	3400	0.032	U	0.52	J	3	J	0.84	J	0.28	U
2-Nitroaniline	mg/Kg	23000	0.032	U	0.24	U	0.25	U	0.27	U	0.27	U
2-Nitrophenol	mg/Kg	--	0.032	U	0.32	U	0.33	U	0.36	U	0.35	U
3,3-Dichlorobenzidine	mg/Kg	4	0.032	U	0.9	U	0.95	U	1	U	1	U
3-Nitroaniline	mg/Kg	--	0.032	U	0.34	U	0.36	U	0.39	U	0.38	U
4,6-Dinitro-o-cresol	mg/Kg	68	0.032	U	2.8	U	3	U	3.2	U	3.1	U
4-Bromophenylphenyl ether	mg/Kg	--	0.032	U	0.18	U	0.19	U	0.2	U	0.2	U
4-Chloro-3-methylphenol	mg/Kg	--	0.032	U	0.24	U	0.26	U	0.28	U	0.27	U
4-Chloroaniline	mg/Kg	--	0.032	U	0.2	U	0.21	U	0.22	U	0.22	U
4-Chlorophenyl phenyl ether	mg/Kg	--	0.032	U	0.35	U	0.36	U	0.39	U	0.38	U
4-Methylphenol	mg/Kg	340	0.032	U	3.8	J	14		3.4	J	0.28	U
4-Nitroaniline	mg/Kg	--	0.032	U	0.17	U	0.18	U	0.19	U	0.19	U
4-Nitrophenol	mg/Kg	--	0.032	U	0.31	U	0.33	U	0.35	U	0.35	U
Acenaphthene	mg/Kg	37000	0.032	U	0.21	U	0.22	U	2.2	J	0.23	U
Acenaphthylene	mg/Kg	300000	0.032	U	0.23	U	0.24	U	0.39	J	0.26	U
Acetophenone	mg/Kg	5	0.032	U	0.24	U	0.26	U	0.28	U	0.27	U
Anthracene	mg/Kg	30000	0.032	U	0.23	U	0.24	U	1.6	J	0.25	U
Atrazine	mg/Kg	2400	0.032	U	0.28	U	0.29	U	0.31	U	0.31	U
Benzaldehyde	mg/Kg	68000	0.032	U	0.43	U	0.45	U	0.48	U	0.47	U
Benzo(a)anthracene	mg/Kg	2	0.032	U	0.16	U	0.17	U	0.6	J	0.48	J
Benzo(a)pyrene	mg/Kg	0.2	0.032	U	0.12	U	0.13	U	0.5	J	0.41	J
Benzo(b)fluoranthene	mg/Kg	2	0.032	U	0.15	U	0.16	U	0.72	J	0.58	J
Benzo(ghi)perylene	mg/Kg	30000	0.032	U	0.14	U	0.14	U	0.44	J	0.31	J
Benzo(k)fluoranthene	mg/Kg	23	0.032	U	0.13	U	0.13	U	0.15	U	0.14	U
Bis(2-chloroethoxy)methane	mg/Kg	--	0.032	U	0.19	U	0.2	U	0.21	U	0.21	U
Bis(2-chloroethyl)ether	mg/Kg	2	0.032	U	0.09	U	0.095	U	0.1	U	0.1	U
Bis(2-ethylhexyl)phthalate	mg/Kg	140	0.032	U	0.31	U	0.32	U	0.6	J	0.57	J
Butyl benzyl phthalate	mg/Kg	14000	0.032	U	0.32	U	0.34	U	0.36	U	0.36	U
Caprolactam	mg/Kg	340000	0.032	U	0.76	U	0.8	U	0.86	U	0.84	U
Carbazole	mg/Kg	96	0.032	U	0.16	U	0.17	U	0.37	J	0.18	U
Chrysene	mg/Kg	230	0.032	U	0.16	U	0.17	U	0.69	J	0.41	J
Dibenzo(a,h)anthracene	mg/Kg	0.2	0.032	U	0.26	U	0.27	U	0.29	U	0.28	U
Dibenzofuran	mg/Kg	--	0.032	U	0.22	U	0.27	J	3.6	J	0.25	U
Diethyl phthalate	mg/Kg	550000	0.032	U	0.36	U	0.38	U	0.41	U	0.4	U
Dimethyl phthalate	mg/Kg	--	0.032	U	0.23	U	0.24	U	0.26	U	0.25	U
Di-n-butyl phthalate	mg/Kg	68000	0.032	U	0.67	U	0.7	U	0.75	U	0.74	U
Di-n-octyl phthalate	mg/Kg	27000	0.032	U	0.28	U	0.29	U	0.32	U	0.31	U
Fluoranthene	mg/Kg	24000	0.032	U	0.26	U	0.27	U	1.3	J	0.54	J

TABLE 4-5

ANALYTICAL RESULTS
GEOTECHNICAL BORINGS
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	GT-1 05/14/08 25-26 ft Primary		GT-2 05/12/08 19-20 ft Primary		GT-3 05/08/08 22-24 ft Primary		GT-4 05/13/08 29-30 ft Primary		GT-5 05/13/08 26-27 ft Primary	
Semivolatile Organics (Continued)												
Fluorene	mg/Kg	24000	0.21	U	0.19	U	0.2	U	2.5	J	0.22	U
Hexachlorobenzene	mg/Kg	1	0.26	U	0.24	U	0.25	U	**3.6**	J	0.27	U
Hexachlorobutadiene	mg/Kg	25	0.26	U	0.25	U	0.26	U	0.28	U	0.27	U
Hexachlorocyclopentadiene	mg/Kg	110	0.2	U	0.18	U	0.19	U	0.21	U	0.2	U
Hexachloroethane	mg/Kg	140	0.19	U	0.18	U	0.19	U	0.2	U	0.2	U
Indeno(1,2,3-cd)pyrene	mg/Kg	2	0.15	U	0.14	U	0.15	U	0.39	J	0.34	J
Isophorone	mg/Kg	2000	0.24	U	0.22	U	0.23	U	0.25	U	0.25	U
Naphthalene	mg/Kg	17	**39**		0.19	U	3.8	J	**47**		0.22	U
Nitrobenzene	mg/Kg	340	0.11	U	0.1	U	0.1	U	0.11	U	0.11	U
N-Nitrosodiphenylamine	mg/Kg	390	0.23	U	0.22	U	0.23	U	0.25	U	0.24	U
N-Nitrosodipropylamine	mg/Kg	0.3	0.1	U	0.098	U	0.1	U	0.11	U	0.11	U
Pentachlorophenol	mg/Kg	10	0.32	U	0.3	U	0.31	U	0.34	U	0.33	U
Phenanthrene	mg/Kg	300000	0.2	U	0.19	U	0.2	U	3.7	J	0.25	J
Phenol	mg/Kg	210000	0.26	U	16		10		2.3	J	0.27	U
Pyrene	mg/Kg	18000	0.26	U	0.25	U	0.26	U	0.75	J	0.37	J
Metals												
Aluminum	mg/Kg	--	11100	J	9770		11000		13000		12600	
Antimony	mg/Kg	450	0.12	U	0.11	U	0.12	U	0.13	U	0.12	U
Arsenic	mg/Kg	19	5.7		2.3		3.3		8.1		8.1	
Barium	mg/Kg	59000	44.3		32.9		30.1		92.3		75.4	
Beryllium	mg/Kg	140	0.77		0.68		0.95		0.87		0.89	
Cadmium	mg/Kg	78	0.66		0.41	B	0.81		0.7		0.73	
Calcium	mg/Kg	--	6700		1930		2500		5050		5630	
Chromium[2]	mg/Kg	120000	18.5	J	21.7	J	19.7	J	22.3	J	21.1	J
Chromium (Hexavalent)[2]	mg/Kg	20	NA		0.4	U	0.4	U	0.4	U	0.4	U
Cobalt	mg/Kg	590	11.8		7.3		12.9		12.5		12.7	
Copper	mg/Kg	45000	23.5		10.1		16.2		28.1		25.4	
Iron	mg/Kg	--	24500		16200		35700		30100		31400	
Lead	mg/Kg	800	12.8		8.2		11		12.8		14	
Magnesium	mg/Kg	--	7740		3700		6150		8220		7670	
Manganese	mg/Kg	5900	635	J	293		948		565		609	
Mercury	mg/Kg	65	0.021	B	0.0089	B	0.016	B	0.031	B	0.024	B
Nickel	mg/Kg	23000	25	J	17.9	J	30.2	J	27.2	J	27.3	J
Potassium	mg/Kg	--	1450		982		1170		1890		1830	
Selenium	mg/Kg	5700	0.38	B	0.39	B	0.55	B	0.55	B	0.55	B
Silver	mg/Kg	5700	0.2	BJ	0.1	B	0.23	B	0.12	B	0.16	B
Sodium	mg/Kg	--	796		796		2170		558	B	692	
Thallium	mg/Kg	79	0.43	B	0.78	B	0.59	B	0.44	U	0.65	B
Vanadium	mg/Kg	1100	21.9		19		20.1		27.8		25.7	
Zinc	mg/Kg	110000	62.7	J	53		77.9		65.7		67.5	
Indicator Parameters												
Percent Solids	%	--	76.8		82.5		78.9		73		74.5	

1. Criteria are the NJDEP Non-Residential Direct Contact Soil Remediation Standards (online at www.nj.gov/dep/srp/regs/rs/rs_appendix1.pdf)
2. Nonpromulgated criteria for total (trivalent) and hexavalent chromium determined by chromium workgroup (www.state.nj.us/dep/srp/guidance).
   Criterion for residential exposure to trivalent chromium was used for total chromium.
3. Exceedances are shown in bold, shaded typeface. Data qualifiers are as follows:
   B - Organic results. Analyte detected in associated method blank
   B - Inorganic results. Result is an estimate. Quantitation between the detection limit and the reporting limit.
   J - Organic results. Result is an estimate. Quantitated between the detection limit and the reporting limit.
   J - Inorganic results. Result is an estimated concentration. Quantitated below the reporting limit.
   U - Not detected at the detection limit indicated.
   -- - Not analyzed or criteria unavailable.

TABLE 4-6

ANALYTICAL RESULTS
PIPE RUN TRENCH SPOIL
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	TSWC-03 05/07/08 Primary		TSWC-03-2 10/21/08 Resample		TSWC-04 05/07/08 Primary		TSWC-05 05/07/08 Primary	
		Sample Depth	**1.0-3.0 ft**		**0.0-3.0 ft**		**1.0-3.0 ft**		**1.0-3.0 ft**	
		VOC Sample Depth	**2.0-3.0 ft**		**--**		**2.0-3.0 ft**		**2.0-3.0 ft**	
Volatile Organics										
1,1,1-Trichloroethane	mg/Kg	4200	0.066	U	--		0.0012	U	0.0012	U
1,1,2,2-Tetrachloroethane	mg/Kg	3	0.073	U	--		0.0014	U	0.0014	U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg	--	0.079	U	--		0.0015	U	0.0015	U
1,1,2-Trichloroethane	mg/Kg	6	0.069	U	--		0.0013	U	0.0013	U
1,1-Dichloroethane	mg/Kg	24	0.063	U	--		0.0012	U	0.0012	U
1,1-Dichloroethene	mg/Kg	150	0.076	U	--		0.0014	U	0.0014	U
1,2,4-Trichlorobenzene	mg/Kg	820	0.067	U	--		0.0012	U	0.0012	U
1,2-Dibromoethane	mg/Kg	0.04	0.067	U	--		0.0012	U	0.0012	U
1,2-Dichlorobenzene	mg/Kg	59000	4.2		--		0.0013	U	0.0013	U
1,2-Dichloroethane	mg/Kg	3	0.07	U	--		0.0013	U	0.0013	U
1,2-Dichloropropane	mg/Kg	5	0.072	U	--		0.0013	U	0.0013	U
1,3-Dichlorobenzene	mg/Kg	59000	1.1		--		0.0013	U	0.0013	U
1,4-Dichlorobenzene	mg/Kg	13	2.5		--		0.0013	U	0.0013	U
2-Butanone	mg/Kg	44000	0.063	U	--		0.0012	U	0.0012	U
2-Hexanone	mg/Kg	--	0.051	U	--		0.00094	U	0.00094	U
4-Methyl-2-pentanone	mg/Kg	--	0.056	U	--		0.001	U	0.001	U
Acetone	mg/Kg	--	0.077	U	--		0.006	U	0.006	U
Benzene	mg/Kg	5	0.067	U	--		0.0012	U	0.0012	U
Bromodichloromethane	mg/Kg	3	0.063	U	--		0.0012	U	0.0012	U
Bromoform	mg/Kg	280	0.066	U	--		0.0012	U	0.0012	U
Bromomethane	mg/Kg	59	0.082	U	--		0.0015	U	0.0015	U
Carbon disulfide	mg/Kg	110000	0.079	U	--		0.0015	U	0.0015	U
Carbon tetrachloride	mg/Kg	2	0.058	U	--		0.0011	U	0.0011	U
Chlorobenzene	mg/Kg	7400	0.43		--		0.0013	U	0.0013	U
Chloroethane	mg/Kg	1100	0.093	U	--		0.0017	U	0.0017	U
Chloroform	mg/Kg	2	0.068	U	--		0.0013	U	0.0013	U
Chloromethane	mg/Kg	12	0.072	U	--		0.0013	U	0.0013	U
cis-1,2-Dichloroethene	mg/Kg	560	0.07	U	--		0.0013	U	0.0013	U
cis-1,3-Dichloropropene	mg/Kg	7	0.058	U	--		0.0011	U	0.0011	U
Cyclohexane	mg/Kg	--	0.064	U	--		0.0012	U	0.0012	U
Dibromochloromethane	mg/Kg	8	0.06	U	--		0.0011	U	0.0011	U
Dibromochloropropane	mg/Kg	--	0.054	U	--		0.001	U	0.001	U
Dichlorodifluoromethane	mg/Kg	230000	0.082	U	--		0.0015	U	0.0015	U
Ethylbenzene	mg/Kg	110000	0.076	U	--		0.0014	U	0.0014	U
Isopropylbenzene	mg/Kg	--	0.069	U	--		0.0013	U	0.0013	U
Methyl acetate	mg/Kg	--	0.068	U	--		0.0013	U	0.0013	U
Methylcyclohexane	mg/Kg	--	0.072	U	--		0.0013	U	0.0013	U
Methylene chloride	mg/Kg	97	0.049	U	--		0.00091	U	0.0013	J
Methyltert-butylether	mg/Kg	320	0.06	U	--		0.0011	U	0.0011	U
Styrene	mg/Kg	260	0.072	U	--		0.0013	U	0.0013	U
Tetrachloroethene	mg/Kg	5	0.084	U	--		0.0015	U	0.0016	U
Toluene	mg/Kg	91000	0.051	U	--		0.00094	U	0.00095	U
trans-1,2-Dichloroethene	mg/Kg	720	0.075	U	--		0.0014	U	0.0014	U
trans-1,3-Dichloropropene	mg/Kg	7	0.056	U	--		0.001	U	0.001	U
Trichloroethene	mg/Kg	20	0.072	U	--		0.0013	U	0.0013	U
Trichlorofluoromethane	mg/Kg	340000	0.1	U	--		0.0019	U	0.0019	U
Vinyl chloride	mg/Kg	2	0.072	U	--		0.0013	U	0.0013	U
Xylene (total)	mg/Kg	170000	0.3	J	--		0.0042	U	0.0042	U

TABLE 4-6

ANALYTICAL RESULTS
PIPE RUN TRENCH SPOIL
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	TSWC-03 05/07/08 Primary		TSWC-03-2 10/21/08 Resample		TSWC-04 05/07/08 Primary		TSWC-05 05/07/08 Primary	
		Sample Depth	**1.0-3.0 ft**		**0.0-3.0 ft**		**1.0-3.0 ft**		**1.0-3.0 ft**	
		VOC Sample Depth	**2.0-3.0 ft**		**--**		**2.0-3.0 ft**		**2.0-3.0 ft**	
Semivolatile Organics										
1,1'-Biphenyl	mg/Kg	34000	1		--		0.067	J	0.067	J
2,2'-oxybis(1-chloropropane)	mg/Kg	--	0.029	U	--		0.023	U	0.024	U
2,4,5-Trichlorophenol	mg/Kg	68000	0.039	U	--		0.032	U	0.033	U
2,4,6-Trichlorophenol	mg/Kg	74	0.039	U	--		0.031	U	0.033	U
2,4-Dichlorophenol	mg/Kg	2100	0.014	U	--		0.012	U	0.012	U
2,4-Dimethylphenol	mg/Kg	14000	0.021	U	--		0.017	U	0.091	J
2,4-Dinitrophenol	mg/Kg	1400	0.56	U	--		0.46	U	0.48	U
2,4-Dinitrotoluene	mg/Kg	3	0.025	U	--		0.02	U	0.021	U
2,6-Dinitrotoluene	mg/Kg	3	0.031	U	--		0.025	U	0.026	U
2-Chloronaphthalene	mg/Kg	--	0.028	U	--		0.023	U	0.023	U
2-Chlorophenol	mg/Kg	2200	0.024	U	--		0.02	U	0.02	U
2-Methylnaphthalene	mg/Kg	2400	9.2		--		0.21	J	0.2	J
2-Methylphenol	mg/Kg	3400	0.04	J	--		0.024	U	0.025	U
2-Nitroaniline	mg/Kg	23000	0.029	U	--		0.023	U	0.024	U
2-Nitrophenol	mg/Kg	--	0.038	U	--		0.031	U	0.032	U
3,3'-Dichlorobenzidine	mg/Kg	4	0.11	U	--		0.088	U	0.091	U
3-Nitroaniline	mg/Kg	--	0.041	U	--		0.033	U	0.035	U
4,6-Dinitro-o-cresol	mg/Kg	68	0.34	U	--		0.28	U	0.28	U
4-Bromophenylphenyl ether	mg/Kg	--	0.021	U	--		0.017	U	0.018	U
4-Chloroaniline	mg/Kg	--	0.041	U	--		0.034	U	0.035	U
4-Chlorophenyl phenyl ether	mg/Kg	--	0.024	U	--		0.019	U	0.02	U
4-Chloro-3-methylphenol	mg/Kg	--	0.029	U	--		0.024	U	0.025	U
4-Methylphenol	mg/Kg	340	0.07	J	--		0.024	U	0.16	J
4-Nitroaniline	mg/Kg	--	0.02	U	--		0.016	U	0.017	U
4-Nitrophenol	mg/Kg	--	0.037	U	--		0.03	U	0.031	U
Acenaphthene	mg/Kg	37000	1.8		--		0.28	J	0.45	
Acenaphthylene	mg/Kg	300000	0.11	J	--		0.032	J	0.1	J
Acetophenone	mg/Kg	5	0.029	U	--		0.024	U	0.025	U
Anthracene	mg/Kg	30000	0.25	J	--		0.56		0.42	
Atrazine	mg/Kg	2400	0.033	U	--		0.027	U	0.028	U
Benzaldehyde	mg/Kg	68000	0.051	U	--		0.041	U	0.043	U
Benzo(a)anthracene	mg/Kg	2	0.72		--		1.6		0.43	
Benzo(a)pyrene	mg/Kg	0.2	**0.6**		--		**1.6**		0.2	J
Benzo(b)fluoranthene	mg/Kg	2	1		--		**2.9**		0.45	
Benzo(ghi)perylene	mg/Kg	30000	0.52		--		1.3		0.17	J
Benzo(k)fluoranthene	mg/Kg	23	0.015	U	--		0.012	U	0.013	U
Bis(2-chloroethoxy)methane	mg/Kg	--	0.022	U	--		0.018	U	0.019	U
Bis(2-chloroethyl)ether	mg/Kg	2	0.011	U	--		0.0088	U	0.0091	U
Bis(2-ethylhexyl)phthalate	mg/Kg	140	0.037	U	--		0.03	U	0.031	U
Butyl benzyl phthalate	mg/Kg	14000	0.038	U	--		0.031	U	0.032	U
Caprolactam	mg/Kg	340000	0.09	U	--		0.074	U	0.076	U
Carbazole	mg/Kg	96	0.15	J	--		0.18	J	0.033	J
Chrysene	mg/Kg	230	0.93		--		1.8		0.31	J
Dibenzo(a,h)anthracene	mg/Kg	0.2	0.11	J	--		**0.42**		0.041	J
Dibenzofuran	mg/Kg	--	1.6		--		0.18	J	0.15	J
Diethyl phthalate	mg/Kg	550000	0.043	U	--		0.035	U	0.036	U
Dimethyl phthalate	mg/Kg	--	0.027	U	--		0.022	U	0.023	U
Di-n-butyl phthalate	mg/Kg	68000	0.079	U	--		0.065	U	0.067	U
Di-n-octyl phthalate	mg/Kg	27000	0.033	U	--		0.027	U	0.028	U
Fluoranthene	mg/Kg	24000	0.68		--		2.8		1.3	

TABLE 4-6

ANALYTICAL RESULTS
PIPE RUN TRENCH SPOIL
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	TSWC-03 05/07/08 Primary		TSWC-03-2 10/21/08 Resample		TSWC-04 05/07/08 Primary		TSWC-05 05/07/08 Primary	
		Sample Depth	**1.0-3.0 ft**		**0.0-3.0 ft**		**1.0-3.0 ft**		**1.0-3.0 ft**	
		VOC Sample Depth	**2.0-3.0 ft**		**--**		**2.0-3.0 ft**		**2.0-3.0 ft**	
Semivolatile Organics (Continued)										
Fluorene	mg/Kg	24000	0.92		--		0.24	J	0.093	J
Hexachlorobenzene	mg/Kg	1	0.029	U	--		0.023	U	0.024	U
Hexachlorobutadiene	mg/Kg	25	0.029	U	--		0.024	U	0.025	U
Hexachlorocyclopentadiene	mg/Kg	110	0.022	U	--		0.018	U	0.019	U
Hexachloroethane	mg/Kg	140	0.021	U	--		0.017	U	0.018	U
Indeno(1,2,3-cd)pyrene	mg/Kg	2	0.4	J	--		1.1		0.14	J
Isophorone	mg/Kg	2000	0.027	U	--		0.022	U	0.022	U
Naphthalene	mg/Kg	17	14		--		0.34	J	0.57	
Nitrobenzene	mg/Kg	340	0.012	U	--		0.0097	U	0.01	U
N-Nitrosodiphenylamine	mg/Kg	390	0.026	U	--		0.021	U	0.022	U
N-Nitrosodipropylamine	mg/Kg	0.3	0.012	U	--		0.0095	U	0.0099	U
Pentachlorophenol	mg/Kg	10	0.036	U	--		0.029	U	0.03	U
Phenanthrene	mg/Kg	300000	0.92		--		2		0.85	
Phenol	mg/Kg	210000	0.029	U	--		0.024	U	0.024	U
Pyrene	mg/Kg	18000	1.1		--		2.6		0.99	
Polychlorinated Dioxins/Furans										
1,2,3,4,6,7,8-HpCDD	ug/Kg	--	0.0048	J	0.22		0.0026	QJ	0.29	
1,2,3,4,6,7,8-HpCDF	ug/Kg	--	0.052		4.7	E	0.013		110	
1,2,3,4,7,8,9-HpCDF	ug/Kg	--	0.0017	QJ	0.14		0.00054	QJ	3.2	
1,2,3,4,7,8-HxCDD	ug/Kg	--	0.0072	U	0.011		0.0059	U	0.022	J
1,2,3,4,7,8-HxCDF	ug/Kg	--	0.017	Q	1.4	J	0.0055	J	27	Q
1,2,3,6,7,8-HxCDD	ug/Kg	--	0.0072	U	0.035		0.00041	J	0.11	
1,2,3,6,7,8-HxCDF	ug/Kg	--	0.0023	J	0.22		0.0011	J	4.8	Q
1,2,3,7,8,9-HxCDD	ug/Kg	--	0.0072	U	0.0082		0.0059	U	0.029	J
1,2,3,7,8,9-HxCDF	ug/Kg	--	0.0072	U	0.0027	J	0.0059	U	0.061	U
1,2,3,7,8-PeCDD	ug/Kg	--	0.0072	U	0.013		0.0059	U	0.019	QJ
1,2,3,7,8-PeCDF	ug/Kg	--	0.00054	QJ	0.027		0.00053	J	0.24	Q
2,3,4,6,7,8-HxCDF	ug/Kg	--	0.00046	QJ	0.075		0.00052	QJ	1	
2,3,4,7,8-PeCDF	ug/Kg	--	0.0016	QJ	0.14		0.00075	QJ	2.3	Q
2,3,7,8-TCDD	ug/Kg	--	0.0014	U	0.0	U	0.0012	U	0.0076	QJ
2,3,7,8-TCDF	ug/Kg	--	0.001	QJ	0.0084		0.00093	QJ	0.61	Q
OCDD	ug/Kg	--	0.046	B	3.1	B	0.15	B	0.97	B
OCDF	ug/Kg	--	0.1		8.1	E	0.015		250	B
Total HpCDD	ug/Kg	--	0.0089	QJ	0.44		0.0054	QJ	0.63	
Total HpCDF	ug/Kg	--	0.062	Q	5.7	B	0.017	Q	130	
Total HxCDD	ug/Kg	--	0.0019	J	0.24		0.0032	QJ	0.55	
Total HxCDF	ug/Kg	--	0.041	Q	2.8	J	0.019	QJ	63	Q
Total PeCDD	ug/Kg	--	0.0028	QJS	0.29	Q	0.0032	QJ	0.32	Q
Total PeCDF	ug/Kg	--	0.021	QJS	1.1		0.032	QJ	23	Q
Total TCDD	ug/Kg	--	0.0019	QJ	0.15	Q	0.0018	QJ	0.31	Q
Total TCDF	ug/Kg	--	0.012	Q	0.43		0.038	SQ	9.8	Q
Polychlorinated Dioxins/Furans (Dioxin Equivalents)										
1,2,3,4,6,7,8-HpCDD	0.01	--	0.000048		0.0022		--		0.0029	
1,2,3,4,6,7,8-HpCDF	0.01	--	0.00052		0.047		0.00013		1.1	
1,2,3,4,7,8,9-HpCDF	0.01	--	--		0.0014		--		0.032	
1,2,3,4,7,8-HxCDD	0.10	--	--		0.0011		--		0.0022	
1,2,3,4,7,8-HxCDF	0.10	--	--		0.14		0.00055		--	
1,2,3,6,7,8-HxCDD	0.10	--	--		0.0035		0.000041		0.011	
1,2,3,6,7,8-HxCDF	0.10	--	0.00023		0.022		0.00011		--	
1,2,3,7,8,9-HxCDD	0.10	--	--		0.00082		--		0.0029	

TABLE 4-6

ANALYTICAL RESULTS
PIPE RUN TRENCH SPOIL
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	TSWC-03 05/07/08 Primary		TSWC-03-2 10/21/08 Resample		TSWC-04 05/07/08 Primary		TSWC-05 05/07/08 Primary	
		Sample Depth	**1.0-3.0 ft**		**0.0-3.0 ft**		**1.0-3.0 ft**		**1.0-3.0 ft**	
		VOC Sample Depth	**2.0-3.0 ft**		**--**		**2.0-3.0 ft**		**2.0-3.0 ft**	
Polychlorinated Dioxins/Furans (Dioxin Equivalents) (Continued)										
1,2,3,7,8,9-HxCDF	0.10	--	--		0.00027		--		--	
1,2,3,7,8-PCDD	1.00	--	--		0.013		--		--	
1,2,3,7,8-PCDF	0.05	--	--		0.00135		0.0000265		--	
2,3,4,6,7,8-HxCDF	0.10	--	--		0.0075		--		0.1	
2,3,4,7,8-PCDF	0.50	--	--		0.07		--		--	
2,3,7,8-TCDD	1.00	--	--		--		--		--	
2,3,7,8-TCDF	0.10	--	--		0.00084		--		--	
OCDD	0.0001	--	0.0000046		0.00031		0.000015		0.000097	
OCDF	0.0001	--	0.00001		0.00081		0.0000015		0.025	
Total 2,3,7,8-TCDD Equivalents[2]	ug/Kg	1	8.1E-04		3.1E-01		8.7E-04		**1.3E+00**	
Polychlorinated Biphenyls (Aroclors)										
Aroclor 1016	mg/Kg	1	0.0035	U	--		0.0029	U	0.003	U
Aroclor 1221	mg/Kg	1	0.0045	U	--		0.0037	U	0.0039	U
Aroclor 1232	mg/Kg	1	0.0041	U	--		0.0034	U	0.13	
Aroclor 1242	mg/Kg	1	0.0039	U	--		0.0032	U	0.0033	U
Aroclor 1248	mg/Kg	1	0.0022	U	--		0.0019	U	0.0019	U
Aroclor 1254	mg/Kg	1	0.0034	U	--		0.0028	U	0.0029	U
Aroclor 1260	mg/Kg	1	0.011	J	--		0.0049	J	0.03	PG
Aroclor 1262	mg/Kg	1	0.0052	U	--		0.0043	U	0.0044	U
Aroclor 1268	mg/Kg	1	0.0031	U	--		0.0025	U	0.0026	U
Metals										
Aluminum	mg/Kg	--	23500		--		5290		24900	
Antimony	mg/Kg	450	0.26	U	--		0.76	B	0.56	U
Arsenic	mg/Kg	19	1.3	B	--		6.8		1.4	U
Barium	mg/Kg	59000	3100		--		163		21.9	B
Beryllium	mg/Kg	140	0.089	U	--		0.62		0.075	U
Cadmium	mg/Kg	78	2		--		0.32	B	2.3	
Calcium	mg/Kg	--	74200		--		15200		98800	
Chromium[3]	mg/Kg	120000	3640		--		867		9110	
Chromium (Hexavalent)[3]	mg/Kg	20	**800**		--		**59.7**		**1020**	
Cobalt	mg/Kg	590	149		--		4.5	B	135	
Copper	mg/Kg	45000	11.3		--		46.2		16.6	
Iron	mg/Kg	--	80800		--		9810		87100	
Lead	mg/Kg	800	15.7		--		**949**		53.7	
Magnesium	mg/Kg	--	80100		--		1750		50900	
Manganese	mg/Kg	5900	714		--		136		750	
Mercury	mg/Kg	65	0.037	B	--		0.48		0.39	
Nickel	mg/Kg	23000	545		--		14		458	
Potassium	mg/Kg	--	158	B	--		675		60.8	U
Selenium	mg/Kg	5700	0.83	U	--		1		0.7	U
Silver	mg/Kg	5700	0.66	BJ	--		0.27	BJ	0.59	BJ
Sodium	mg/Kg	--	1740		--		233	B	901	B
Thallium	mg/Kg	79	1.9	B	--		0.65	B	4.1	
Vanadium	mg/Kg	1100	**1620**		--		18		**1340**	
Zinc	mg/Kg	110000	300		--		72.1		271	

TABLE 4-6

ANALYTICAL RESULTS
PIPE RUN TRENCH SPOIL
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	TSWC-03 05/07/08 Primary		TSWC-03-2 10/21/08 Resample		TSWC-04 05/07/08 Primary		TSWC-05 05/07/08 Primary	
		Sample Depth	**1.0-3.0 ft**		**0.0-3.0 ft**		**1.0-3.0 ft**		**1.0-3.0 ft**	
		VOC Sample Depth	**2.0-3.0 ft**		**--**		**2.0-3.0 ft**		**2.0-3.0 ft**	
Toxicity Characteristic Leaching Procedure[4]										
1,1-Dichloroethene	mg/L	0.7	0.035	U	--		0.035	U	0.035	U
1,2-Dichloroethane	mg/L	0.5	0.026	U	--		0.026	U	0.026	U
1,4-Dichlorobenzene	mg/L	7.5	0.034	J	--		0.0046	U	0.0046	U
2,4,5-Trichlorophenol	mg/L	400	0.0041	U	--		0.0041	U	0.0041	U
2,4,6-Trichlorophenol	mg/L	2	0.0026	U	--		0.0026	U	0.0026	U
2,4-Dinitrotoluene	mg/L	0.13	0.0028	U	--		0.0028	U	0.0028	U
2-Butanone	mg/L	200	0.029	U	--		0.029	U	0.029	U
Benzene	mg/L	0.5	0.033	U	--		0.033	U	0.033	U
Carbon Tetrachloride	mg/L	0.5	0.037	U	--		0.037	U	0.037	U
Chlorobenzene	mg/L	100	0.028	U	--		0.028	U	0.028	U
Chloroform	mg/L	6	0.031	U	--		0.031	U	0.031	U
Cresols	mg/L	200	0.0089	U	--		0.0089	U	0.0089	U
Hexachlorobenzene	mg/L	0.13	0.0049	U	--		0.0049	U	0.0049	U
Hexachlorobutadiene	mg/L	0.5	0.0033	U	--		0.0033	U	0.0033	U
Hexachloroethane	mg/L	3	0.0036	U	--		0.0036	U	0.0036	U
Nitrobenzene	mg/L	2	0.0056	U	--		0.0056	U	0.0056	U
Pentachlorophenol	mg/L	100	0.005	U	--		0.005	U	0.005	U
Pyridine	mg/L	5	0.011	U	--		0.011	U	0.011	U
Tetrachloroethene	mg/L	0.7	0.023	U	--		0.023	U	0.023	U
Trichloroethene	mg/L	0.5	0.035	U	--		0.035	U	0.035	U
Vinyl chloride	mg/L	0.2	0.038	U	--		0.038	U	0.038	U
Arsenic	mg/L	5	0.14	BJ	--		0.13	B	0.15	B
Barium	mg/L	100	0.61	BJ	--		0.95	B	0.0058	B
Cadmium	mg/L	1	0.0012	U	--		0.0016	B	0.0012	U
Chromium	mg/L	5	**14.3**	J	--		0.053	B	**27.4**	
Lead	mg/L	5	0.03	B	--		1.2		0.018	B
Mercury	mg/L	0.2	0.000055	U	--		0.000055	U	0.000055	U
Selenium	mg/L	1	0.015	U	--		0.015	U	0.015	U
Silver	mg/L	5	0.0025	U	--		0.0025	U	0.0025	U
RCRA Characteristics and Indicators										
Corrosivity	SU	2<pH<12.5	11.4		--		8.63		10.45	
Cyanide	mg/Kg	23000	1.3	J	--		0.76	J	5.7	J
Total Sulfide (Reactivity)	mg/Kg		17.7	U	--		66.5		14.9	U
Ignitability	None		No		--		No		No	
Percent Solids	%		77.4		--		77.1		73.7	

TABLE 4-6

ANALYTICAL RESULTS
PIPE RUN TRENCH SPOIL
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Notes:

1. Criteria are the NJDEP Non-Residential Direct Contact Soil Remediation Standards (online at www.nj.gov/dep/srp/regs/rs/rs_appendix1.pdf) unless noted otherwise
2. The 1 ug/kg benchmark for 2,3,7,8-TCDD equivalents is the United States Environmental Protection Agency residential guideline per OSWER Directive 9200.4-26
3. Nonpromulgated criteria for total (trivalent) and hexavalent chromium determined by chromium workgroup (www.state.nj.us/dep/srp/guidance).
   Criterion for residential exposure to trivalent chromium was used for total chromium.
4. Toxicity Characteristic Leaching Procedure limits as specified in 40 Code of Federal Regulations 261.24 (ecfr.gpoaccess.gov). available at electronic CFR website

Exceedances are shown in bold, shaded typeface. Data qualifiers are as follows:

B - Organic results. Analyte detected in associated method blank
B - Inorganic results. Result is an estimate. Quantitation between the detection limit and the reporting limit.
J - Organic results. Result is an estimate. Quantitated between the detection limit and the reporting limit.
J - Inorganic results. Result is an estimated concentration. Quantitated below the reporting limit.
Q - One or more quality control criteria for identification not attained. Value is an Estimated Maximum Possible Concentration. Analyte may be present below the quantitation limit indicated.
S - Organic results. Ion suppression.
U - Not detected at the detection limit indicated.
-- - Not analyzed or criteria unavailable.

TABLE 4-7

ANALYTICAL RESULTS
SEPTIC TANK SOLIDS SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	ST-02-S 05/29/08 Primary		ST-03-S 05/29/08 Primary		ST-04-S 05/29/08 Primary		ST-05-S 05/29/08 Primary		ST-06-S 05/29/08 Primary		ST-07-S 05/29/08 Primary	
Volatile Organics														
1,1,1-Trichloroethane	mg/Kg	4200	12	U	3.6	U	110	U	8.8	U	52	U	200	U
1,1,2,2-Tetrachloroethane	mg/Kg	3	14	U	4	U	120	U	9.8	U	58	U	220	U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg	--	15	U	4.4	U	130	U	11	U	63	U	240	U
1,1,2-Trichloroethane	mg/Kg	6	13	U	3.8	U	120	U	9.2	U	55	U	210	U
1,1-Dichloroethane	mg/Kg	24	12	U	3.4	U	110	U	8.5	U	50	U	190	U
1,1-Dichloroethene	mg/Kg	150	14	U	4.1	U	130	U	10	U	60	U	230	U
1,2,4-Trichlorobenzene	mg/Kg	820	12	U	120		**2600**		12	J	360		**6300**	
1,2-Dibromoethane	mg/Kg	0.04	12	U	3.7	U	110	U	9	U	53	U	200	U
1,2-Dichlorobenzene	mg/Kg	59000	13	U	1100		8500		26	J	2500		32000	
1,2-Dichloroethane	mg/Kg	3	13	U	3.9	U	120	U	9.5	U	56	U	210	U
1,2-Dichloropropane	mg/Kg	5	13	U	3.9	U	120	U	9.6	U	57	U	210	U
1,3-Dichlorobenzene	mg/Kg	59000	120		380		9900		27	J	1400		27000	
1,4-Dichlorobenzene	mg/Kg	13	**580**		**680**		**6400**		**21**	J	**2700**		**16000**	
2-Butanone	mg/Kg	44000	12	U	3.4	U	110	U	8.4	U	50	U	190	U
2-Hexanone	mg/Kg	--	9.5	U	2.8	U	87	U	6.9	U	41	U	150	U
4-Methyl-2-pentanone	mg/Kg	--	10	U	3.1	U	95	U	7.5	U	45	U	170	U
Acetone	mg/Kg	--	14	U	4.2	U	130	U	10	U	61	U	230	U
Benzene	mg/Kg	5	**15**	J	**21**		110	U	**70**		53	U	200	U
Bromodichloromethane	mg/Kg	3	12	U	3.4	U	110	U	8.4	U	50	U	190	U
Bromoform	mg/Kg	280	12	U	3.6	U	110	U	8.8	U	52	U	200	U
Bromomethane	mg/Kg	59	15	U	4.5	U	140	U	11	U	65	U	240	U
Carbon disulfide	mg/Kg	110000	15	U	4.3	U	130	U	11	U	63	U	240	U
Carbon tetrachloride	mg/Kg	2	11	U	3.2	U	98	U	7.7	U	46	U	170	U
Chlorobenzene	mg/Kg	7400	970		2200		1000		1200		420		980	
Chloroethane	mg/Kg	1100	17	U	5.1	U	160	U	12	U	74	U	280	U
Chloroform	mg/Kg	2	13	U	3.7	U	120	U	9.2	U	54	U	200	U
Chloromethane	mg/Kg	12	13	U	3.9	U	120	U	9.6	U	57	U	210	U
cis-1,2-Dichloroethene	mg/Kg	560	13	U	3.8	U	120	U	9.4	U	55	U	210	U
cis-1,3-Dichloropropene	mg/Kg	7	11	U	3.2	U	98	U	7.8	U	46	U	170	U
Cyclohexane	mg/Kg	--	12	U	3.5	U	110	U	8.7	U	51	U	190	U
Dibromochloromethane	mg/Kg	8	10	U	3.3	U	100	U	8	U	48	U	180	U
Dibromochloropropane	mg/Kg	--	11	U	3	U	92	U	7.3	U	43	U	160	U
Dichlorodifluoromethane	mg/Kg	230000	15	U	4.5	U	140	U	11	U	66	U	250	U
Ethylbenzene	mg/Kg	110000	14	U	4.2	U	130	U	10	U	61	U	230	U
Isopropylbenzene	mg/Kg	--	13	U	3.8	U	120	U	9.3	U	55	U	210	U
Methyl Acetate	mg/Kg	--	13	U	3.7	U	120	U	13	J	54	U	200	U
Methylcyclohexane	mg/Kg	--	13	U	4	U	120	U	9.7	U	58	U	220	U
Methylene chloride	mg/Kg	97	9.1	U	2.7	U	84	U	6.7	U	39	U	150	U
Methyltert-butylether	mg/Kg	320	11	U	3.3	U	100	U	8	U	47	U	180	U
Styrene	mg/Kg	260	13	U	3.9	U	120	U	9.7	U	57	U	210	U
Tetrachloroethene	mg/Kg	5	15	U	4.6	U	140	U	11	U	67	U	250	U
Toluene	mg/Kg	91000	9.4	U	6.2	J	87	U	6.9	U	41	U	150	U
trans-1,2-Dichloroethene	mg/Kg	720	14	U	4.1	U	130	U	10	U	60	U	220	U
trans-1,3-Dichloropropene	mg/Kg	7	10	U	3.1	U	95	U	7.6	U	45	U	170	U
Trichloroethene	mg/Kg	20	13	U	4	U	120	U	9.7	U	58	U	220	U
Trichlorofluoromethane	mg/Kg	340000	19	U	5.7	U	180	U	14	U	83	U	310	U
Vinyl chloride	mg/Kg	2	13	U	3.9	U	120	U	9.7	U	57	U	210	U
Xylene (total)	mg/Kg	170000	42	U	12	U	390	U	31	U	180	U	680	U
Semivolatile Organics														
1,1'-Biphenyl	mg/Kg	34000	160		4.5	J	130		3.7	J	7.1	J	52	
2,2'-oxybis(1-chloropropane)	mg/Kg	--	0.39	U	2	U	7.3	U	2.1	U	3.9	U	3	U
2,4,5-Trichlorophenol	mg/Kg	68000	0.53	U	2.8	U	10	U	3	U	5.3	U	4.2	U
2,4,6-Trichlorophenol	mg/Kg	74	0.52	U	2.7	U	9.8	U	2.9	U	5.2	U	4.1	U
2,4-Dichlorophenol	mg/Kg	2100	0.19	U	1	U	3.6	U	1.1	U	1.9	U	1.5	U
2,4-Dimethylphenol	mg/Kg	14000	0.28	U	1.4	U	5.2	U	1.5	U	2.8	U	2.2	U
2,4-Dinitrophenol	mg/Kg	1400	7.6	U	40	U	140	U	42	U	76	U	60	U
2,4-Dinitrotoluene	mg/Kg	3	0.33	U	1.7	U	6.2	U	1.8	U	3.3	U	2.6	U
2,6-Dinitrotoluene	mg/Kg	3	0.42	U	2.2	U	7.8	U	2.3	U	4.1	U	3.3	U
2-Chloronaphthalene	mg/Kg	--	0.37	U	1.9	U	7	U	2.1	U	3.7	U	2.9	U
2-Chlorophenol	mg/Kg	2200	0.32	U	1.7	U	6.1	U	1.8	U	3.2	U	2.5	U
2-Methylnaphthalene	mg/Kg	2400	170		6	J	**4500**		32	J	68		1700	
2-Methylphenol	mg/Kg	3400	0.4	U	2.1	U	7.6	U	2.2	U	4	U	3.2	U
2-Nitroaniline	mg/Kg	23000	0.39	U	2	U	7.3	U	2.1	U	3.9	U	3	U
2-Nitrophenol	mg/Kg	--	0.51	U	2.7	U	9.6	U	2.8	U	5.1	U	4	U
3,3'-Dichlorobenzidine	mg/Kg	4	1.5	U	7.6	U	27	U	8	U	14	U	11	U
3-Nitroaniline	mg/Kg	--	0.55	U	2.9	U	10	U	3.1	U	5.5	U	4.3	U
4,6-Dinitro-2-methylphenol	mg/Kg	68	4.6	U	24	U	85	U	25	U	45	U	36	U
4-Bromophenylphenyl ether	mg/Kg	--	0.29	U	1.5	U	5.4	U	1.6	U	2.9	U	2.3	U
4-Chloro-3-methylphenol	mg/Kg	--	0.39	U	2.1	U	7.4	U	2.2	U	3.9	U	3.1	U
4-Chloroaniline	mg/Kg	--	0.56	U	3.2	J	10	U	3.1	U	5.6	U	4.4	U
4-Chlorophenyl phenyl ether	mg/Kg	--	0.32	U	1.7	U	6	U	1.8	U	3.2	U	2.5	U
4-Methylphenol	mg/Kg	340	0.4	U	26	J	52	J	2.2	U	4	U	5	J
4-Nitroaniline	mg/Kg	--	0.27	U	1.4	U	5.1	U	1.5	U	6.2	J	2.1	U
4-Nitrophenol	mg/Kg	--	0.5	U	2.6	U	9.4	U	2.8	U	5	U	3.9	U
Acenaphthene	mg/Kg	37000	11		2.4	J	12	J	6.6	J	11	J	5.6	J
Acenaphthylene	mg/Kg	300000	0.38	U	2	U	7	U	2.1	U	3.7	U	2.9	U
Acetophenone	mg/Kg	5	0.39	U	2	U	7.3	U	2.2	U	3.9	U	3.1	U
Anthracene	mg/Kg	30000	5	J	1.9	U	6.9	U	4.7	J	3.7	U	2.9	U
Atrazine	mg/Kg	2400	0.44	U	2.3	U	8.3	U	2.5	U	4.4	U	3.5	U
Benzaldehyde	mg/Kg	68000	0.68	U	3.6	U	13	U	3.8	U	6.8	U	5.4	U
Benzo(a)anthracene	mg/Kg	2	**2.3**	J	**3.7**	J	4.8	U	**22**	J	**8.1**	J	2	U
Benzo(a)pyrene	mg/Kg	0.2	**1.5**	J	**3.9**	J	**6.7**	J	**19**	J	**5.9**	J	1.6	U
Benzo(b)fluoranthene	mg/Kg	2	**2.8**	J	**4**	J	4.7	U	**36**		**9.7**	J	1.9	U
Benzo(ghi)perylene	mg/Kg	30000	1	J	5	J	4.1	U	15	J	2.2	U	1.7	U
Benzo(k)fluoranthene	mg/Kg	23	0.21	U	1.1	U	3.9	U	1.1	U	2.1	U	1.6	U
Bis(2-chloroethoxy)methane	mg/Kg	--	0.3	U	1.6	U	5.6	U	1.7	U	3	U	2.4	U
Bis(2-chloroethyl)ether	mg/Kg	2	0.15	U	0.76	U	2.7	U	0.8	U	1.5	U	1.1	U

TABLE 4-7

ANALYTICAL RESULTS
SEPTIC TANK SOLIDS SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	ST-02-S 05/29/08 Primary		ST-03-S 05/29/08 Primary		ST-04-S 05/29/08 Primary		ST-05-S 05/29/08 Primary		ST-06-S 05/29/08 Primary		ST-07-S 05/29/08 Primary	
Semivolatile Organics (Continued)														
Bis(2-ethylhexyl)phthalate	mg/Kg	140	18		16	J	56	J	11	J	4.9	U	12	J
Butyl benzyl phthalate	mg/Kg	14000	0.52	U	4.6	J	9.7	U	2.9	U	5.2	U	4.1	U
Caprolactam	mg/Kg	340000	1.2	U	6.4	U	23	U	6.8	U	12	U	9.6	U
Carbazole	mg/Kg	96	0.7	J	2.5	J	5	U	1.5	U	2.6	U	2.1	U
Chrysene	mg/Kg	230	2.4	J	3.5	J	7.8	J	24	J	8.4	J	2	U
Dibenzo(a,h)anthracene	mg/Kg	0.2	0.41	U	2.1	U	7.7	U	**3.3**	J	4.1	U	3.2	U
Dibenzofuran	mg/Kg	--	6.2	J	1.9	U	6.7	U	3.8	J	8.6	J	9	J
Diethyl phthalate	mg/Kg	550000	0.58	U	3.3	J	11	U	3.2	U	5.8	U	4.5	U
Dimethyl phthalate	mg/Kg	--	0.37	U	1.9	U	6.8	U	2	U	3.6	U	2.9	U
Di-n-butyl phthalate	mg/Kg	68000	1.1	U	5.6	U	20	U	5.9	U	11	U	8.4	U
Di-n-octyl phthalate	mg/Kg	27000	0.57	J	3.5	J	8.4	U	2.5	U	4.5	U	3.5	U
Fluoranthene	mg/Kg	24000	11		5.2	J	16	J	36		14	J	3.3	U
Semivolatile Organics (Continued)														
Fluorene	mg/Kg	24000	8.8		2.1	J	5.9	U	4.9	J	5.3	J	2.4	U
Hexachlorobenzene	mg/Kg	1	**1.1**	J	2	U	7.3	U	2.1	U	3.9	U	3	U
Hexachlorobutadiene	mg/Kg	25	0.39	U	3	J	7.4	U	2.2	U	3.9	U	3.1	U
Hexachlorocyclopentadiene	mg/Kg	110	0.3	U	1.5	U	5.6	U	1.6	U	3	U	2.3	U
Hexachloroethane	mg/Kg	140	0.29	U	4.7	J	5.4	U	1.6	U	2.9	U	2.3	U
Indeno(1,2,3-cd)pyrene	mg/Kg	2	0.98	J	**2.4**	J	4.3	U	**12**	J	2.3	U	1.8	U
Isophorone	mg/Kg	2000	0.36	U	1.9	U	6.7	U	2	U	3.6	U	2.8	U
Naphthalene	mg/Kg	17	**33**		**81**		**1100**		**620**		**1100**		**390**	
Nitrobenzene	mg/Kg	340	0.16	U	0.84	U	3	U	0.89	U	1.6	U	1.3	U
N-Nitrosodiphenylamine	mg/Kg	390	0.35	U	1.8	U	6.6	U	1.9	U	3.5	U	2.7	U
N-Nitrosodipropylamine	mg/Kg	0.3	0.16	U	0.82	U	3	U	0.87	U	1.6	U	1.2	U
Pentachlorophenol	mg/Kg	10	0.48	U	2.5	U	9	U	2.7	U	4.8	U	3.8	U
Phenanthrene	mg/Kg	300000	25		4	J	11	J	26	J	8.7	J	2.4	U
Phenol	mg/Kg	210000	0.56	J	2	U	7.3	U	2.2	U	3.9	U	3	U
Pyrene	mg/Kg	18000	7.6		3.8	J	13	J	29	J	9.7	J	5.1	J
Polychlorinated Biphenyls (Aroclors)														
Aroclor 1016	mg/Kg	1	0.24	U	0.013	U	0.018	U	0.013	U	0.0048	U	0.019	U
Aroclor 1221	mg/Kg	1	0.31	U	0.016	U	0.023	U	0.017	U	0.0062	U	0.024	U
Aroclor 1232	mg/Kg	1	**74**		0.015	U	**1.5**		0.93		1		**7.5**	
Aroclor 1242	mg/Kg	1	0.26	U	0.014	U	0.02	U	0.015	U	0.0053	U	0.021	U
Aroclor 1248	mg/Kg	1	0.15	U	0.0081	U	0.011	U	0.0085	U	0.0031	U	0.012	U
Aroclor 1254	mg/Kg	1	0.23	U	0.012	U	0.017	U	0.013	U	0.0046	U	0.018	U
Aroclor 1260	mg/Kg	1	**4**		0.012	U	0.18	P	0.21		0.21		0.51	P
Aroclor 1262	mg/Kg	1	0.35	U	0.019	U	0.026	U	0.02	U	0.0071	U	0.028	U
Aroclor 1268	mg/Kg	1	0.21	U	0.011	U	0.015	U	0.012	U	0.0042	U	0.016	U
Metals														
Aluminum	mg/Kg	--	8250		7140		2230		6100		6980		8970	
Antimony	mg/Kg	450	9.4		2	B	2.6	B	1.3	B	11.9		6.8	B
Arsenic	mg/Kg	19	16.7		7.6		6.5	B	14.6		**20.2**		13.7	
Barium	mg/Kg	59000	216	J	67.1	BJ	72	BJ	198	J	621	J	82.4	BJ
Beryllium	mg/Kg	140	2.7		0.34	B	0.22	U	0.37	B	0.57	B	0.23	U
Cadmium	mg/Kg	78	1.8		1.5	B	2.4	B	8.4		0.33	B	0.53	B
Calcium	mg/Kg	--	10600		6130		16700		40900		10600		5130	
Chromium[2]	mg/Kg	120000	4570		2360		701		2290		2850		10500	
Cobalt	mg/Kg	590	40.6		9.3	B	18.3	B	185		21.5		21.3	B
Copper	mg/Kg	45000	692		247		228		451		590		510	
Iron	mg/Kg	--	65900		41100		45600		34400		183000		34000	
Lead	mg/Kg	800	**2950**		438		182		301		**9330**		**2940**	
Magnesium	mg/Kg	--	5720		3450		1960	B	9560		2640		5120	
Manganese	mg/Kg	5900	443		146		311		307		642		75.2	
Mercury	mg/Kg	65	4.8		2		9.1		11		6.1		1	
Nickel	mg/Kg	23000	255		60.1		34.7		97.5		178		194	
Potassium	mg/Kg	--	488	B	452	B	417	B	629	B	674	B	520	B
Selenium	mg/Kg	5700	2.2		1.5	U	2.8	B	2.7		3.4		5.5	
Silver	mg/Kg	5700	9.3	J	6.2	J	1.8	BJ	1.5	BJ	22.5	J	1.7	BJ
Sodium	mg/Kg	--	451	B	1250	B	5790		6740		2300		10600	
Thallium	mg/Kg	79	1.9		1.7	U	2.3	U	1.7	U	4		2.4	U
Vanadium	mg/Kg	1100	249		115		77.1		210		78.8		651	
Zinc	mg/Kg	110000	1910	E	530		1070		1070		196		224	
Indicator Parameters														
Corrosivity (pH)	SU	2<pH<12.5	7.2		7.4		7.5		7.4		8.1		8.5	
Cyanide	mg/Kg	23000	1.2		1.9	B	0.78	B	0.72	B	0.75	B	0.85	B
Total Sulfide	mg/Kg	--	1090		6920		3210		16600		1790		4390	
Ignitability	none	--	No		No		No		No		No		No	
Percent Solids	%	--	51.4		19.3		13.7		18.6		50.9		13.1	

Notes:

1. Criteria are the NJDEP Non-Residential Direct Contact Soil Remediation Standards (online at www.nj.gov/dep/srp/regs/rs/rs appendix1.pdf) unless noted otherwise.
2. Nonpromulgated criteria for total (trivalent) determined by chromium workgroup (www.state.nj.us/dep/srp/guidance).
   Criterion for residential exposure to trivalent chromium was used for total chromium.
   Exceedances are shown in bold, shaded typeface. Data qualifiers are as follows:

   B - Inorganic results. Result is an estimate. Quantitation between the detection limit and the reporting limit.
   J - Organic results. Result is an estimate. Quantitated between the detection limit and the reporting limit.
   J - Inorganic results. Result is an estimated concentration. Quantitated below the reporting limit.
   P - Organic results. Percent difference between initial and confirmation column results is greater than 40%.
   U - Not detected at the detection limit indicated.
   -- - Not analyzed or criteria unavailable.

TABLE 4-8

ANALYTICAL RESULTS
SEPTIC TANK WATER SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Discharge Limits NJDEP BGR Permit[1]		ST-02-W 05/29/08		ST-03-W 05/29/08		ST-04-W 05/29/08		ST-05-W 05/29/08		ST-06-W 05/29/08		ST-07-W 05/29/08	
		Mthly Avg.	Daily Max.	Primary		Primary		Primary		Primary		Primary		Primary	
Volatile Organics															
1,1,1-Trichloroethane	ug/L	21	54	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	ug/L	--	10	0.93	U	0.93	U	0.93	U	0.93	U	0.93	U	0.93	U
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	--	--	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
1,1,2-Trichloroethane	ug/L	21	54	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U
1,1-Dichloroethane	ug/L	22	59	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene	ug/L	26	25	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
1,2,4-Trichlorobenzene	ug/L	68	140	0.38	U	0.48	J	17		1.7	J	0.38	U	12	
1,2-Dibromoethane	ug/L	--	--	0.61	U	0.61	U	0.61	U	0.61	U	0.61	U	0.61	U
1,2-Dichlorobenzene	ug/L	77	163	0.68	U	0.96	J	0.68	U	1.5	J	1.2	J	9.2	
1,2-Dichloroethane	ug/L	68	211	0.96	U	0.96	U	0.96	U	0.96	U	0.96	U	0.96	U
1,2-Dichloropropane	ug/L	153	230	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U
1,3-Dichlorobenzene	ug/L	31	44	0.51	U	1.5	J	0.51	U	1	J	2.7	J	**160**	
1,4-Dichlorobenzene	ug/L	--	28	0.53	U	0.69	J	0.53	U	1.1	J	6.1		**63**	
2-Butanone	ug/L	--	--	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
2-Hexanone	ug/L	--	--	0.57	U	0.57	U	0.57	U	0.57	U	0.57	U	0.57	U
4-Methyl-2-pentanone	ug/L	--	--	0.59	U	0.59	U	0.59	U	0.59	U	0.59	U	0.59	U
Acetone	ug/L	--	--	5	U	5	U	5	U	5	U	5	U	5	U
Benzene	ug/L	37	136	0.99	U	0.99	U	6.6		0.99	U	0.99	U	0.99	U
Bromodichloromethane	ug/L	--	12	0.93	U	0.93	U	0.93	U	0.93	U	0.93	U	0.93	U
Bromoform	ug/L	29	58	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
Bromomethane	ug/L	20	40	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U
Carbon disulfide	ug/L	--	--	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
Carbon tetrachloride	ug/L	9	--	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
Chlorobenzene	ug/L	15	28	0.53	U	0.64	J	8.2		1	J	8.7		15	
Chloroethane	ug/L	104	268	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U
Chloroform	ug/L	21	46	1	U	1	U	1	U	1	U	1	U	1	U
Chloromethane	ug/L	86	190	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
cis-1,2-Dichloroethene	ug/L	--	--	0.67	U	0.67	U	0.67	U	0.67	U	0.67	U	0.67	U
cis-1,3-Dichloropropene	ug/L	29	44	0.73	U	0.73	U	0.73	U	0.73	U	0.73	U	0.73	U
Cyclohexane	ug/L	--	--	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
Dibromochloromethane	ug/L	--	--	0.65	U	0.65	U	0.65	U	0.65	U	0.65	U	0.65	U
Dibromochloropropane	ug/L	--	14	0.35	U	0.35	U	0.35	U	0.35	U	0.35	U	0.35	U
Dichlorodifluoromethane	ug/L	--	--	0.64	U	0.64	U	0.64	U	0.64	U	0.64	U	0.64	U
Ethylbenzene	ug/L	32	108	0.62	U	0.62	U	0.62	U	0.62	U	0.62	U	0.62	U
Isopropylbenzene	ug/L	--	--	0.53	U	0.53	U	0.53	U	0.53	U	0.53	U	0.53	U
Methyl Acetate	ug/L	--	--	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U
Methylcyclohexane	ug/L	--	--	0.56	U	0.56	U	0.56	U	0.56	U	0.56	U	0.56	U
Methylene chloride	ug/L	40	89	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
Methyltert-butylether	ug/L	--	--	1	U	1	U	1	U	1	U	1	U	1	U
Styrene	ug/L	--	--	0.64	U	0.64	U	0.64	U	0.64	U	0.64	U	0.64	U
Tetrachloroethene	ug/L	22	56	0.82	U	0.82	U	0.82	U	0.82	U	0.82	U	0.82	U
Toluene	ug/L	26	80	0.85	U	0.85	U	0.85	U	0.85	U	0.85	U	0.85	U
trans-1,2-Dichloroethene	ug/L	21	54	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U
trans-1,3-Dichloropropene	ug/L	29	44	0.58	U	0.58	U	0.58	U	0.58	U	0.58	U	0.58	U
Trichloroethene	ug/L	21	54	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
Trichlorofluoromethane	ug/L	--	--	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
Vinyl chloride	ug/L	104	268	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U
Xylene (total)	ug/L	--	--	2	U	2	U	2	U	2	U	2	U	2	U
Semivolatile Organics															
1,1'-Biphenyl	ug/L	--	--	0.62	U	0.63	U	0.65	U	0.62	U	0.63	U	0.63	U
2,2'-oxybis(1-chloropropane)	ug/L	301	757	0.27	U	0.27	U	0.28	U	0.27	U	0.27	U	0.27	U
2,4,5-Trichlorophenol	ug/L	--	--	0.64	U	0.65	U	0.68	U	0.64	U	0.65	U	0.65	U
2,4,6-Trichlorophenol	ug/L	--	20	0.59	U	0.59	U	0.61	U	0.59	U	0.59	U	0.59	U
2,4-Dichlorophenol	ug/L	39	112	0.5	U	0.51	U	0.52	U	0.5	U	0.51	U	6.8	J
2,4-Dimethylphenol	ug/L	18	36	0.53	U	0.54	U	0.56	U	0.53	U	0.54	U	0.54	U
2,4-Dinitrophenol	ug/L	71	123	13	U	13	U	14	U	13	U	13	U	13	U
2,4-Dinitrotoluene	ug/L	--	18	0.47	U	0.47	U	0.49	U	0.47	U	0.47	U	0.47	U
2,6-Dinitrotoluene	ug/L	255	641	0.52	U	0.53	U	0.55	U	0.52	U	0.53	U	0.53	U
2-Chloronaphthalene	ug/L	--	--	0.46	U	0.46	U	0.48	U	0.46	U	0.46	U	0.46	U
2-Chlorophenol	ug/L	31	98	0.47	U	0.47	U	0.49	U	0.47	U	0.47	U	0.47	U
2-Methylnaphthalene	ug/L	--	--	0.48	U	0.49	U	0.97	J	0.48	U	0.49	U	0.49	U
2-Methylphenol	ug/L	--	--	0.53	U	0.53	U	0.55	U	0.53	U	0.53	U	0.53	U
2-Nitroaniline	ug/L	--	--	0.49	U	0.49	U	0.51	U	0.49	U	0.49	U	0.49	U
2-Nitrophenol	ug/L	41	69	0.56	U	0.56	U	0.58	U	0.56	U	0.56	U	0.56	U
3,3'-Dichlorobenzidine	ug/L	--	60	0.42	U	0.43	U	0.44	U	0.42	U	0.43	U	0.43	U
3-Nitroaniline	ug/L	--	--	0.41	U	0.42	U	0.43	U	0.41	U	0.42	U	0.42	U
4,6-Dinitro-2-methylphenol	ug/L	--	--	15	U	15	U	15	U	15	U	15	U	15	U
4-Bromophenylphenyl ether	ug/L	--	--	0.51	U	0.52	U	0.54	U	0.51	U	0.52	U	0.52	U
4-Chloro-3-methylphenol	ug/L	--	--	0.61	U	0.61	U	0.64	U	0.61	U	0.61	U	0.61	U
4-Chloroaniline	ug/L	--	--	0.48	U	0.48	U	0.5	U	0.48	U	0.48	U	0.48	U
4-Chlorophenyl phenyl ether	ug/L	--	--	0.44	U	0.44	U	0.46	U	0.44	U	0.44	U	0.44	U
4-Methylphenol	ug/L	--	--	0.76	U	0.77	U	0.8	U	0.76	U	0.77	U	0.77	U
4-Nitroaniline	ug/L	--	--	0.26	U	0.26	U	0.27	U	0.26	U	0.26	U	0.26	U
4-Nitrophenol	ug/L	72	124	0.72	U	0.73	U	0.76	U	0.72	U	0.73	U	0.73	U
Acenaphthene	ug/L	--	--	0.54	U	0.54	U	0.56	U	0.54	U	0.54	U	0.54	U
Acenaphthylene	ug/L	--	--	0.48	U	0.48	U	0.5	U	0.48	U	0.48	U	0.48	U
Acetophenone	ug/L	--	--	0.48	U	0.48	U	0.5	U	0.48	U	0.48	U	0.48	U
Anthracene	ug/L	22	59	0.52	U	0.53	U	0.55	U	0.52	U	0.53	U	0.53	U
Atrazine	ug/L	--	--	0.4	U	0.41	U	0.42	U	0.4	U	0.41	U	0.41	U
Benzaldehyde	ug/L	--	--	0.56	U	0.56	U	0.58	U	0.56	U	0.56	U	0.56	U
Benzo(a)anthracene	ug/L	--	10	0.42	U	0.43	U	0.44	U	1.1	J	0.43	U	1.1	J

TABLE 4-8

ANALYTICAL RESULTS
SEPTIC TANK WATER SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Discharge Limits NJDEP BGR Permit[1]		ST-02-W 05/29/08		ST-03-W 05/29/08		ST-04-W 05/29/08		ST-05-W 05/29/08		ST-06-W 05/29/08		ST-07-W 05/29/08	
		Mthly Avg.	Daily Max.	Primary		Primary		Primary		Primary		Primary		Primary	
Benzo(a)pyrene	ug/L	--	20	0.45	U	0.46	U	0.47	U	0.85	J	0.46	U	0.98	J
Benzo(b)fluoranthene	ug/L	--	10	0.32	U	0.33	U	0.34	U	2.1	J	0.33	U	2	J
Benzo(ghi)perylene	ug/L	--	--	0.28	U	0.29	U	0.3	U	0.53	J	0.29	U	0.65	J
Benzo(k)fluoranthene	ug/L	--	20	0.41	U	0.41	U	0.43	U	0.41	U	0.41	U	0.41	U
Semivolatile Organics (Continued)															
Bis(2-chloroethoxy)methane	ug/L	--	--	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U
Bis(2-chloroethyl)ether	ug/L	--	10	0.47	U	0.48	U	0.5	U	0.47	U	0.48	U	0.48	U
Bis(2-ethylhexyl)phthalate	ug/L	59	118	1.2	U	1.2	U	1.3	U	1.2	U	1.2	U	1.2	U
Butyl benzyl phthalate	ug/L	--	24	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.4	U
Caprolactam	ug/L	--	--	1.9	U	2	U	2	U	1.9	U	2	U	2	U
Carbazole	ug/L	--	--	0.54	U	0.54	U	0.56	U	0.54	U	0.54	U	0.54	U
Chrysene	ug/L	--	20	0.37	U	0.37	U	0.38	U	1.6	J	0.37	U	1.1	J
Dibenzo(a,h)anthracene	ug/L	--	20	0.36	U	0.36	U	0.38	U	0.36	U	0.36	U	0.36	U
Dibenzofuran	ug/L	--	--	0.55	U	0.56	U	0.58	U	0.55	U	0.56	U	0.56	U
Diethyl phthalate	ug/L	81	203	2.5	U	2.5	U	2.6	U	2.5	U	2.5	U	2.5	U
Dimethyl phthalate	ug/L	19	47	0.43	U	0.44	U	0.46	U	0.43	U	0.44	U	0.44	U
Di-n-butyl phthalate	ug/L	27	57	0.48	U	0.48	U	0.5	U	0.48	U	0.48	U	0.48	U
Di-n-octyl phthalate	ug/L	--	--	0.44	U	0.44	U	0.46	U	0.44	U	0.44	U	0.44	U
Fluoranthene	ug/L	25	68	0.51	U	0.51	U	0.53	U	1.9	J	0.51	U	1.6	J
Fluorene	ug/L	22	59	0.56	U	0.56	U	0.59	U	0.56	U	0.56	U	0.56	U
Hexachlorobenzene	ug/L	--	10	0.45	U	0.45	U	0.47	U	0.45	U	0.45	U	0.45	U
Hexachlorobutadiene	ug/L	20	49	0.39	U	0.39	U	0.41	U	0.39	U	0.39	U	0.39	U
Hexachlorocyclopentadiene	ug/L	--	1800	0.82	U	0.83	U	0.86	U	0.82	U	0.83	U	0.83	U
Hexachloroethane	ug/L	21	54	0.45	U	0.45	U	0.47	U	0.45	U	0.45	U	0.45	U
Indeno(1,2,3-cd)pyrene	ug/L	--	20	0.49	U	0.49	U	0.51	U	0.55	J	0.49	U	0.56	J
Isophorone	ug/L	--	20	0.49	U	0.49	U	0.51	U	0.49	U	0.49	U	0.49	U
Naphthalene	ug/L	--	--	0.44	U	0.45	U	0.57	J	0.44	U	0.45	U	0.45	U
Nitrobenzene	ug/L	27	69	0.66	U	0.67	U	0.69	U	0.66	U	0.67	U	0.67	U
N-Nitrosodiphenylamine	ug/L	--	20	0.5	U	0.51	U	0.53	U	0.5	U	0.51	U	0.51	U
N-Nitrosodipropylamine	ug/L	--	--	0.61	U	0.62	U	0.64	U	0.61	U	0.62	U	0.62	U
Pentachlorophenol	ug/L	--	30	0.85	U	0.86	U	0.9	U	0.85	U	0.86	U	0.86	U
Phenanthrene	ug/L	22	59	0.57	U	0.57	U	0.59	U	0.63	J	0.57	U	0.66	J
Phenol	ug/L	15	26	0.23	U	0.23	U	0.24	U	0.23	U	0.23	U	0.23	U
Pyrene	ug/L	25	67	0.58	U	0.59	U	0.61	U	1.8	J	0.59	U	2.1	J
Polychlorinated Biphenyls (Aroclors)															
Aroclor 1016	ug/L	--	0.05	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Aroclor 1221	ug/L	--	0.05	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Aroclor 1232	ug/L	--	0.05	0.12	U	0.12	U	0.12	U	0.12	U	0.12	U	0.12	U
Aroclor 1242	ug/L	--	0.05	0.076	U	0.076	U	0.075	U	0.075	U	0.076	U	0.076	U
Aroclor 1248	ug/L	--	0.05	0.093	U	0.093	U	0.092	U	0.092	U	0.093	U	0.093	U
Aroclor 1254	ug/L	--	0.05	0.093	U	0.093	U	0.092	U	0.092	U	0.093	U	0.093	U
Aroclor 1260	ug/L	--	0.05	0.055	U	0.055	U	0.055	U	0.055	U	0.055	U	0.055	U
Aroclor 1262	ug/L	--	0.05	0.084	U	0.084	U	0.083	U	0.083	U	0.084	U	0.084	U
Aroclor 1268	ug/L	--	0.05	0.11	U	0.11	U	0.11	U	0.11	U	0.11	U	0.11	U
Metals															
Aluminum	ug/L	--	--	65.7	BJ	275	J	101	BJ	228	J	41.2	BJ	149	BJ
Antimony	ug/L	--	--	2.9	U	2.9	U	2.9	U	2.9	U	2.9	U	2.9	U
Arsenic	ug/L	50	100	4.9	B	3.6	B	2.2	U	9.7	B	2.3	B	2.2	U
Barium	ug/L	--	--	15.9	B	6.6	B	13.4	B	29.3	B	89.4	B	45.8	B
Beryllium	ug/L	--	--	0.32	U	0.32	U	0.32	U	0.32	U	0.32	U	0.32	U
Cadmium	ug/L	50	100	0.23	U	0.23	U	0.23	U	0.23	U	0.23	U	0.26	B
Calcium	ug/L	--	--	23100		12900		28700		32500		48200		76400	
Chromium	ug/L	50	100	3.9	B	**2790**		10.7		27.9		4.6	B	**372**	
Cobalt	ug/L	--	--	0.78	B	0.7	U	0.7	U	0.7	U	0.7	U	0.94	B
Copper	ug/L	50	100	28.1		1.6	B	5.2	B	3.8	B	0.72	U	2.6	B
Iron	ug/L	--	--	123		231		709		537		758		69.8	B
Lead	ug/L	50	100	2.4	U	2.4	U	10.8		11.4		10.9		2.4	U
Magnesium	ug/L	--	--	7900		7920		7860		9710		26700		96100	
Manganese	ug/L	--	--	131		13	B	63		28.9		153		72.1	
Mercury	ug/L	--	1	0.055	U	0.055	U	0.055	U	0.055	U	0.055	U	0.055	U
Nickel	ug/L	50	100	2.1	B	1.1	U	1.1	U	2.2	B	1.1	U	1.8	B
Potassium	ug/L	--	--	2650	B	4910	B	1130	B	15000		13600		47000	
Selenium	ug/L	50	100	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Silver	ug/L	25	50	0.59	U	0.59	U	0.59	U	0.59	U	0.59	U	0.59	U
Sodium	ug/L	--	--	12000	E	30300		6720		118000		211000		956000	
Thallium	ug/L	--	--	3.1	U	5.6	B	3.1	U	3.1	U	3.1	U	3.1	U
Vanadium	ug/L	--	--	12	B	109		6.5	B	15.3	B	1	U	24.3	B
Zinc	ug/L	100	200	7.7	BJ	11.8	BJ	11.6	BJ	16.3	BJ	10.9	B	25.8	J

Notes:

1. Criteria are as specified in the NJDEP Statewide Final NJPDES General Remediation Clean-up Permit (GRC) dated April 21, 2005. NJPDES Permit No. NJ0155438 Part III.

Potential exceedances of discharge limits are highlighted. Results which exceed both the monthly average and daily maximum are shown in bold, shaded typeface. Results which exceed the monthly average but not the daily maximum are shown in shaded typeface. Results which exceed the daily maximum but not the monthly average (i.e., when a daily maximum limit does not exist) are shown in bold typeface.

Data qualifiers are as follows:

B - Inorganic results. Result is an estimate. Quantitation between the detection limit and the reporting limit.
J - Organic results. Result is an estimate. Quantitated between the detection limit and the reporting limit.
J - Inorganic results. Result is an estimated concentration. Quantitated below the reporting limit.
U - Not detected at the detection limit indicated.
-- - Not analyzed or criteria unavailable.

TABLE 4-9

ANALYTICAL RESULTS
SEPTIC TANK SOILS
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion [1]	ST-1-E 11/22/2011		ST-1-N 11/22/2011		ST-1-S 11/22/2011		ST-1A-E 12/6/2011		ST-1A-N 12/6/2011		ST-1A-W 12/6/2011		ST-1B-E 11/22/2011		ST-1B-N 11/22/2011		ST-1B-S 11/22/2011		ST-1B-W 11/22/2011		ST-2-E 12/8/2011		ST-2-N 12/7/2011		ST-2-S 12/7/2011		ST-3-E 12/7/2011		ST-3-E DUP 12/7/2011	
Volatile Organics																																
1,1,1-Trichloroethane	mg/Kg	4200	0.00023	U	0.00021	U	0.023	U	0.00017	U	0.00021	U	0.00017	U	1	U	0.00019	U	0.0002	U	0.023	U	0.039	U	0.31	U	0.24	U	0.023	U	0.023	U
1,1,2,2-Tetrachloroethane	mg/Kg	3	0.00094	U	0.00086	U	0.0079	U	0.00067	U	0.00086	U	0.0007	U	0.35	U	0.00075	U	0.00081	U	0.0079	U	0.014	U	0.11	U	0.084	U	0.0081	U	0.008	U
1,1,2-Trichloroethane	mg/Kg	6	0.00074	U	0.00067	U	0.0089	U	0.00053	U	0.00067	U	0.00055	U	0.4	U	0.00059	U	0.00063	U	0.0089	U	0.015	U	0.12	U	0.095	U	0.0092	U	0.009	U
1,1-Dichloroethane	mg/Kg	24	0.00031	U	0.00029	U	0.0092	U	0.00022	U	0.00028	U	0.00023	U	0.41	U	0.00025	U	0.00027	U	0.0092	U	0.016	U	0.12	U	0.097	U	0.0094	U	0.0092	U
1,1-Dichloroethene	mg/Kg	150	0.00046	U	0.00042	U	0.013	U	0.00033	U	0.00042	U	0.00034	U	0.57	U	0.00037	U	0.00039	U	0.013	U	0.022	U	0.18	U	0.14	U	0.013	U	0.013	U
1,2-Dichloroethane	mg/Kg	3	0.00048	U	0.00044	U	0.023	U	0.00035	U	0.00044	U	0.00036	U	1	U	0.00039	U	0.00041	U	0.023	U	0.039	U	0.31	U	0.24	U	0.023	U	0.023	U
1,2-Dichloropropane	mg/Kg	5	0.00094	J	0.00036	U	0.008	U	0.00028	U	0.00036	U	0.00029	U	0.36	U	0.00031	U	0.00034	U	0.008	U	0.014	U	0.11	U	0.085	U	0.0082	U	0.0081	U
2-Butanone	mg/Kg	44000	0.00071	U	0.00065	U	0.075	U	0.0058	J	0.00064	U	0.00053	U	3.4	U	0.0095	J	0.0006	U	0.075	U	0.13	U	1	U	0.8	U	0.077	U	0.076	U
2-Hexanone	mg/Kg	--	0.0021	U	0.0019	U	0.05	U	0.0015	U	0.0019	U	0.0016	U	2.2	U	0.0017	U	0.0018	U	0.05	U	0.086	U	0.68	U	0.53	U	0.052	U	0.05	U
4-Methyl-2-pentanone	mg/Kg	--	0.00089	U	0.00081	U	0.062	U	0.00063	U	0.00081	U	0.00066	U	2.8	U	0.00071	U	0.00076	U	0.063	U	0.11	U	0.85	U	0.66	U	0.064	U	0.063	U
Acetone	mg/Kg	--	0.014		0.012		0.23	U	0.028		0.0042	U	0.0068	J	10	U	0.058		0.013		0.23	U	0.39	U	3.1	U	2.4	U	0.23	U	0.23	U
Benzene	mg/Kg	5	0.00092	U	0.0031		0.066	J	0.00071	J	0.00084	U	0.00069	U	0.48	U	0.00073	U	0.00079	U	0.024	J	0.15	J	0.15	U	0.12	U	0.05	J	0.058	J
Bromodichloromethane	mg/Kg	3	0.00038	U	0.00034	U	0.0082	U	0.00027	U	0.00034	U	0.00028	U	0.37	U	0.0003	U	0.00032	U	0.0082	U	0.014	U	0.11	U	0.087	U	0.0085	U	0.0083	U
Bromoform	mg/Kg	280	0.00087	U	0.0008	U	0.0091	U	0.00062	U	0.00079	U	0.00065	U	0.4	U	0.00069	U	0.00074	U	0.0091	U	0.016	U	0.12	U	0.096	U	0.0094	U	0.0092	U
Bromomethane	mg/Kg	59	0.00051	U	0.00046	U	0.029	U	0.00036	U	0.00046	U	0.00038	U	1.3	U	0.00041	U	0.00043	U	0.029	U	0.049	U	0.39	U	0.3	U	0.03	U	0.029	U
Carbon disulfide	mg/Kg	110000	0.00058	U	0.00063	J	0.013	U	0.00041	U	0.00053	U	0.00043	U	0.6	U	0.00046	U	0.00049	U	0.013	U	0.023	U	0.18	U	0.14	U	0.014	U	0.013	U
Carbon tetrachloride	mg/Kg	2	0.00013	U	0.00011	U	0.016	U	0.00009	U	0.00011	U	0.000094	U	0.74	U	0.0001	U	0.00011	U	0.017	U	0.028	U	0.22	U	0.17	U	0.017	U	0.017	U
Chlorobenzene	mg/Kg	7400	0.061		0.055		9.7		0.00043	U	0.0097		0.00045	U	220		0.018		0.0085		6.7		6.7		370		9.1		3.7		3.8	
Chloroethane	mg/Kg	1100	0.00049	U	0.00045	U	0.041	U	0.00035	U	0.00045	U	0.00037	U	1.8	U	0.0004	U	0.00042	U	0.041	U	0.07	U	0.56	U	0.43	U	0.042	U	0.041	U
Chloroform	mg/Kg	2	0.00029	U	0.00027	U	0.014	U	0.00021	U	0.00027	U	0.00022	U	0.63	U	0.00023	U	0.00025	U	0.014	U	0.024	U	0.19	U	0.15	U	0.015	U	0.014	U
Chloromethane	mg/Kg	12	0.00079	U	0.00072	U	0.019	U	0.00056	U	0.00072	U	0.00059	U	0.86	U	0.00063	U	0.00067	U	0.019	U	0.033	U	0.26	U	0.2	U	0.02	U	0.019	U
cis-1,2-Dichloroethene	mg/Kg	560	0.00029	U	0.00027	U	0.018	U	0.00021	U	0.00027	U	0.00022	U	0.79	U	0.00023	U	0.00025	U	0.018	U	0.03	U	0.24	U	0.19	U	0.018	U	0.018	U
cis-1,3-Dichloropropene	mg/Kg	7	0.00025	U	0.00023	U	0.0094	U	0.00018	U	0.00023	U	0.00019	U	0.42	U	0.0002	U	0.00021	U	0.0094	U	0.016	U	0.13	U	0.099	U	0.0096	U	0.0094	U
Dibromochloromethane	mg/Kg	8	0.00069	U	0.00064	U	0.0092	U	0.0005	U	0.00063	U	0.00052	U	0.41	U	0.00055	U	0.00059	U	0.0092	U	0.016	U	0.13	U	0.098	U	0.0095	U	0.0093	U
Ethylbenzene	mg/Kg	110000	0.00048	J	0.00022	U	0.023	U	0.00017	U	0.00022	U	0.00018	U	1	U	0.00019	U	0.0002	U	0.023	U	0.11	J	2.4		0.42	J	0.023	U	0.023	U
Methylene Chloride	mg/Kg	97	0.0023		0.00053	U	0.018	U	0.00042	U	0.00053	U	0.00044	U	0.79	U	0.0018		0.0027		0.018	U	0.03	U	0.24	U	0.19	U	0.018	U	0.018	U
Styrene	mg/Kg	260	0.00043	U	0.00039	U	0.013	U	0.00031	U	0.00039	U	0.00032	U	0.57	U	0.00034	U	0.00037	U	0.013	U	0.022	U	0.17	U	0.13	U	0.013	U	0.013	U
Tetrachloroethene	mg/Kg	5	0.00041	U	0.00037	U	0.018	U	0.00029	U	0.00037	U	0.00031	U	**7.9**		0.00033	U	0.00035	U	0.018	U	0.17		0.24	U	0.19	U	0.018	U	0.018	U
Toluene	mg/Kg	91000	0.00037	U	0.00034	U	0.0087	U	0.00027	U	0.00034	U	0.00028	U	0.39	U	0.0003	U	0.00032	U	0.0087	U	0.052	J	0.12	U	0.092	U	0.0089	U	0.0088	U
trans-1,2-Dichloroethene	mg/Kg	720	0.00035	U	0.00032	U	0.013	U	0.00025	U	0.00032	U	0.00026	U	0.56	U	0.00028	U	0.0003	U	0.013	U	0.022	U	0.17	U	0.13	U	0.013	U	0.013	U
trans-1,3-Dichloropropene	mg/Kg	7	0.00027	U	0.00025	U	0.011	U	0.0002	U	0.00025	U	0.0002	U	0.5	U	0.00022	U	0.00023	U	0.011	U	0.019	U	0.15	U	0.12	U	0.012	U	0.011	U
Trichloroethene	mg/Kg	20	0.00045	U	0.00041	U	0.016	U	0.00032	U	0.00041	U	0.00034	U	0.73	U	0.00036	U	0.00039	U	0.016	U	0.028	U	0.22	U	0.17	U	0.017	U	0.016	U
Vinyl chloride	mg/Kg	2	0.00029	U	0.00027	U	0.011	U	0.00021	U	0.00026	U	0.00022	U	0.49	U	0.00023	U	0.00025	U	0.011	U	0.019	U	0.15	U	0.12	U	0.011	U	0.011	U
Xylenes, Total	mg/Kg	170000	0.00097	U	0.00089	U	0.04	U	0.0007	U	0.00089	U	0.00073	U	1.8	U	0.00078	U	0.00083	U	0.04	U	0.64		3.4	J	1	J	0.041	U	0.04	U
Metals																																
Chromium[2]	mg/Kg	120000	110		430		250		25		290		420		6100		110		320		28		630		30		110		90		54	
Chromium, hexavalent	mg/Kg	20	1.8	U	3.7		1.6	U	1.7	U	2.8		1.7	U	4		1.6	U	8		1.7	U	5.8		1.8	U	1.8	U	1.7	U	0.17	U

TABLE 4-9

ANALYTICAL RESULTS
SEPTIC TANK SOILS
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	ST-3-N 12/6/2011		ST-3-S 12/7/2011		ST-3-W 12/7/2011		ST-4-E 12/7/2011		ST-4-N 12/7/2011		ST-4-S 12/7/2011		ST-4-W 12/7/2011		ST-5-E 12/7/2011		ST-5-S 12/7/2011		ST-5-W 12/8/2011		ST-6-E 12/7/2011		ST-6-N 12/7/2011		ST-6-S 12/7/2011		ST-6-W 12/7/2011		ST-7-E 12/8/2011		ST-7-N 12/8/2011		ST-7-N-DUP 12/8/2011	
Volatile Organics																																		
1,1,1-Trichloroethane	0.0002	U	0.028	U	0.026	U	0.0002	U	0.0003	U	0.027	U	0.72	U	0.00033	U	0.00051	U	0.027	U	0.00038	U	0.00037	U	0.00029	U	0.00039	U	0.037	U	0.26	U	0.22	U
1,1,2,2-Tetrachloroethane	0.00082	U	0.0096	U	0.0092	U	0.00083	U	0.0012	U	0.0095	U	0.25	U	0.0014	U	0.0021	U	0.0095	U	0.0015	U	0.0015	U	0.0012	U	0.0016	U	0.013	U	0.091	U	0.078	U
1,1,2-Trichloroethane	0.00064	U	0.011	U	0.01	U	0.00065	U	0.00094	U	0.011	U	0.28	U	0.0011	U	0.0016	U	0.011	U	0.0012	U	0.0012	U	0.00091	U	0.0012	U	0.015	U	0.1	U	0.088	U
1,1-Dichloroethane	0.00027	U	0.011	U	0.011	U	0.00027	U	0.0004	U	0.011	U	0.29	U	0.00045	U	0.00068	U	0.011	U	0.00051	U	0.00049	U	0.00039	U	0.00052	U	0.015	U	0.11	U	0.09	U
1,1-Dichloroethene	0.0004	U	0.016	U	0.015	U	0.0004	U	0.00058	U	0.015	U	0.41	U	0.00066	U	0.001	U	0.016	U	0.00075	U	0.00072	U	0.00057	U	0.00077	U	0.021	U	0.15	U	0.13	U
1,2-Dichloroethane	0.00042	U	0.027	U	0.026	U	0.00043	U	0.00062	U	0.027	U	0.72	U	0.00069	U	0.0011	U	0.027	U	0.00079	U	0.00076	U	0.0006	U	0.00081	U	0.037	U	0.26	U	0.22	U
1,2-Dichloropropane	0.00034	U	0.0097	U	0.0093	U	0.00035	U	0.0005	U	0.0096	U	0.25	U	0.00057	U	0.00086	U	0.0097	U	0.00064	U	0.00062	U	0.00049	U	0.00066	U	0.013	U	0.093	U	0.079	U
2-Butanone	0.0086	J	0.091	U	0.087	U	0.00062	U	0.0009	U	0.09	U	2.4	U	0.0052	J	0.0087	J	0.091	U	0.0012	U	0.0029	J	0.0035	J	0.0012	U	0.12	U	0.87	U	0.74	U
2-Hexanone	0.0018	U	0.061	U	0.058	U	0.0018	U	0.0026	U	0.06	U	1.6	U	0.003	U	0.0045	U	0.06	U	0.0034	U	0.0033	U	0.0026	U	0.0035	U	0.082	U	0.58	U	0.49	U
4-Methyl-2-pentanone	0.00077	U	0.076	U	0.073	U	0.00078	U	0.0011	U	0.075	U	2	U	0.0013	U	0.0019	U	0.075	U	0.0014	U	0.0014	U	0.0011	U	0.0015	U	0.1	U	0.72	U	0.62	U
Acetone	0.049		0.28	U	0.26	U	0.0066	J	0.016		0.27	U	7.2	U	0.035		0.058		0.27	U	0.041		0.025		0.033		0.012	J	0.37	U	2.6	U	2.2	U
Benzene	0.0011		0.13		0.063	J	0.00081	U	0.0024		0.25		**6.2**		0.094		0.23		0.96		0.023		0.016		0.0011	U	0.0015	U	0.94		**54**		**63**	
Bromodichloromethane	0.00033	U	0.01	U	0.0095	U	0.00033	U	0.00048	U	0.0099	U	0.26	U	0.00054	U	0.00082	U	0.0099	U	0.00061	U	0.00059	U	0.00047	U	0.00063	U	0.013	U	0.095	U	0.081	U
Bromoform	0.00075	U	0.011	U	0.011	U	0.00076	U	0.0011	U	0.011	U	0.29	U	0.0012	U	0.0019	U	0.011	U	0.0014	U	0.0014	U	0.0011	U	0.0015	U	0.015	U	0.11	U	0.089	U
Bromomethane	0.00044	U	0.035	U	0.033	U	0.00045	U	0.00065	U	0.035	U	0.91	U	0.00073	U	0.0011	U	0.035	U	0.00083	U	0.0008	U	0.00063	U	0.00085	U	0.047	U	0.33	U	0.28	U
Carbon disulfide	0.0005	U	0.016	U	0.016	U	0.00051	U	0.00073	U	0.016	U	0.42	U	0.00083	U	0.0059		0.016	U	0.00094	U	0.00091	U	0.00072	U	0.00096	U	0.022	U	0.15	U	0.13	U
Carbon tetrachloride	0.00011	U	0.02	U	0.019	U	0.00011	U	0.00016	U	0.02	U	0.52	U	0.00018	U	0.00027	U	0.02	U	0.0002	U	0.0002	U	0.00016	U	0.00021	U	0.027	U	0.19	U	0.16	U
Chlorobenzene	0.0012		16		1.3		0.0039		0.025		5.5		630		0.13		0.41		15		0.08		0.039		0.00074	U	0.001	U	16		270		310	
Chloroethane	0.00043	U	0.05	U	0.047	U	0.00044	U	0.00063	U	0.049	U	1.3	U	0.00071	U	0.0011	U	0.049	U	0.00081	U	0.00078	U	0.00061	U	0.00083	U	0.067	U	0.47	U	0.4	U
Chloroform	0.00026	U	0.017	U	0.016	U	0.00026	U	0.00037	U	0.017	U	0.45	U	0.00042	U	0.00064	U	0.017	U	0.00048	U	0.00046	U	0.00037	U	0.00049	U	0.023	U	0.16	U	0.14	U
Chloromethane	0.00068	U	0.023	U	0.022	U	0.00069	U	0.001	U	0.023	U	0.61	U	0.0011	U	0.0017	U	0.023	U	0.0013	U	0.0012	U	0.00098	U	0.0013	U	0.031	U	0.22	U	0.19	U
cis-1,2-Dichloroethene	0.00025	U	0.022	U	0.021	U	0.00026	U	0.00037	U	0.021	U	0.56	U	0.00042	U	0.00064	U	0.021	U	0.00048	U	0.00046	U	0.00036	U	0.00049	U	0.029	U	0.21	U	0.17	U
cis-1,3-Dichloropropene	0.00022	U	0.011	U	0.011	U	0.00022	U	0.00032	U	0.011	U	0.3	U	0.00036	U	0.00054	U	0.011	U	0.00041	U	0.00039	U	0.00031	U	0.00042	U	0.015	U	0.11	U	0.092	U
Dibromochloromethane	0.0006	U	0.011	U	0.011	U	0.00061	U	0.00088	U	0.011	U	0.29	U	0.001	U	0.0015	U	0.011	U	0.0011	U	0.0011	U	0.00086	U	0.0012	U	0.015	U	0.11	U	0.091	U
Ethylbenzene	0.00021	U	0.027	U	0.026	U	0.00021	U	0.0003	U	0.027	U	0.72	U	0.00088	J	0.004		0.027	U	0.00054	J	0.00037	U	0.00029	U	0.0004	U	0.098	J	9.4		9.7	
Methylene Chloride	0.00051	U	0.021	U	0.02	U	0.00051	U	0.00074	U	0.021	U	0.56	U	0.00084	U	0.0013	U	0.021	U	0.00095	U	0.00092	U	0.00073	U	0.00098	U	0.029	U	0.2	U	0.17	U
Styrene	0.00037	U	0.015	U	0.015	U	0.00038	U	0.00055	U	0.015	U	0.4	U	0.00061	U	0.00093	U	0.015	U	0.0007	U	0.00068	U	0.00053	U	0.00072	U	0.021	U	4		3.6	
Tetrachloroethene	0.00036	U	0.022	U	0.021	U	0.00036	U	0.00052	U	0.022	U	0.57	U	0.00059	U	0.00089	U	0.022	U	0.00067	U	0.00064	U	0.00051	U	0.00068	U	0.029	U	4.1		3.9	
Toluene	0.00032	U	0.011	U	0.024	J	0.00033	U	0.00047	U	0.01	U	0.27	U	0.0041		0.01		0.053	J	0.0026		0.0013	J	0.00046	U	0.00062	U	0.067	J	15		14	
trans-1,2-Dichloroethene	0.0003	U	0.015	U	0.015	U	0.00031	U	0.00045	U	0.015	U	0.4	U	0.0005	U	0.00076	U	0.015	U	0.00057	U	0.00055	U	0.00044	U	0.00059	U	0.021	U	0.15	U	0.12	U
trans-1,3-Dichloropropene	0.00024	U	0.014	U	0.013	U	0.00024	U	0.00035	U	0.013	U	0.35	U	0.00039	U	0.0006	U	0.014	U	0.00045	U	0.00043	U	0.00034	U	0.00046	U	0.018	U	0.13	U	0.11	U
Trichloroethene	0.00039	U	0.02	U	0.019	U	0.0004	U	0.00057	U	0.02	U	0.52	U	0.00065	U	0.00098	U	0.02	U	0.00073	U	0.00071	U	0.00056	U	0.00075	U	0.027	U	0.19	U	0.16	U
Vinyl chloride	0.00025	U	0.013	U	0.013	U	0.00026	U	0.00037	U	0.013	U	0.35	U	0.00042	U	0.00063	U	0.013	U	0.00047	U	0.00046	U	0.00036	U	0.00049	U	0.018	U	0.13	U	0.11	U
Xylenes, Total	0.00085	U	0.048	U	0.046	U	0.00086	U	0.0012	U	0.048	U	1.3	U	0.0039	J	0.016		0.048	U	0.0024	J	0.0015	U	0.0012	U	0.0016	U	0.5		110		100	
Metals																																		
Chromium[(2)]	40		2000		730		15		14		16		58		26000		33000		1700		35000		37000		790		20000		1900		13000		16000	
Chromium, hexavalent	1.8	U	5.1		9.6		1.8	U	2	U	1.8	U	2	U	**6800**		**5600**		**27**		**5500**		**8500**		14		**3800**		1.9	U	2.8	U	4	

TABLE 4-9

ANALYTICAL RESULTS
SEPTIC TANK SOILS
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	ST-7-S 12/8/2011		ST-7-W 12/8/2011		ST-8-E 12/8/2011		ST-8-N 12/8/2011		ST-8-S 12/8/2011		ST-8-W 12/8/2011	
Volatile Organics												
1,1,1-Trichloroethane	0.055	U	0.054	U	0.00037	U	0.00025	U	0.00033	U	0.03	U
1,1,2,2-Tetrachloroethane	0.019	U	0.019	U	0.0015	U	0.001	U	0.0013	U	0.01	U
1,1,2-Trichloroethane	0.022	U	0.021	U	0.0012	U	0.0008	U	0.0011	U	0.012	U
1,1-Dichloroethane	0.022	U	0.022	U	0.00049	U	0.00034	U	0.00045	U	0.012	U
1,1-Dichloroethene	0.031	U	0.031	U	0.00072	U	0.0005	U	0.00065	U	0.017	U
1,2-Dichloroethane	0.055	U	0.054	U	0.00076	U	0.00053	U	0.00069	U	0.029	U
1,2-Dichloropropane	0.019	U	0.019	U	0.00062	U	0.00043	U	0.00056	U	0.01	U
2-Butanone	0.18	U	0.18	U	0.0011	U	0.00077	U	0.001	U	0.098	U
2-Hexanone	0.12	U	0.12	U	0.0033	U	0.0023	U	0.003	U	0.065	U
4-Methyl-2-pentanone	0.15	U	0.15	U	0.0014	U	0.00097	U	0.0013	U	0.082	U
Acetone	0.55	U	0.55	U	0.011	J	0.005	U	0.0066	U	0.3	U
Benzene	0.14	J	**12**		0.0014	U	0.0026		0.0043		0.014	U
Bromodichloromethane	0.02	U	0.02	U	0.0006	U	0.00041	U	0.00054	U	0.011	U
Bromoform	0.022	U	0.022	U	0.0014	U	0.00095	U	0.0012	U	0.012	U
Bromomethane	0.07	U	0.069	U	0.0008	U	0.00055	U	0.00072	U	0.038	U
Carbon disulfide	0.032	U	0.032	U	0.00091	U	0.00063	U	0.004		0.017	U
Carbon tetrachloride	0.04	U	0.04	U	0.0002	U	0.00014	U	0.00018	U	0.022	U
Chlorobenzene	1.5		3.3		0.0072		0.043		0.011		0.15	
Chloroethane	0.099	U	0.098	U	0.00078	U	0.00054	U	0.00071	U	0.053	U
Chloroform	0.034	U	0.034	U	0.00046	U	0.00032	U	0.00042	U	0.019	U
Chloromethane	0.047	U	0.046	U	0.0012	U	0.00086	U	0.0011	U	0.025	U
cis-1,2-Dichloroethene	0.043	U	0.043	U	0.00046	U	0.00058	J	0.0021		0.023	U
cis-1,3-Dichloropropene	0.023	U	0.022	U	0.00039	U	0.00027	U	0.00036	U	0.012	U
Dibromochloromethane	0.022	U	0.022	U	0.0011	U	0.00076	U	0.00099	U	0.012	U
Ethylbenzene	0.055	U	0.13	J	0.00037	U	0.00073	J	0.0019		0.03	U
Methylene Chloride	0.043	U	0.042	U	0.0015	J	0.00064	U	0.00083	U	0.023	U
Styrene	0.031	U	0.031	U	0.00068	U	0.00047	U	0.00061	U	0.017	U
Tetrachloroethene	0.043	U	0.043	U	0.00065	U	0.00045	U	0.00058	U	0.023	U
Toluene	0.039	J	0.58		0.00059	U	0.00045	J	0.003		0.011	U
trans-1,2-Dichloroethene	0.031	U	0.03	U	0.00055	U	0.00038	U	0.00056	J	0.017	U
trans-1,3-Dichloropropene	0.027	U	0.027	U	0.00043	U	0.0003	U	0.00039	U	0.015	U
Trichloroethene	0.039	U	0.039	U	0.00071	U	0.00049	U	0.00064	U	0.021	U
Vinyl chloride	0.027	U	0.026	U	0.00046	U	0.00032	U	0.00096	J	0.014	U
Xylenes, Total	0.49	J	1.1		0.0015	U	0.0019	J	0.0062		0.052	U
Metals												
Chromium[(2)]	290		30000		26000		4900		1700		11	
Chromium, hexavalent	13		**11000**		**6900**		**170**		1.9	U	2.2	J

Notes:
1. Criteria are the NJDEP Non-Residential Direct Contact Soil Remediation Standards (online at www.nj.gov/dep/srp/regs/rs/rs_appendix1.pdf) unless noted otherwise.
2. Nonpromulgated criteria for total (trivalent) and hexavalent chromium determined by chromium workgroup (www.state.nj.us/dep/srp/guidance).
   Criterion for residential exposure to trivalent chromium was used for total chromium.

TABLE 4-10

ANALYTICAL RESULTS
GROUNDWATER SAMPLES - FILL UNIT
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	SC-MW-11U 04/24/08 Primary		SC-MW-12U 04/23/08 Primary		SC-MW-12U 04/23/08 Duplicate		SC-MW-14U 04/24/08 Primary		SC-MW-15U 04/23/08 Primary		SC-PZ-1U 04/23/08 Primary		SC-PZ-2U 04/23/08 Primary		SC-PZ-3U 04/23/08 Primary		SC-PZ-4U 04/25/08 Primary		SC-PZ-5U 04/24/08 Primary	
Volatile Organics																						
1,1,1-Trichloroethane	ug/L	30	32	U	0.79	U	0.79	U	40	U	0.79	U	0.79	U	0.79	U	0.79	U	0.79	U	0.79	U
1,1,2,2-Tetrachloroethane	ug/L	1	25	U	0.63	U	0.63	U	31	U	0.63	U	0.63	U	0.63	U	0.63	U	0.63	U	0.63	U
1,1,2-Trichloroethane	ug/L	3	32	U	0.79	U	0.79	U	40	U	0.79	U	0.79	U	0.79	U	0.79	U	0.79	U	0.79	U
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	--	49	U	1.2	U	1.2	U	62	U	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U
1,1-Dichloroethane	ug/L	50	41	U	1	U	1	U	51	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene	ug/L	1	35	U	0.87	U	0.87	U	44	U	0.87	U	0.87	U	0.87	U	0.87	U	0.87	U	0.87	U
1,2,4-Trichlorobenzene	ug/L	9	**5000**		0.42	U	1.2	J	**230**	J	0.42	U	0.42	U	0.89	J	0.42	U	4.1	J	**11**	
1,2-Dibromoethane	ug/L	0.03	26	U	0.64	U	0.64	U	32	U	0.64	U	0.64	U	0.64	U	0.64	U	0.64	U	0.64	U
1,2-Dichlorobenzene	ug/L	600	**5200**		4	J	11		**7200**		0.84	J	0.65	U	10		4.5	J	4.2	J	3.4	J
1,2-Dichloroethane	ug/L	2	26	U	0.64	U	0.64	U	32	U	0.64	U	0.64	U	0.64	U	0.64	U	0.64	U	0.64	U
1,2-Dichloropropane	ug/L	1	27	U	0.67	U	0.67	U	33	U	0.67	U	0.67	U	0.67	U	0.67	U	0.67	U	0.67	U
1,3-Dichlorobenzene	ug/L	600	**1100**		10		18		**5600**		2.6	J	0.66	U	3.4	J	0.66	U	2.6	J	0.66	U
1,4-Dichlorobenzene	ug/L	75	**1800**		35		55		**9000**		4.4	J	0.6	U	3.2	J	1	J	4.4	J	3.5	J
2-Butanone	ug/L	300	29	U	0.73	U	0.73	U	37	U	0.73	U	0.73	U	0.73	U	0.73	U	0.73	U	15	
2-Hexanone[2]	ug/L	300	18	U	0.45	U	0.45	U	22	U	0.45	U	0.45	U	0.45	U	0.45	U	0.45	U	0.45	U
4-Methyl-2-pentanone	ug/L	--	19	U	0.46	U	0.46	U	23	U	0.46	U	0.46	U	0.46	U	0.46	U	0.46	U	0.46	U
Acetone	ug/L	6,000	200	U	5	U	5	U	250	U	5	U	5	U	17	J	5	U	5	U	63	
Benzene	ug/L	1	**36**	J	0.81	U	0.91	J	41	U	**85**		0.81	U	**1.5**	J	**10**		0.81	U	**15**	
Bromodichloromethane	ug/L	1	23	U	0.58	U	0.58	U	29	U	0.58	U	0.58	U	0.58	U	0.58	U	0.58	U	0.58	U
Bromoform	ug/L	4	15	U	0.37	U	0.37	U	18	U	0.37	U	0.37	U	0.37	U	0.37	U	0.37	U	0.37	U
Bromomethane	ug/L	10	30	U	0.75	U	0.75	U	37	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U
Carbon disulfide	ug/L	700	43	U	1.1	U	1.1	U	54	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
Carbon tetrachloride	ug/L	1	37	U	0.91	U	0.91	U	46	U	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U
Chlorobenzene	ug/L	50	**450**		37		**53**		**490**		**320**		0.71	U	10		2.4	J	17		25	
Chloroethane[2]	ug/L	5	44	U	1.1	U	1.1	U	55	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
Chloroform	ug/L	70	31	U	0.78	U	0.78	U	39	U	0.78	U	0.78	U	0.78	U	0.78	U	0.78	U	0.78	U
Chloromethane	ug/L	--	35	U	0.87	U	0.87	U	44	U	0.87	U	0.87	U	0.87	U	0.87	U	0.87	U	0.87	U
cis-1,2-Dichloroethene	ug/L	70	46	J	1	U	1	U	50	U	1	U	1	U	1	U	2.4	J	1	U	1	U
cis-1,3-Dichloropropene	ug/L	1	32	U	0.79	U	0.79	U	40	U	0.79	U	0.79	U	0.79	U	0.79	U	0.79	U	0.79	U
Cyclohexane	ug/L	--	43	U	1.1	U	1.1	U	54	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
Dibromochloropropane	ug/L	0.02	50	U	1.3	U	1.3	U	63	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U
Dibromochloromethane	ug/L	1	20	U	0.5	U	0.5	U	25	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dichlorodifluoromethane	ug/L	1000	42	U	1	U	1	U	200	J	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	ug/L	700	23	U	0.58	U	1.1	J	29	U	0.58	U	0.58	U	0.58	U	10		0.58	U	0.58	U
Isopropylbenzene	ug/L	700	29	U	0.72	U	0.72	U	36	U	0.72	U	0.72	U	0.72	U	3.1	J	0.72	U	0.72	U
Methyl Acetate	ug/L	7000	19	U	0.47	U	0.47	U	23	U	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U
Methylcyclohexane	ug/L	--	44	U	1.1	U	1.1	U	55	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
Methylene chloride	ug/L	3	30	U	0.75	U	0.75	U	**46**	J	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U
Methyltert-butylether	ug/L	70	31	U	0.77	U	0.77	U	38	U	0.77	U	0.77	U	0.77	U	0.77	U	0.77	U	0.77	U
Styrene	ug/L	100	32	U	0.8	U	0.8	U	40	U	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
Tetrachloroethylene	ug/L	1	**42**	J	0.57	U	0.57	U	28	U	0.57	U	0.57	U	0.57	U	0.57	U	0.67	J	0.57	U
Toluene	ug/L	600	32	U	0.8	U	0.94	J	40	U	0.8	U	0.8	U	0.8	U	2.9	JB	0.8	U	1.6	J
trans-1,2-Dichloroethene	ug/L	100	36	U	0.9	U	0.9	U	45	U	0.9	U	0.9	U	0.9	U	0.9	U	0.9	U	0.9	U
trans-1,3-Dichloropropene	ug/L	1	23	U	0.57	U	0.57	U	28	U	0.57	U	0.57	U	0.57	U	0.57	U	0.57	U	0.57	U
Trichloroethylene	ug/L	1	35	U	0.88	U	0.88	U	44	U	0.88	U	0.88	U	0.88	U	0.88	U	0.88	U	0.88	U
Trichlorofluoromethane	ug/L	2000	32	U	0.8	U	0.8	U	40	U	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
Vinyl chloride	ug/L	1	38	U	0.94	U	0.94	U	47	U	0.94	U	0.94	U	0.94	U	0.94	U	0.94	U	0.94	U
Xylene (total)	ug/L	1000	98	U	2.4	U	2.9	J	120	U	2.4	U	2.4	U	2.4	U	39		2.4	U	2.4	U

TABLE 4-10

ANALYTICAL RESULTS
GROUNDWATER SAMPLES - FILL UNIT
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	SC-MW-11U 04/24/08 Primary		SC-MW-12U 04/23/08 Primary		SC-MW-12U 04/23/08 Duplicate		SC-MW-14U 04/24/08 Primary		SC-MW-15U 04/23/08 Primary		SC-PZ-1U 04/23/08 Primary		SC-PZ-2U 04/23/08 Primary		SC-PZ-3U 04/23/08 Primary		SC-PZ-4U 04/25/08 Primary		SC-PZ-5U 04/24/08 Primary	
Semivolatile Organics																						
1,1'-Biphenyl	ug/L	400	33		1.2	J	5.6	J	3.2	J	0.63	U	0.75	U	0.64	U	28		0.69	U	0.73	U
1,2,4-Trichlorobenzene	ug/L	9	**NA**		**NA**		**NA**		**NA**		**NA**		**NA**		**NA**		3.1		**NA**		**NA**	
1,4-Dichlorobenzene	ug/L	75	**NA**		**NA**		**NA**		**NA**		**NA**		**NA**		**NA**		2.4		**NA**		**NA**	
2,2'-oxybis(1-chloropropane)	ug/L	--	0.29	U	0.3	U	0.28	U	0.29	U	0.27	U	0.32	U	0.27	U	0.28	U	0.3	U	0.32	U
2,4,5-Trichlorophenol	ug/L	700	37		0.71	U	0.68	U	0.69	U	0.66	U	0.78	U	0.66	U	0.68	U	0.72	U	0.76	U
2,4,6-Trichlorophenol	ug/L	20	11		0.65	U	0.62	U	0.63	U	0.6	U	0.71	U	0.6	U	0.62	U	0.65	U	0.69	U
2,4-Dichlorophenol	ug/L	20	**46**		1.4	J	1.1	J	0.54	U	0.51	U	0.61	U	0.51	U	0.53	U	0.56	U	0.59	U
2,4-Dimethylphenol	ug/L	100	99		12		29		7.8	J	6.9	J	0.65	U	3.3	J	12		9.8	J	13	
2,4-Dinitrophenol	ug/L	40	14	U	15	U	14	U	14	U	13	U	16	U	14	U	14	U	15	U	16	U
2,4-Dinitrotoluene	ug/L	10	0.5	U	0.51	U	0.49	U	0.5	U	0.47	U	0.56	U	0.48	U	0.49	U	0.52	U	0.55	U
2,6-Dinitrotoluene	ug/L	10	0.56	U	0.58	U	0.55	U	0.56	U	0.53	U	0.64	U	0.54	U	0.55	U	0.58	U	0.62	U
2-Chloronaphthalene	ug/L	600	0.49	U	0.5	U	0.48	U	0.49	U	0.46	U	0.55	U	0.47	U	0.48	U	0.51	U	0.54	U
2-Chlorophenol	ug/L	40	0.5	U	0.52	U	0.49	U	0.5	U	0.48	U	0.57	U	0.48	U	0.49	U	0.52	U	0.55	U
2-Methylnaphthalene[2]	ug/L	30	**260**		0.69	J	14		3.6	J	0.49	U	0.59	U	1.2	J	**590**		1.4	J	4.3	J
2-Methylphenol	ug/L	--	49		3.5	J	14		3.5	J	7.6	J	0.64	U	1.1	J	7.4	J	11	J	110	
2-Nitroaniline	ug/L	--	0.52	U	0.54	U	0.52	U	0.53	U	0.5	U	0.59	U	0.5	U	0.52	U	0.55	U	0.58	U
2-Nitrophenol	ug/L	--	0.59	U	0.62	U	0.59	U	0.6	U	0.57	U	0.68	U	0.57	U	0.59	U	0.62	U	3.4	J
3,3-Dichlorobenzidine	ug/L	30	0.45	U	0.47	U	0.45	U	0.45	U	0.43	U	0.51	U	0.43	U	0.45	U	0.47	U	0.5	U
3-Nitroaniline	ug/L	--	0.44	U	0.46	U	0.44	U	0.45	U	0.42	U	0.5	U	0.43	U	0.44	U	0.46	U	0.49	U
4,6-Dinitro-2-methylphenol[2]	ug/L	1	16	U	16	U	15	U	16	U	15	U	18	U	15	U	15	U	16	U	17	U
4-Bromophenylphenyl ether	ug/L	--	0.55	U	0.56	U	0.54	U	0.55	U	0.52	U	0.62	U	0.53	U	0.54	U	0.57	U	0.6	U
4-Chloroaniline	ug/L	30	0.51	U	0.53	U	0.5	U	0.51	U	0.49	U	0.58	U	0.49	U	0.5	U	0.53	U	0.56	U
4-Chlorophenyl phenyl ether	ug/L	--	0.47	U	0.49	U	0.46	U	0.47	U	0.45	U	0.53	U	0.45	U	0.46	U	0.49	U	0.52	U
4-Chloro-3-methylphenol[2]	ug/L	100	0.65	U	0.67	U	0.64	U	0.66	U	0.62	U	0.74	U	0.63	U	0.64	U	0.68	U	0.72	U
4-Methylphenol	ug/L	--	140		16		63		8.9	J	31		0.92	U	3.3	J	18		23		810	
4-Nitroaniline	ug/L	--	0.28	U	0.29	U	0.28	U	0.28	U	0.27	U	0.32	U	0.27	U	0.28	U	0.29	U	0.31	U
4-Nitrophenol	ug/L	--	0.77	U	0.8	U	0.76	U	0.78	U	0.74	U	0.88	U	0.74	U	0.76	U	0.81	U	0.86	U
Acenaphthene	ug/L	400	30		3.4	J	13		97		6.1	J	0.65	U	1.2	J	61		5.6	J	0.64	U
Acenaphthylene[2]	ug/L	100	0.51	U	0.59	J	0.5	U	1.6	J	0.49	U	0.58	U	0.49	U	0.5	U	0.85	J	0.56	U
Acetophenone	ug/L	700	2.4	J	0.53	U	0.58	J	0.51	U	0.49	U	0.58	U	0.49	U	0.5	U	0.53	U	1.6	J
Anthracene	ug/L	2000	20		0.66	J	1.2	J	1.3	J	0.53	U	0.63	U	0.54	U	1.4	J	1	J	0.62	U
Atrazine	ug/L	3	0.43	U	0.44	U	0.42	U	0.43	U	0.41	U	0.49	U	0.41	U	0.42	U	0.45	U	0.48	U
Benzaldehyde	ug/L	--	0.6	U	0.62	U	0.59	U	0.6	U	0.57	U	0.68	U	0.57	U	0.59	U	0.62	U	3.4	J
Benzo(a)anthracene	ug/L	0.1	**1.6**	J	0.47	U	0.45	U	0.46	U	0.43	U	0.51	U	0.44	U	0.45	U	**2.3**	J	0.5	U
Benzo(a)pyrene	ug/L	0.1	**0.72**	J	0.5	U	0.48	U	0.49	U	0.46	U	0.55	U	0.46	U	0.48	U	**2.2**	J	0.53	U
Benzo(b)fluoranthene	ug/L	0.2	**1.1**	J	0.36	U	0.34	U	0.35	U	0.33	U	0.39	U	0.33	U	0.34	U	**3.8**	J	0.38	U
Benzo(ghi)perylene[2]	ug/L	100	0.3	U	0.31	U	0.3	U	0.3	U	0.29	U	0.34	U	0.29	U	0.3	U	1.9	J	0.34	U
Benzo(k)fluoranthene	ug/L	0.5	**0.53**	J	0.45	U	0.43	U	0.44	U	0.41	U	0.49	U	0.42	U	0.43	U	0.45	U	0.48	U
Bis(2-chloroethoxy)methane	ug/L	--	1.3	U	1.4	U	1.3	U	1.4	U	1.3	U	1.5	U	1.3	U	1.3	U	1.4	U	1.5	U
Bis(2-chloroethyl)ether	ug/L	7	0.51	U	0.52	U	0.5	U	0.51	U	0.48	U	0.58	U	0.49	U	0.5	U	0.53	U	0.56	U
Bis(2-ethylhexyl)phthalate	ug/L	3	1.4	J	1.5	J	2.6	J	1.7	J	1.3	U	1.5	J	2.6	J	1.8	J	1.4	U	2.1	J
Butyl benzyl phthalate	ug/L	100	1.5	U	1.6	U	1.5	U	1.5	J	1.4	U	1.7	U	1.5	U	1.5	U	1.6	U	1.7	U
Caprolactam[2]	ug/L	5000	2.1	U	3.8	J	6.3	J	2.1	U	2	U	3.2	J	5	J	3.6	J	2.2	U	2.3	U
Carbazole	ug/L	--	5.7	J	0.6	U	2.6	J	2.1	J	0.55	U	0.65	U	0.55	U	2.4	J	0.6	U	0.64	U
Chrysene	ug/L	5	1.2	J	0.41	U	0.39	U	0.5	J	0.37	U	0.44	U	0.38	U	0.39	U	2.1	J	0.43	U
Dibenzo(a,h)anthracene	ug/L	0.3	0.38	U	0.4	U	0.38	U	0.39	U	0.37	U	0.44	U	0.37	U	0.38	U	0.4	U	0.43	U
Dibenzofuran	ug/L	--	51		3	J	11		46		0.56	U	0.67	U	0.57	U	20		0.61	U	0.65	U
Diethyl phthalate	ug/L	6000	2.7	U	2.8	U	2.7	U	2.7	U	2.6	U	3	U	2.6	U	2.7	U	2.8	U	3	U

TABLE 4-10

ANALYTICAL RESULTS
GROUNDWATER SAMPLES - FILL UNIT
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	SC-MW-11U 04/24/08 Primary		SC-MW-12U 04/23/08 Primary		SC-MW-12U 04/23/08 Duplicate		SC-MW-14U 04/24/08 Primary		SC-MW-15U 04/23/08 Primary		SC-PZ-1U 04/23/08 Primary		SC-PZ-2U 04/23/08 Primary		SC-PZ-3U 04/23/08 Primary		SC-PZ-4U 04/25/08 Primary		SC-PZ-5U 04/24/08 Primary	
Semivolatile Organics (Continued)																						
Dimethyl phthalate[2]	ug/L	100	0.46	U	0.48	U	0.46	U	0.47	U	0.44	U	0.53	U	0.45	U	0.46	U	0.49	U	0.52	U
Di-n-butyl phthalate	ug/L	700	0.51	U	0.53	U	0.51	U	0.51	U	0.49	U	0.58	U	0.49	U	0.51	U	0.53	U	0.57	U
Di-n-octyl phthalate	ug/L	100	0.47	U	0.49	U	0.46	U	0.47	U	0.45	U	0.53	U	0.45	U	0.46	U	0.49	U	0.52	U
Fluoranthene	ug/L	300	6.8	J	1.1	J	1.6	J	2	J	0.71	J	0.62	U	0.52	U	0.54	U	3.8	J	0.6	U
Fluorene	ug/L	300	31		2.1	J	6.9	J	23		3.9	J	0.68	U	0.57	U	10	J	0.62	U	0.66	U
Hexachlorobenzene	ug/L	0.02	0.48	U	0.5	U	0.47	U	0.48	U	0.46	U	0.54	U	0.46	U	0.47	U	0.5	U	0.53	U
Hexachlorobutadiene	ug/L	1	0.41	U	0.43	U	0.41	U	0.42	U	0.39	U	0.47	U	0.4	U	0.41	U	0.43	U	0.46	U
Hexachlorocyclopentadiene	ug/L	40	0.88	U	0.91	U	0.87	U	0.89	U	0.84	U	1	U	0.85	U	0.87	U	0.92	U	0.98	U
Hexachloroethane	ug/L	7	0.48	U	0.5	U	0.47	U	0.48	U	0.46	U	0.54	U	0.46	U	0.47	U	0.5	U	0.53	U
Indeno(1,2,3-cd)pyrene	ug/L	0.2	0.52	U	0.54	U	0.52	U	0.53	U	0.5	U	0.59	U	0.5	U	0.52	U	**1.7**	J	0.58	U
Isophorone	ug/L	40	0.52	U	0.54	U	0.52	U	0.53	U	0.5	U	0.59	U	0.5	U	0.52	U	0.54	U	0.58	U
Naphthalene	ug/L	300	**14000**		6.2	J	**310**		**740**		0.45	U	0.54	U	2.1	J	**5000**		21		50	
Nitrobenzene	ug/L	6	0.7	U	0.73	U	0.7	U	0.71	U	0.67	U	0.8	U	0.68	U	0.7	U	0.74	U	0.78	U
N-Nitrosodiphenylamine	ug/L	10	0.54	U	0.56	U	0.53	U	0.54	U	0.51	U	0.61	U	0.52	U	0.53	U	0.56	U	0.6	U
N-Nitrosodipropylamine	ug/L	10	0.65	U	0.68	U	0.65	U	0.66	U	0.62	U	0.74	U	0.63	U	0.65	U	0.68	U	0.73	U
Pentachlorophenol	ug/L	0.3	**10**	J	0.95	U	0.9	U	0.92	U	0.87	U	1	U	0.88	U	0.9	U	0.95	U	1	U
Phenanthrene[2]	ug/L	100	39		1	J	6.2	J	11		0.81	J	0.69	U	1.1	J	5.2	J	1.4	J	0.67	U
Phenol	ug/L	2000	49		5.1	J	36		5.1	J	39		0.28	U	6.9	J	5.8	J	29		870	
Pyrene	ug/L	200	3.6	J	0.77	J	1.2	J	1.2	J	0.59	U	0.71	U	0.6	U	0.62	U	2.9	J	0.69	U
Metals																						
Aluminum	ug/L	200	**1130**		40.3	B	27	B	191	B	55	B	**1160**		**1750**		136	B	**2910**	J	189	B
Antimony	ug/L	6	**34**		2.9	U	2.9	U	2.9	U	4.4	B	2.9	U	2.9	U	2.9	U	2.9	U	2.9	U
Arsenic	ug/L	3	**9.5**	B	2.2	U	2.2	U	2.2	U	2.2	U	3	B	2.2	U	**16**		2.2	U	2.2	U
Barium	ug/L	6000	524	J	19.2	BJ	17.1	B	28	B	352	J	280	J	149	BJ	50.7	BJ	12.3	B	1080	J
Beryllium	ug/L	1	0.32	U	0.32	U	0.32	U	0.32	U	0.32	U	0.32	U	0.32	U	0.32	U	0.32	U	0.32	U
Cadmium	ug/L	4	0.38	B	0.23	U	0.23	U	0.23	U	0.23	U	0.67	B	0.23	U	0.23	U	2	B	0.23	U
Calcium	ug/L	--	35200	J	45700	J	53000	J	85900	J	103000	J	63800	J	289000	J	10500	J	74500	J	546000	J
Chromium (Total)	ug/L	70	**396**		32.6		6.4		**427**		3.1	B	**119**		**4690**		**142**		**3650**		**2090**	
Chromium (Hexavalent)	ug/L	--	50	U	10	U	10	U	10	U	10	U	250	U	4070		10	U	453		1650	
Cobalt[2]	ug/L	100	3.3	B	0.74	B	0.7	U	1.8	B	0.7	U	2.8	B	0.7	U	0.7	U	6.6	B	2.5	B
Copper	ug/L	1300	58.5		2.5	B	1.4	B	2.9	B	1.3	B	25.8		1.2	B	1.9	B	12.6	B	19.1	B
Iron	ug/L	300	**4280**		**673**		275		**475**		**7950**		**46100**		33.4	B	**1720**		**6550**		**833**	
Lead	ug/L	5	**550**		2.4	U	2.4	U	**11.9**		**37.7**		3.2		2.4	U	2.4	U	**15.5**		**10**	
Magnesium	ug/L	--	97600	J	30300	J	18100	J	150000	J	19900	J	15500	J	73	BJ	11000	J	17400	J	2810	B
Manganese	ug/L	50	37.7		35		23.1		**119**		**514**		**701**		0.32	U	24.2		**71**		10.4	B
Mercury	ug/L	2	**17.5**		0.055	U	0.055	U	0.19	B	0.055	U	0.076	B	0.055	U	0.12	B	0.11	B	0.055	U
Nickel	ug/L	100	28	B	1.2	B	1.4	B	3.2	B	1.5	B	17.7	B	1.7	B	2.4	B	31.7	B	5.2	B
Potassium	ug/L	--	4880	B	2410	B	2100	B	6580		12900		3760	B	1140	B	14100		2210	B	944	B
Selenium	ug/L	40	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Silver	ug/L	40	0.72	B	0.59	U	0.59	U	0.96	B	0.59	U	0.59	U	0.64	B	0.59	U	0.89	B	0.59	U
Sodium	ug/L	50000	**78300**		36600		37600		**68700**		45300		**113000**		27000		**195000**		8780		**82100**	
Thallium	ug/L	2	3.1	U	**4.8**	BJ	3.1	U	3.1	U	3.1	U	**3.6**	BJ	3.1	U	3.1	U	3.1	U	3.1	U
Vanadium[3]	ug/L	60	48.6	B	4.8	BJ	1	U	11.2	B	1.3	BJ	48.7	BJ	1	U	9.9	BJ	**135**		1	U
Zinc	ug/L	2000	32.4		1.3	U	1.3	U	5	B	1.3	U	1940		107		108		**5350**		**2430**	

TABLE 4-10

ANALYTICAL RESULTS
GROUNDWATER SAMPLES - FILL UNIT
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	SC-MW-11U 04/24/08 Primary		SC-MW-12U 04/23/08 Primary		SC-MW-12U 04/23/08 Duplicate		SC-MW-14U 04/24/08 Primary		SC-MW-15U 04/23/08 Primary		SC-PZ-1U 04/23/08 Primary		SC-PZ-2U 04/23/08 Primary		SC-PZ-3U 04/23/08 Primary		SC-PZ-4U 04/25/08 Primary		SC-PZ-5U 04/24/08 Primary	
PCBs																						
Aroclor 1016	ug/L	0.5	**1.3**		0.11	U	0.11	U	0.1	U	0.11	U	0.12	U	0.11	U	0.11	U	0.1	U	0.1	U
Aroclor 1221	ug/L	0.5	0.1	U	0.11	U	0.11	U	0.1	U	0.11	U	0.12	U	0.11	U	0.11	U	0.1	U	0.1	U
Aroclor 1232	ug/L	0.5	0.12	U	0.13	U	0.13	U	0.12	U	0.13	U	0.14	U	0.13	U	0.13	U	0.12	U	0.12	U
Aroclor 1242	ug/L	0.5	0.077	U	0.085	U	0.083	U	0.077	U	0.08	U	0.091	U	0.082	U	0.081	U	0.077	U	0.077	U
Aroclor 1248	ug/L	0.5	0.094	U	0.1	U	0.1	U	0.095	U	0.098	U	0.11	U	0.1	U	0.099	U	0.095	U	0.094	U
Aroclor 1254	ug/L	0.5	0.094	U	0.1	U	0.1	U	0.095	U	0.099	U	0.11	U	0.1	U	0.1	U	0.095	U	0.094	U
Aroclor 1260	ug/L	0.5	0.056	U	0.062	U	0.061	U	0.056	U	0.059	U	0.066	U	0.06	U	0.059	U	0.056	U	0.056	U
Aroclor 1262	ug/L	0.5	0.085	U	0.094	U	0.092	U	0.086	U	0.089	U	0.1	U	0.091	U	0.09	U	0.086	U	0.085	U
Aroclor 1268	ug/L	0.5	0.11	U	0.12	U	0.12	U	0.11	U	0.12	U	0.13	U	0.12	U	0.12	U	0.11	U	0.11	U
Pesticides																						
4,4'-DDD	ug/L	0.1	0.008	U	0.0088	U	0.0086	U	0.008	U	0.0083	U	0.0094	U	0.0085	U	0.0084	U	0.008	U	0.0094	J
4,4'-DDE	ug/L	0.1	0.015	J	0.0077	U	0.0076	U	0.012	J	0.0073	U	0.0083	U	0.0074	U	0.0074	U	0.007	U	0.007	U
4,4'-DDT	ug/L	0.1	0.014	U	0.016	U	0.015	U	0.014	U	0.015	U	0.017	U	0.015	U	0.015	U	0.014	U	0.014	U
Aldrin	ug/L	0.04	0.011	U	0.013	U	0.038	J	0.012	U	0.012	U	0.014	U	0.012	U	0.012	U	0.012	U	0.011	U
alpha-BHC	ug/L	0.02	0.016	U	0.017	U	0.017	U	0.016	U	0.016	U	0.018	U	0.017	U	0.017	U	0.016	U	0.016	U
alpha-Chlordane	ug/L	0.5	0.012	U	0.013	U	0.013	U	0.012	U	0.012	U	0.014	U	0.012	U	0.012	U	0.012	U	0.012	U
beta-BHC	ug/L	0.04	0.015	U	0.017	U	0.016	U	0.015	U	0.016	U	0.018	U	0.016	U	0.016	U	0.015	U	0.015	U
delta-BHC	ug/L	--	0.0097	U	0.011	U	0.011	U	0.0098	U	0.01	U	0.012	U	0.01	U	0.01	U	0.0098	U	0.0097	U
Dieldrin	ug/L	0.03	0.0082	U	0.0091	U	0.009	U	0.0083	U	0.0086	U	0.0098	U	0.0088	U	0.0087	U	0.0083	U	0.0082	U
Endosulfan I	ug/L	40	0.019	J	0.0085	U	0.0083	U	0.0077	U	0.008	U	0.009	U	0.0082	U	0.0081	U	0.0077	U	0.0076	U
Endosulfan II	ug/L	40	0.016	U	0.017	U	0.017	U	0.016	U	0.016	U	0.018	U	0.017	U	0.016	U	0.016	U	0.016	U
Endosulfan sulfate	ug/L	40	0.016	U	0.018	U	0.018	U	0.017	U	0.017	U	0.019	U	0.018	U	0.017	U	0.017	U	0.016	U
Endrin	ug/L	2	0.015	J	0.0087	U	0.0085	U	0.0079	U	0.0082	U	0.0093	U	0.0084	U	0.0083	U	0.0079	U	0.0079	U
Endrin aldehyde	ug/L	--	0.012	U	0.014	U	0.013	U	0.013	U	0.013	U	0.015	U	0.013	U	0.013	U	0.013	U	0.012	U
Endrin ketone	ug/L	--	0.01	U	0.011	U	0.011	U	0.01	U	0.011	U	0.012	U	0.011	U	0.011	U	0.01	U	0.01	U
gamma-Chlordane	ug/L	0.5	0.074		0.0086	U	0.0085	U	0.0079	U	0.0082	U	0.0092	U	0.0083	U	0.0082	U	0.0079	U	0.0078	U
Heptachlor	ug/L	0.05	0.038	J	0.016	U	0.016	U	0.014	U	0.015	U	0.017	U	0.015	U	0.015	U	0.014	U	0.014	U
Heptachlor epoxide	ug/L	0.2	0.022	J	0.011	U	0.011	U	0.01	U	0.011	U	0.012	U	0.011	U	0.011	U	0.01	U	0.01	U
Lindane	ug/L	0.03	**0.46**		0.017	U	**0.047**	J	0.028	J	0.016	U	0.018	U	**0.078**		0.017	U	0.016	U	0.016	U
Methoxychlor	ug/L	40	0.019	U	0.021	U	0.02	U	0.019	U	0.02	U	0.022	U	0.02	U	0.02	U	0.019	U	0.019	U
Toxaphene	ug/L	2	0.42	U	0.47	U	0.46	U	0.43	U	0.44	U	0.5	U	0.45	U	0.45	U	0.43	U	0.42	U
Indicators																						
Biological Oxygen Demand (BOD)	mg/L	--	34.6		63.6		NA		19.3		16.4		7.8		5	U	21.4		5	U	21.7	
Carbon	mg/L	--	21.2	J	46.6	J	NA		31.4	J	6	J	0.48	BJ	3.9	J	9	J	2.1	J	17.5	J
Chemical Oxygen Demand (COD)	mg/L	--	86.5		156		NA		224		7.6	B	3.4	U	5.9	B	31.8		7.2	B	36.8	
Oil & Grease (HEM)	mg/L	--	0.54	U	0.51	U	NA		0.54	U	0.52	U	0.52	U	0.51	U	0.51	U	0.54	U	5.3	
Residue, filterable	mg/L	--	780		424		NA		944		413		527		684		525		91		1300	
Residue, non-filterable	mg/L	--	129		4	U	NA		9.2		19.6		163		4	U	6		58.8		64.8	
Total Alkalinity	mg/L	--	359	J	73	J	NA		595	J	437	J	447	J	742	J	365	J	86	J	1420	J

1. Specific Ground Water Quality Criteria - Class IIA - from Appendix Table 1 New Jersey Administrative Code 7:9C unless otherwise noted. Last amended July 7, 2008.
2. Interim Ground Water Quality Criteria as listed at www.nj.gov/dep/wms/bwqsa/gwqs_interim_criteria_table.htm.
3. Standard reported for vanadium is for vanadium pentoxide.

Data qualifiers are as follows:

B - Inorganic results. Result is an estimate. Quantitation between the detection limit and the reporting limit.
J - Organic results. Result is an estimate. Quantitated between the detection limit and the reporting limit.
J - Inorganic results. Result is an estimated concentration. Quantitated below the reporting limit.
U - Not detected at the detection limit indicated.
-- - Not analyzed or criteria unavailable.

TABLE 4-11

ANALYTICAL RESULTS
GROUNDWATER SAMPLES - SAND UNIT
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	SC-MW-12L 04/25/08 Primary		SC-MW-13L 04/25/08 Primary		SC-MW-14L 04/24/08 Primary		SC-MW-15L 04/24/08 Primary		SC-MW-2L 04/24/08 Primary		SC-MW-3L 04/24/08 Primary		SC-MW-4L 04/24/08 Primary		SC-MW-8L 04/24/08 Primary	
Volatile Organics																		
1,1,1-Trichloroethane	ug/L	30	79	U	20	U	20	U	200	U	79	U	200	U	79	U	79	U
1,1,2,2-Tetrachloroethane	ug/L	1	63	U	16	U	16	U	160	U	63	U	160	U	63	U	63	U
1,1,2-Trichloroethane	ug/L	3	79	U	20	U	20	U	200	U	79	U	200	U	79	U	79	U
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	--	120	U	31	U	31	U	310	U	120	U	310	U	120	U	120	U
1,1-Dichloroethane	ug/L	50	100	U	25	U	25	U	250	U	100	U	250	U	100	U	100	U
1,1-Dichloroethene	ug/L	1	87	U	22	U	22	U	220	U	87	U	220	U	87	U	87	U
1,2,4-Trichlorobenzene	ug/L	9	**4200**		**2400**		**3400**		**440**	J	**840**		**1700**		**400**	J	**6700**	
1,2-Dibromoethane	ug/L	0.03	64	U	16	U	16	U	160	U	64	U	160	U	64	U	64	U
1,2-Dichlorobenzene	ug/L	600	**12000**		**700**		**5300**		**36000**		**12000**		**29000**		**9300**		**10000**	
1,2-Dichloroethane	ug/L	2	64	U	16	U	16	U	160	U	64	U	160	U	64	U	64	U
1,2-Dichloropropane	ug/L	1	67	U	17	U	17	U	170	U	67	U	170	U	67	U	67	U
1,3-Dichlorobenzene	ug/L	600	**4600**		160		**1900**		**26000**		**9700**		**20000**		**9000**		**3700**	
1,4-Dichlorobenzene	ug/L	75	**6200**		**380**		**2400**		**42000**		**15000**		**32000**		**13000**		**4900**	
2-Butanone	ug/L	300	73	U	18	U	18	U	180	U	73	U	180	U	73	U	73	U
2-Hexanone[2]	ug/L	300	45	U	11	U	11	U	110	U	45	U	110	U	45	U	45	U
4-Methyl-2-pentanone	ug/L	--	46	U	12	U	12	U	120	U	46	U	120	U	46	U	46	U
Acetone	ug/L	6,000	500	U	280	J	120	U	1200	U	500	U	1200	U	500	U	500	U
Benzene	ug/L	1	**280**	J	20	U	**150**		**350**	J	81	U	200	U	**380**	J	**270**	J
Bromodichloromethane	ug/L	1	58	U	15	U	15	U	150	U	58	U	150	U	58	U	58	U
Bromoform	ug/L	4	37	U	9.2	U	9.2	U	92	U	37	U	92	U	37	U	37	U
Bromomethane	ug/L	10	75	U	19	U	19	U	190	U	75	U	190	U	75	U	75	U
Carbon disulfide	ug/L	700	110	U	27	U	27	U	270	U	110	U	270	U	110	U	110	U
Carbon tetrachloride	ug/L	1	91	U	23	U	23	U	230	U	91	U	230	U	91	U	91	U
Chlorobenzene	ug/L	50	**770**		33	J	**920**		**7800**		**730**		**1700**		**440**	J	**1700**	
Chloroethane[2]	ug/L	5	110	U	28	U	28	U	280	U	110	U	280	U	110	U	110	U
Chloroform	ug/L	70	78	U	19	U	19	U	190	U	78	U	190	U	78	U	78	U
Chloromethane	ug/L	--	87	U	22	U	22	U	220	U	87	U	220	U	87	U	87	U
cis-1,2-Dichloroethene	ug/L	70	100	U	25	U	34	J	250	U	100	U	250	U	100	U	100	U
cis-1,3-Dichloropropene	ug/L	1	79	U	20	U	20	U	200	U	79	U	200	U	79	U	79	U
Cyclohexane	ug/L	--	110	U	27	U	27	U	270	U	110	U	270	U	110	U	110	U
Dibromochloropropane	ug/L	0.02	130	U	31	U	31	U	310	U	130	U	310	U	130	U	130	U
Dibromochloromethane	ug/L	1	50	U	12	U	12	U	120	U	50	U	120	U	50	U	50	U
Dichlorodifluoromethane	ug/L	1000	100	U	26	U	26	U	260	U	410	J	370	J	100	U	100	U
Ethylbenzene	ug/L	700	150	J	15	U	15	U	150	U	58	U	150	U	260	J	58	U
Isopropylbenzene	ug/L	700	72	U	18	U	18	U	180	U	72	U	180	U	72	U	72	U
Methyl Acetate	ug/L	7000	47	U	12	U	12	U	120	U	47	U	120	U	47	U	47	U
Methylcyclohexane	ug/L	--	110	U	27	U	27	U	270	U	110	U	270	U	110	U	110	U
Methylene chloride	ug/L	3	75	U	19	U	19	U	190	U	75	U	190	U	75	U	**150**	J
Methyltert-butylether	ug/L	70	77	U	19	U	19	U	190	U	77	U	190	U	77	U	77	U
Styrene	ug/L	100	80	U	20	U	20	U	200	U	80	U	200	U	80	U	80	U
Tetrachloroethylene	ug/L	1	57	U	14	U	**340**		140	U	57	U	140	U	57	U	**640**	
Toluene	ug/L	600	**820**		20	U	20	U	200	U	80	U	200	U	80	U	80	U
trans-1,2-Dichloroethene	ug/L	100	90	U	23	U	23	U	230	U	90	U	230	U	90	U	90	U
trans-1,3-Dichloropropene	ug/L	1	57	U	14	U	14	U	140	U	57	U	140	U	57	U	57	U
Trichloroethylene	ug/L	1	88	U	22	U	**1100**		220	U	88	U	220	U	88	U	**1900**	
Trichlorofluoromethane	ug/L	2000	80	U	20	U	20	U	200	U	80	U	200	U	80	U	80	U
Vinyl chloride	ug/L	1	94	U	24	U	**30**	J	240	U	94	U	240	U	94	U	94	U
Xylene (total)	ug/L	1000	810	J	61	U	61	U	610	U	240	U	610	U	240	U	240	U

TABLE 4-11

ANALYTICAL RESULTS
GROUNDWATER SAMPLES - SAND UNIT
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	SC-MW-12L 04/25/08 Primary		SC-MW-13L 04/25/08 Primary		SC-MW-14L 04/24/08 Primary		SC-MW-15L 04/24/08 Primary		SC-MW-2L 04/24/08 Primary		SC-MW-3L 04/24/08 Primary		SC-MW-4L 04/24/08 Primary		SC-MW-8L 04/24/08 Primary	
Semivolatile Organics																		
1,1'-Biphenyl	ug/L	400	0.66	U	140		59		0.63	U	0.63	U	0.87	J	4.6	J	21	
1,2,4-Trichlorobenzene	ug/L	9	**NA**		**NA**		**NA**		**NA**		**NA**		**NA**		**NA**		**NA**	
1,4-Dichlorobenzene	ug/L	75	**NA**		**NA**		**NA**		**NA**		**NA**		**NA**		**NA**		**NA**	
2,2'-oxybis(1-chloropropane)	ug/L	--	0.28	U	1.4	U	0.28	U	0.27	U	0.27	U	0.28	U	0.29	U	0.3	U
2,4,5-Trichlorophenol	ug/L	700	0.68	U	3.4	U	0.68	U	0.66	U	0.66	U	0.68	U	0.7	U	73	
2,4,6-Trichlorophenol	ug/L	20	0.62	U	**170**		0.61	U	0.6	U	0.6	U	1.2	J	0.64	U	**120**	
2,4-Dichlorophenol	ug/L	20	0.53	U	2.6	U	0.52	U	**48**		**360**		**1000**		**170**		**450**	
2,4-Dimethylphenol	ug/L	100	**2500**		**3100**	J	**28000**		3.9	J	6.7	J	4.2	J	**680**		**660**	
2,4-Dinitrophenol	ug/L	40	14	U	70	U	14	U	13	U	13	U	14	U	14	U	15	U
2,4-Dinitrotoluene	ug/L	10	0.49	U	2.5	U	0.49	U	0.47	U	0.47	U	0.49	U	0.51	U	0.51	U
2,6-Dinitrotoluene	ug/L	10	0.55	U	2.8	U	0.55	U	0.53	U	0.53	U	0.55	U	0.57	U	0.58	U
2-Chloronaphthalene	ug/L	600	0.48	U	2.4	U	0.48	U	0.46	U	0.46	U	8.5	J	0.5	U	0.5	U
2-Chlorophenol	ug/L	40	26		2.5	U	0.49	U	0.48	U	18		35		5.1	J	**75**	
2-Methylnaphthalene[2]	ug/L	30	**150**	J	**790**		**700**	J	0.89	J	0.73	J	2	J	**32**		**290**	
2-Methylphenol	ug/L	--	2100		4000	J	20000		1.4	J	3	J	1.8	J	160		190	
2-Nitroaniline	ug/L	--	0.52	U	2.6	U	0.51	U	0.5	U	0.5	U	0.52	U	0.53	U	0.54	U
2-Nitrophenol	ug/L	--	0.59	U	2.9	U	0.58	U	0.57	U	0.57	U	0.59	U	0.61	U	0.62	U
3,3-Dichlorobenzidine	ug/L	30	0.45	U	2.2	U	0.44	U	0.43	U	0.43	U	0.45	U	0.46	U	0.47	U
3-Nitroaniline	ug/L	--	0.44	U	2.2	U	0.43	U	0.42	U	0.42	U	0.44	U	0.45	U	0.46	U
4,6-Dinitro-2-methylphenol[2]	ug/L	1	15	U	77	U	15	U	15	U	15	U	15	U	16	U	16	U
4-Bromophenylphenyl ether	ug/L	--	0.54	U	2.7	U	0.54	U	0.52	U	0.52	U	0.54	U	0.56	U	0.56	U
4-Chloroaniline	ug/L	30	0.5	U	2.5	U	0.5	U	0.49	U	0.49	U	0.5	U	0.52	U	0.53	U
4-Chlorophenyl phenyl ether	ug/L	--	0.46	U	2.3	U	0.46	U	0.45	U	0.45	U	0.46	U	0.48	U	0.49	U
4-Chloro-3-methylphenol[2]	ug/L	100	0.64	U	3.2	U	0.64	U	0.62	U	0.62	U	0.64	U	0.66	U	0.67	U
4-Methylphenol	ug/L	--	7000		19000		68000		5.6	J	11		7.7	J	260		1200	
4-Nitroaniline	ug/L	--	0.28	U	1.4	U	0.27	U	0.27	U	0.27	U	0.28	U	0.28	U	0.29	U
4-Nitrophenol	ug/L	--	0.76	U	3.8	U	0.76	U	0.74	U	0.74	U	0.76	U	0.79	U	0.8	U
Acenaphthene	ug/L	400	380		11000	U	560	U	1	J	2.5	J	0.57	U	200		21	
Acenaphthylene[2]	ug/L	100	35		78		0.5	U	0.49	U	0.49	U	0.5	U	3.4	J	0.53	U
Acetophenone	ug/L	700	0.5	U	2.5	U	0.5	U	0.49	U	0.72	J	0.5	U	0.52	U	6.8	J
Anthracene	ug/L	2000	32		77		15		0.53	U	0.55	J	0.55	U	0.8	J	6.3	J
Atrazine	ug/L	3	0.42	U	2.1	U	0.42	U	0.41	U	0.41	U	0.42	U	0.44	U	0.44	U
Benzaldehyde	ug/L	--	0.59	U	2.9	U	0.58	U	0.57	U	0.57	U	0.59	U	0.61	U	0.62	U
Benzo(a)anthracene	ug/L	0.1	0.45	U	2.2	U	0.44	U	0.43	U	0.43	U	0.45	U	0.46	U	**0.99**	J
Benzo(a)pyrene	ug/L	0.1	0.48	U	2.4	U	**1.9**	J	0.46	U	0.46	U	0.48	U	0.49	U	0.5	U
Benzo(b)fluoranthene	ug/L	0.2	0.34	U	1.7	U	0.34	U	0.33	U	0.33	U	0.34	U	0.35	U	**1**	J
Benzo(ghi)perylene[2]	ug/L	100	0.3	U	1.5	U	0.3	U	0.29	U	0.29	U	0.3	U	0.31	U	0.31	U
Benzo(k)fluoranthene	ug/L	0.5	0.43	U	2.1	U	0.43	U	0.41	U	0.41	U	0.43	U	0.44	U	0.45	U
Bis(2-chloroethoxy)methane	ug/L	--	1.3	U	6.6	U	1.3	U	1.3	U	1.3	U	1.3	U	1.4	U	1.4	U
Bis(2-chloroethyl)ether	ug/L	7	0.5	U	2.5	U	0.5	U	0.48	U	0.48	U	0.5	U	0.52	U	0.52	U
Bis(2-ethylhexyl)phthalate	ug/L	3	1.3	U	6.5	U	**3.8**	J	1.8	J	1.3	U	2	J	2	J	1.7	J
Butyl benzyl phthalate	ug/L	100	1.5	U	7.5	U	1.5	U	2.5	J	1.4	U	1.5	U	1.5	J	1.6	U
Caprolactam[2]	ug/L	5000	2	U	10	U	2	U	5.1	J	2	U	5.3	J	2.1	U	2.1	U
Carbazole	ug/L	--	28		36	J	7	J	2	J	0.55	U	0.6	J	2.8	J	2.7	J
Chrysene	ug/L	5	0.39	U	1.9	U	0.38	U	0.37	U	0.37	U	0.39	U	0.4	U	0.81	J
Dibenzo(a,h)anthracene	ug/L	0.3	0.38	U	1.9	U	0.38	U	0.37	U	0.37	U	0.38	U	0.39	U	0.4	U
Dibenzofuran	ug/L	--	94		2.9	U	56		0.56	U	1	J	0.58	U	32		26	
Diethyl phthalate	ug/L	6000	2.7	U	13	U	2.6	U	2.6	U	2.6	U	2.7	U	2.7	U	2.8	U
Dimethyl phthalate[2]	ug/L	100	0.46	U	2.3	U	0.46	U	0.44	U	0.44	U	0.46	U	0.47	U	0.48	U

TABLE 4-11

ANALYTICAL RESULTS
GROUNDWATER SAMPLES - SAND UNIT
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	SC-MW-12L 04/25/08 Primary		SC-MW-13L 04/25/08 Primary		SC-MW-14L 04/24/08 Primary		SC-MW-15L 04/24/08 Primary		SC-MW-2L 04/24/08 Primary		SC-MW-3L 04/24/08 Primary		SC-MW-4L 04/24/08 Primary		SC-MW-8L 04/24/08 Primary	
Semivolatile Organics (Continued)																		
Di-n-butyl phthalate	ug/L	700	0.51	U	2.5	U	0.5	U	0.49	U	0.49	U	0.51	U	0.6	J	0.53	U
Di-n-octyl phthalate	ug/L	100	0.46	U	2.3	U	0.46	U	0.45	U	0.45	U	0.46	U	0.48	U	0.49	U
Fluoranthene	ug/L	300	7.6	J	13	J	0.53	U	0.61	J	0.52	U	0.54	U	1.2	J	3.8	J
Fluorene	ug/L	300	76		170		32		0.57	U	0.94	J	0.59	U	6.4	J	17	
Hexachlorobenzene	ug/L	0.02	**43**		2.4	U	0.47	U	0.46	U	0.46	U	0.47	U	**1.1**	J	**7.8**	J
Hexachlorobutadiene	ug/L	1	0.41	U	2	U	0.41	U	0.39	U	0.39	U	0.41	U	0.42	U	0.43	U
Hexachlorocyclopentadiene	ug/L	40	0.87	U	4.4	U	0.86	U	0.84	U	0.84	U	0.87	U	0.9	U	0.91	U
Hexachloroethane	ug/L	7	0.47	U	2.4	U	0.47	U	0.46	U	0.46	U	0.47	U	0.49	U	0.5	U
Indeno(1,2,3-cd)pyrene	ug/L	0.2	0.52	U	2.6	U	0.51	U	0.5	U	0.5	U	0.52	U	0.53	U	0.54	U
Isophorone	ug/L	40	0.52	U	2.6	U	0.51	U	0.5	U	0.5	U	0.52	U	0.53	U	0.54	U
Naphthalene	ug/L	300	**2400**		**1700**	J	**9100**	J	24		30		57		**350**		**5300**	
Nitrobenzene	ug/L	6	0.7	U	3.5	U	0.69	U	0.67	U	0.67	U	0.7	U	0.72	U	0.73	U
N-Nitrosodiphenylamine	ug/L	10	0.53	U	2.7	U	0.53	U	0.51	U	0.51	U	0.53	U	0.55	U	0.56	U
N-Nitrosodipropylamine	ug/L	10	0.65	U	3.2	U	0.64	U	0.62	U	0.62	U	0.65	U	0.67	U	0.68	U
Pentachlorophenol	ug/L	0.3	0.9	U	4.5	U	0.9	U	0.87	U	0.87	U	0.9	U	0.93	U	0.95	U
Phenanthrene[2]	ug/L	100	49		19	J	8.2	J	0.85	J	0.98	J	0.76	J	11		18	
Phenol	ug/L	2000	**3700**		**19000**		**40000**		7.2	J	8.2	J	6.5	J	55		1500	
Pyrene	ug/L	200	8.3	J	31	J	12		0.59	U	0.59	U	0.62	U	0.84	J	2.2	J
Metals																		
Aluminum	ug/L	200	**4890**	J	**390000**	J	**13000**		123	B	**4210**		**308**		**7950**		**3400**	
Antimony	ug/L	6	2.9	U	2.9	U	2.9	U	2.9	U	2.9	U	2.9	U	2.9	U	2.9	U
Arsenic	ug/L	3	**25**		**56.5**		**6**	B	2.2	U	**268**		**191**		**330**		**9.1**	B
Barium	ug/L	6000	18.9	B	44.5	B	24.3	B	88.9	B	240	J	417	J	220	J	50.6	B
Beryllium	ug/L	1	**1.1**	B	**14.4**		0.32	U	0.32	U	**7.4**		0.6	B	**17.8**		**1.2**	B
Cadmium	ug/L	4	0.23	U	0.23	U	0.49	B	0.23	U	**5**		1.2	B	0.65	B	2	B
Calcium	ug/L	--	208000	J	443000	J	495000	J	57600	J	94000	J	63200	J	49700	J	66600	J
Chromium (Total)	ug/L	70	57.4		**6930**		**132**		4.3	B	**12100**		**171**		**10700**		**281**	
Chromium (Hexavalent)	ug/L	--	10	U	20	U	10	U	10	U	250	U	250	U	500	U	10	U
Cobalt[2]	ug/L	100	11.1	B	**162**		8.4	B	0.7	U	5.3	B	0.9	B	6.5	B	14.2	B
Copper	ug/L	1300	0.72	U	0.72	U	0.82	B	1.3	B	16.5	B	1	B	12	B	8.9	B
Iron	ug/L	300	**73600**		**309000**		**45600**		**8120**		**44600**		**105000**		**55300**		**118000**	
Lead	ug/L	5	2.4	U	**401**		2.4	U	**79.4**		**26.4**		2.4	U	**12.1**		3.2	
Magnesium	ug/L	--	27300	J	133000	J	70200	J	27400	J	75200	J	79800	J	43500	J	93600	J
Manganese	ug/L	50	**1000**		**3590**		**646**		**268**		**715**		**1510**		**1080**		**8580**	
Mercury	ug/L	2	0.055	U	0.085	B	0.055	U	0.055	U	0.16	B	0.055	U	0.2		0.055	U
Nickel	ug/L	100	68.3		**1980**		71.9		1.2	B	47.3		4.1	B	70.5		14.7	B
Potassium	ug/L	--	13900		200000		18200		13600		27700		39100		31400		45900	
Selenium	ug/L	40	5.1		34.3		6.2		2.5	U	4.3	B	2.5	U	5.9		2.5	U
Silver	ug/L	40	0.65	B	0.83	B	0.59	U	0.59	U	0.94	B	0.97	B	1.8	B	2.3	B
Sodium	ug/L	50000	**210000**		**1010000**		**226000**		**64200**		**1440000**		**771000**		**1370000**		**1430000**	
Thallium	ug/L	2	3.1	U	15.4	U	3.1	U	3.1	U	**3.3**	B	3.1	U	3.1	U	3.1	U
Vanadium[3]	ug/L	60	24.4	B	**386**		8	B	6.4	B	**531**	J	**77.7**	J	**1520**	J	**286**	J
Zinc	ug/L	2000	78.7		818		42.1		1.5	B	115		2.2	B	45.2		36.6	

TABLE 4-11

ANALYTICAL RESULTS
GROUNDWATER SAMPLES - SAND UNIT
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	SC-MW-12L 04/25/08 Primary		SC-MW-13L 04/25/08 Primary		SC-MW-14L 04/24/08 Primary		SC-MW-15L 04/24/08 Primary		SC-MW-2L 04/24/08 Primary		SC-MW-3L 04/24/08 Primary		SC-MW-4L 04/24/08 Primary		SC-MW-8L 04/24/08 Primary	
PCBs																		
Aroclor 1016	ug/L	0.5	**4.5**		**7.5**		**1.2**		0.1	U	0.1	U	0.1	U	0.1	U	**78**	
Aroclor 1221	ug/L	0.5	0.1	U	1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	2.1	U
Aroclor 1232	ug/L	0.5	0.12	U	1.2	U	0.12	U	0.12	U	0.12	U	0.12	U	0.12	U	2.4	U
Aroclor 1242	ug/L	0.5	0.077	U	0.76	U	0.076	U	0.076	U	0.076	U	0.076	U	0.077	U	1.5	U
Aroclor 1248	ug/L	0.5	0.095	U	0.93	U	**0.61**	PG	0.093	U	0.093	U	0.093	U	0.095	U	**58**	
Aroclor 1254	ug/L	0.5	0.095	U	0.93	U	0.093	U	0.093	U	0.093	U	0.093	U	0.095	U	1.9	U
Aroclor 1260	ug/L	0.5	**1.4**		0.55	U	0.055	U	0.055	U	0.055	U	0.055	U	0.056	U	**14**	
Aroclor 1262	ug/L	0.5	0.086	U	0.84	U	0.084	U	0.084	U	0.084	U	0.084	U	0.086	U	1.7	U
Aroclor 1268	ug/L	0.5	0.11	U	1.1	U	0.11	U	0.11	U	0.11	U	0.11	U	0.11	U	2.3	U
Pesticides																		
4,4'-DDD	ug/L	0.1	0.0087	JPG	0.079	U	0.0079	U	0.0079	U	0.0079	U	0.0079	U	0.008	U	0.08	U
4,4'-DDE	ug/L	0.1	**0.21**		0.069	U	0.043	J	0.0069	U	0.0069	U	0.0069	U	0.013	J	**0.59**	PG
4,4'-DDT	ug/L	0.1	0.014	U	0.14	U	0.014	U	0.014	U	0.014	U	0.014	U	0.014	U	**0.24**	J
Aldrin	ug/L	0.04	0.012	U	**0.12**	JPG	0.011	U	0.011	U	0.011	U	0.011	U	0.012	U	0.12	U
alpha-BHC	ug/L	0.02	0.016	U	0.15	U	0.015	U	0.015	U	0.015	U	0.015	U	0.016	U	0.16	U
alpha-Chlordane	ug/L	0.5	0.012	U	0.38	J	0.011	U	0.011	U	0.011	U	0.011	U	0.018	J	0.12	U
beta-BHC	ug/L	0.04	0.015	U	0.15	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.15	U
delta-BHC	ug/L	--	0.0098	U	0.24	J	0.09		0.0097	U	0.0097	U	0.0097	U	0.021	J	2.8	
Dieldrin	ug/L	0.03	0.0083	U	0.082	U	0.0082	U	0.0082	U	0.0082	U	0.0082	U	0.024	J	0.083	U
Endosulfan I	ug/L	40	0.0077	U	0.076	U	0.0076	U	0.0076	U	0.0076	U	0.0076	U	0.0077	U	0.21	J
Endosulfan II	ug/L	40	0.063	PG	0.15	U	0.015	U	0.015	U	0.015	U	0.015	U	0.016	U	0.16	J
Endosulfan sulfate	ug/L	40	0.017	U	0.16	U	0.016	U	0.016	U	0.016	U	0.016	U	0.017	U	0.49	J
Endrin	ug/L	2	0.0079	U	0.078	U	0.012	J	0.0078	U	0.0078	U	0.0078	U	0.0079	U	0.1	J
Endrin aldehyde	ug/L	--	0.013	U	0.12	U	0.085	PG	0.012	U	0.012	U	0.012	U	0.013	U	0.13	U
Endrin ketone	ug/L	--	0.025	JPG	0.1	U	0.028	J	0.01	U	0.01	U	0.01	U	0.01	U	0.1	U
gamma-Chlordane	ug/L	0.5	0.0079	U	0.077	U	0.0077	U	0.0077	U	0.0077	U	0.0077	U	0.0079	U	0.079	U
Heptachlor	ug/L	0.05	**0.066**	PG	**0.17**	JPG	0.042	J	0.014	U	0.014	U	0.014	U	0.014	U	**2.1**	
Heptachlor epoxide	ug/L	0.2	0.079		0.1	U	0.077	PG	0.01	U	0.01	U	0.01	U	0.018	J	**0.93**	PG
Lindane	ug/L	0.03	0.016	U	0.15	U	**0.2**		0.015	U	0.015	U	0.015	U	0.016	U	**0.62**	PG
Methoxychlor	ug/L	40	0.019	U	0.19	U	0.019	U	0.019	U	0.019	U	0.019	U	0.019	U	0.19	U
Toxaphene	ug/L	2	0.43	U	4.2	U	0.42	U	0.42	U	0.42	U	0.42	U	0.43	U	4.3	U
Indicators																		
Biological Oxygen Demand (BOD)	mg/L	--	297		457		415		129		120		17.3		240		40.9	
Carbon	mg/L	--	886	J	7050	J	849	J	18.4	J	51.4	J	67.6	J	245	J	136	J
Chemical Oxygen Demand (COD)	mg/L	--	2950		23900		2810		66		275		227		687		504	
Oil & Grease (HEM)	mg/L	--	26.9		15.9		6		0.52	U	NA		0.52	U	NA		7	
Residue, filterable	mg/L	--	2970		21700		4390		454		6300		2930		7070		5330	
Residue, non-filterable	mg/L	--	39.6		30.8		31.5		8		14.5		167		26.8		21.5	
Total Alkalinity	mg/L	--	10.7	J	0.41	U	0.41	U	316	J	1090	J	748	J	1940	J	836	J

1. Specific Ground Water Quality Criteria - Class IIA - from Appendix Table 1 New Jersey Administrative Code 7:9C unless otherwise noted. Last amended July 7, 2008.
2. Interim Ground Water Quality Criteria as listed at www.nj.gov/dep/wms/bwqsa/gwqs_interim_criteria_table.htm.
3. Standard reported for vanadium is for vanadium pentoxide.

Data qualifiers are as follows:

B - Inorganic results. Result is an estimate. Quantitation between the detection limit and the reporting limit.
J - Organic results. Result is an estimate. Quantitated between the detection limit and the reporting limit.
J - Inorganic results. Result is an estimated concentration. Quantitated below the reporting limit.
U - Not detected at the detection limit indicated.
-- - Not analyzed or criteria unavailable.

TABLE 4-12

ANALYTICAL RESULTS
DENSE NON-AQUEOUS PHASE LIQUID SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion	SC-MW-3L 04/30/08 Primary		SC-MW-13L 04/30/08 Primary	
Polychlorinated Dioxins/Furans						
1,2,3,4,6,7,8-HpCDD	ug/Kg	--	9.2		6000	U
1,2,3,4,6,7,8-HpCDF	ug/Kg	--	1200	B	400000	
1,2,3,4,7,8,9-HpCDF	ug/Kg	--	35		12000	U
1,2,3,4,7,8-HxCDD	ug/Kg	--	0.83	QJ	890	U
1,2,3,4,7,8-HxCDF	ug/Kg	--	310	QB	130000	
1,2,3,6,7,8-HxCDD	ug/Kg	--	3	J	2300	U
1,2,3,6,7,8-HxCDF	ug/Kg	--	63	QB	15000	J
1,2,3,7,8,9-HxCDD	ug/Kg	--	1.6	QJ	1500	U
1,2,3,7,8,9-HxCDF	ug/Kg	--	0.34	QJ	580	U
1,2,3,7,8-PCDD	ug/Kg	--	1.7	QJ	1900	U
1,2,3,7,8-PCDF	ug/Kg	--	8.7		2600	U
2,3,4,6,7,8-HxCDF	ug/Kg	--	15		5100	U
2,3,4,7,8-PCDF	ug/Kg	--	28	Q	16000	J
2,3,7,8-TCDD	ug/Kg	--	0.55	QJ	210	U
2,3,7,8-TCDF	ug/Kg	--	5.4	Q	13000	
OCDD	ug/Kg	--	32	B	23000	U
OCDF	ug/Kg	--	2100	B	880000	
Total HpCDD	ug/Kg	--	23		6000	U
Total HpCDF	ug/Kg	--	1300	B	430000	
Total HxCDD	ug/Kg	--	24	Q	5600	U
Total HxCDF	ug/Kg	--	770	QB	210000	
Total PeCDD	ug/Kg	--	31	Q	7700	U
Total PeCDF	ug/Kg	--	380	Q	70000	
Total TCDD	ug/Kg	--	43	Q	20000	
Total TCDF	ug/Kg	--	250	Q	34000	
Polychlorinated Dioxins/Furans (2,3,7,8 Equivalents)						
1,2,3,4,6,7,8-HpCDD	0.01	--	0.092		--	
1,2,3,4,6,7,8-HpCDF	0.01	--	12		4000	
1,2,3,4,7,8,9-HpCDF	0.01	--	0.35		--	
1,2,3,4,7,8-HxCDD	0.10	--	--		--	
1,2,3,4,7,8-HxCDF	0.10	--	--		13000	
1,2,3,6,7,8-HxCDD	0.10	--	0.3		--	
1,2,3,6,7,8-HxCDF	0.10	--	--		1500	
1,2,3,7,8,9-HxCDD	0.10	--	--		--	
1,2,3,7,8,9-HxCDF	0.10	--	--		--	
1,2,3,7,8-PCDD	1.00	--	--		--	
1,2,3,7,8-PCDF	0.05	--	0.435		--	
2,3,4,6,7,8-HxCDF	0.10	--	1.5		--	
2,3,4,7,8-PCDF	0.50	--	--		8000	
2,3,7,8-TCDD	1.00	--	--		--	
2,3,7,8-TCDF	0.10	--	--		1300	
OCDD	0.0001	--	0.0032		--	
OCDF	0.0001	--	0.21		88	
Total 2,3,7,8-TCDD Equivalents[1]	ug/Kg	1	**1.5E+01**		**2.8E+04**	
Metals						
Chromium (Hexavalent)[2]	mg/Kg	20	2	U	2	U
Toxicity Characteristic Leaching Procedure[3]						
1,1-Dichloroethene	mg/Kg	0.7	58	U	58	U
1,2-Dichloroethane	mg/Kg	0.5	55	U	55	U
1,4-Dichlorobenzene	mg/Kg	7.5	**520000**		**6300**	J
2,4,5-Trichlorophenol	mg/Kg	400	970	U	970	U
2,4,6-Trichlorophenol	mg/Kg	2	700	U	700	U
2,4-Dinitrotoluene	mg/Kg	0.13	900	U	900	U
2-Butanone	mg/Kg	200	49	U	49	U

TABLE 4-12

ANALYTICAL RESULTS
DENSE NON-AQUEOUS PHASE LIQUID SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion	SC-MW-3L 04/30/08 Primary		SC-MW-13L 04/30/08 Primary	
Toxicity Characteristic Leaching Procedure[3] (Continued)						
Benzene	mg/Kg	0.5	**110**	J	52	U
Carbon tetrachloride	mg/Kg	0.5	45	U	45	U
Chlorobenzene	mg/Kg	100	**8800**		**410**	
Chloroform	mg/Kg	6	53	U	53	U
Cresols	mg/Kg	200	43	J	**1400**	J
Hexachlorobenzene	mg/Kg	0.13	820	U	**12000**	
Hexachlorobutadiene	mg/Kg	0.5	1400	U	1400	U
Hexachloroethane	mg/Kg	3	1400	U	1400	U
Nitrobenzene	mg/Kg	2	940	U	940	U
Pentachlorophenol	mg/Kg	100	690	U	690	U
Pyridine	mg/Kg	5	510	U	510	U
Tetrachloroethene	mg/Kg	0.7	**120**	J	**220**	J
Trichloroethene	mg/Kg	0.5	56	U	**58**	J
Vinyl chloride	mg/Kg	0.2	56	U	56	U
Arsenic	mg/Kg	5	0.9	B	0.29	B
Barium	mg/Kg	100	0.18	B	0.19	B
Cadmium	mg/Kg	1	0.047	U	0.047	U
Chromium	mg/Kg	5	0.42	B	0.63	
Lead	mg/Kg	5	0.16	U	0.16	U
Mercury	mg/Kg	0.2	0.028	B	0.019	B
Selenium	mg/Kg	1	0.29	U	0.84	
Silver	mg/Kg	5	0.037	U	0.037	U
Polychlorinated Biphenyls (Aroclors)						
Aroclor 1016	mg/Kg	1	0.74	U	**8600**	
Aroclor 1221	mg/Kg	1	0.95	U	190	U
Aroclor 1232	mg/Kg	1	0.86	U	170	U
Aroclor 1242	mg/Kg	1	0.81	U	160	U
Aroclor 1248	mg/Kg	1	0.47	U	**6000**	
Aroclor 1254	mg/Kg	1	0.71	U	140	U
Aroclor 1260	mg/Kg	1	0.71	U	**2100**	
Aroclor 1262	mg/Kg	1	1.1	U	220	U
Aroclor 1268	mg/Kg	1	0.64	U	**600**	J
RCRA Characteristics and Indicator Parameters						
Cyanide (Reactivity)	mg/Kg	23000	0.42	B	0.44	B
Total Sulfide (Reactivity)	mg/Kg	--	40		552	
Flashpoint (Ignitability)	^{o}F	>200	**151**		>200	
Corrosivity (pH)	SU	2<pH<12.5	4.8		2.9	
Total Organic Halogens	mg/Kg	--	266000	J	258000	J

Notes:

1. The 1 ug/kg benchmark for 2,3,7,8-TCDD equivalents is the United States Environmental Protection Agency residential guideline per OSWER Directive 9200.4-26.

2. Nonpromulgated criteria for hexavalent chromium determined by chromium workgroup (www.state.nj.us/dep/srp/guidance/rs/chrome_criteria.pdf).

3. Toxicity Characteristic Leaching Procedure limits as specified in 40 Code of Federal Regulations 261.24 - available at electronic CFR website (ecfr.gpoaccess.gov).

Exceedances are shown in bold, shaded typeface. Data qualifiers are as follows:

B - Organic results. Analyte detected in associated method blank
B - Inorganic results. Result is an estimate. Quantitation between the detection limit and the reporting limit.
J - Organic results. Result is an estimate. Quantitated between the detection limit and the reporting limit.
Q - One or more quality control criteria for identification not attained. Value is an Estimated Maximum Possible Concentration. Analyte may be present below the quantitation limit indicated.

U - Not detected at the detection limit indicated.
-- - Not analyzed or criteria unavailable.

TABLE 4-13

ANALYTICAL RESULTS
EAST AND WEST LAGOON SOLID SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	WLWC-01 05/27/08 Primary		WLWC-02 05/27/08 Primary		WLWC-03 05/27/08 Primary		WLWC-04 05/27/08 Primary		ELWC-01 05/28/08 Primary		ELWC-02 05/28/08 Primary		ELWC-03 05/28/08 Primary		ELWC-04 05/28/08 Primary		ELWC-05 05/28/08 Primary		ELWC-06 05/28/08 Primary		ELWC-06 05/28/08 Duplicate	
		Sample Depth	**0.0-4.0 ft**		**0.0-4.0 ft**		**0.0-4.0 ft**		**0.0-4.0 ft**		**0.0-4.0 ft**		**0.0-4.0 ft**		**0.0-4.0 ft**		**0.0-4.0 ft**		**0.0-4.0 ft**		**0.0-3.2 ft**		**0.0-4.0 ft**	
		VOC Sample Depth	**3.0-4.0 ft**		**3.0-4.0 ft**		**1.0-2.0 ft**		**3.0-4.0 ft**		**1.0-2.0 ft**		**1.0-2.0 ft**		**3.0-4.0 ft**		**1.0-2.0 ft**		**3.0-4.0 ft**		**3.0-4.0 ft**		**3.0-4.0 ft**	
Volatile Organics																								
1,1,1-Trichloroethane	mg/Kg	4200	2.4	U	2.3	U	0.051	U	2.4	U	0.3	U	3.4	U	3	U	3.6	U	3.2	U	1.6	U	3	U
1,1,2,2-Tetrachloroethane	mg/Kg	3	2.6	U	2.5	U	0.057	U	2.7	U	0.34	U	3.8	U	3.3	U	4.1	U	3.6	U	1.8	U	3.3	U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg	6	2.9	U	2.8	U	0.062	U	2.9	U	0.37	U	4.2	U	3.6	U	4.4	U	3.9	U	2	U	3.6	U
1,1,2-Trichloroethane	mg/Kg	--	2.5	U	2.4	U	0.054	U	2.5	U	0.32	U	3.6	U	3.1	U	3.8	U	3.4	U	1.7	U	3.1	U
1,1-Dichloroethane	mg/Kg	24	2.3	U	2.2	U	0.049	U	2.3	U	0.29	U	3.3	U	2.9	U	3.5	U	3.1	U	1.6	U	2.8	U
1,1-Dichloroethene	mg/Kg	150	2.7	U	2.6	U	0.059	U	2.8	U	0.35	U	4	U	3.4	U	4.2	U	3.7	U	1.9	U	3.4	U
1,2,4-Trichlorobenzene	mg/Kg	820	23		24		0.62		29		5.7		20		130		35		**3300**		**3400**		**2600**	
1,2-Dibromoethane	mg/Kg	0.04	2.4	U	2.3	U	0.053	U	2.4	U	0.31	U	3.5	U	3.1	U	3.7	U	3.3	U	1.7	U	3	U
1,2-Dichlorobenzene	mg/Kg	59000	310		330		8.2		400		2.3		16	J	91		3.9	U	3400		390		360	
1,2-Dichloroethane	mg/Kg	3	2.5	U	2.4	U	0.055	U	2.6	U	0.33	U	3.7	U	3.2	U	3.9	U	3.5	U	1.8	U	3.2	U
1,2-Dichloropropane	mg/Kg	5	2.6	U	2.5	U	0.056	U	2.6	U	0.33	U	3.8	U	3.3	U	4	U	3.5	U	1.8	U	3.2	U
1,3-Dichlorobenzene	mg/Kg	59000	120		120		3.1		150		1	J	6.5	J	29		3.8	U	1300		47		52	
1,4-Dichlorobenzene	mg/Kg	13	**190**		**190**		4.8		**240**		3.4		11	J	**54**		4	J	**2100**		**120**		**110**	
2-Butanone	mg/Kg	44000	2.3	U	2.2	U	0.049	U	2.3	U	0.29	U	3.3	U	2.9	U	3.5	U	3.1	U	1.6	U	2.8	U
2-Hexanone	mg/Kg	--	1.8	U	1.8	U	0.04	U	1.9	U	0.24	U	2.7	U	2.3	U	2.8	U	2.5	U	1.3	U	2.3	U
4-Methyl-2-pentanone	mg/Kg	--	2	U	1.9	U	0.044	U	2	U	0.26	U	2.9	U	2.6	U	3.1	U	2.8	U	1.4	U	2.5	U
Acetone	mg/Kg	--	2.8	U	2.7	U	0.06	U	2.8	U	0.36	U	4	U	3.5	U	4.3	U	3.8	U	1.9	U	3.5	U
Benzene	mg/Kg	5	3	J	2.7	J	0.061	J	3.5	J	2.7		3.5	U	**7.5**	J	3.7	U	**6.3**	J	1.7	U	3	U
Bromodichloromethane	mg/Kg	3	2.3	U	2.2	U	0.049	U	2.3	U	0.29	U	3.3	U	2.9	U	3.5	U	3.1	U	1.6	U	2.8	U
Bromoform	mg/Kg	280	2.4	U	2.3	U	0.051	U	2.4	U	0.3	U	3.5	U	3	U	3.6	U	3.2	U	1.6	U	3	U
Bromomethane	mg/Kg	59	2.9	U	2.8	U	0.064	U	3	U	0.38	U	4.3	U	3.7	U	4.5	U	4	U	2	U	3.7	U
Carbon disulfide	mg/Kg	110000	2.8	U	2.7	U	0.062	U	2.9	U	0.37	U	4.2	U	3.6	U	4.4	U	3.9	U	2	U	3.6	U
Carbon tetrachloride	mg/Kg	2	2.1	U	2	U	0.045	U	2.1	U	0.27	U	3	U	2.6	U	3.2	U	2.8	U	1.4	U	2.6	U
Chlorobenzene	mg/Kg	7400	19		19		0.47		24		0.33	U	3.8	U	3.3	U	4	U	770		8.3		9.6	J
Chloroethane	mg/Kg	1100	3.3	U	3.2	U	0.073	U	3.4	U	0.43	U	4.9	U	4.2	U	5.1	U	4.6	U	2.3	U	4.2	U
Chloroform	mg/Kg	2	2.5	U	2.4	U	0.053	U	2.5	U	0.32	U	3.6	U	3.1	U	3.8	U	3.4	U	1.7	U	3.1	U
Chloromethane	mg/Kg	12	2.6	U	2.5	U	0.056	U	2.6	U	0.33	U	3.8	U	3.3	U	4	U	3.5	U	1.8	U	3.2	U
cis-1,2-Dichloroethene	mg/Kg	560	2.5	U	2.4	U	0.054	U	2.5	U	0.32	U	3.7	U	3.2	U	3.9	U	3.4	U	1.7	U	3.1	U
cis-1,3-Dichloropropene	mg/Kg	7	2.1	U	2	U	0.045	U	2.1	U	0.27	U	3	U	2.6	U	3.2	U	2.9	U	1.4	U	2.6	U
Cyclohexane	mg/Kg	--	2.3	U	2.2	U	0.05	U	2.3	U	0.3	U	3.4	U	2.9	U	3.6	U	3.2	U	1.6	U	2.9	U
Dibromochloromethane	mg/Kg	--	2.1	U	2.1	U	0.047	U	2.2	U	0.28	U	3.1	U	2.7	U	3.3	U	3	U	1.5	U	2.7	U
Dibromochloropropane	mg/Kg	8	2	U	1.9	U	0.042	U	2	U	0.25	U	2.9	U	2.5	U	3	U	2.7	U	1.4	U	2.4	U
Dichlorodifluoromethane	mg/Kg	230000	3	U	2.9	U	0.064	U	3	U	0.38	U	4.3	U	3.8	U	4.6	U	4.1	U	2.1	U	3.7	U
Ethylbenzene	mg/Kg	110000	5.8	J	6.1	J	0.13	J	6.8	J	8		6	J	20		7.7	J	3.8	U	2.6	J	3.4	U
Isopropylbenzene	mg/Kg	--	2.5	U	2.4	U	0.054	U	2.5	U	0.94	J	3.6	U	3.2	J	3.8	U	6.8	J	1.7	U	3.1	U
Methyl acetate	mg/Kg	--	23		22		0.49		24		9.1		3.6	U	20		3.8	U	33		1.7	U	3.1	U
Methylcyclohexane	mg/Kg	--	2.6	U	2.5	U	0.057	U	2.6	U	0.34	U	3.8	U	3.3	U	4	U	3.6	U	1.8	U	3.3	U
Methylene chloride	mg/Kg	97	1.8	U	1.7	U	0.039	U	1.8	U	0.23	U	2.6	U	2.3	U	2.7	U	2.4	U	1.2	U	2.2	U
Methyltert-butylether	mg/Kg	320	2.1	U	2.1	U	0.047	U	2.2	U	0.28	U	3.1	U	2.7	U	3.3	U	2.9	U	1.5	U	2.7	U
Styrene	mg/Kg	260	2.6	U	2.5	U	0.056	U	2.6	U	0.33	U	3.8	U	3.3	U	4	U	3.5	U	1.8	U	3.2	U
Tetrachloroethene	mg/Kg	5	3	U	2.9	U	0.066	U	3.1	U	0.39	U	4.4	U	3.8	U	4.7	U	**11**	J	2.1	U	3.8	U
Toluene	mg/Kg	91000	7.9	J	7.4	J	0.18	J	8.8	J	9		7.5	J	25		9.8	J	5	J	2.7	J	2.6	J
trans-1,2-Dichloroethene	mg/Kg	720	2.7	U	2.6	U	0.059	U	2.7	U	0.35	U	3.9	U	3.4	U	4.2	U	3.7	U	1.9	U	3.4	U
trans-1,3-Dichloropropene	mg/Kg	7	2	U	2	U	0.044	U	2	U	0.26	U	3	U	2.6	U	3.1	U	2.8	U	1.4	U	2.5	U
Trichloroethene	mg/Kg	20	2.6	U	2.5	U	0.056	U	2.6	U	0.34	U	3.8	U	3.3	U	4	U	3.6	U	1.8	U	3.3	U
Trichlorofluoromethane	mg/Kg	340000	3.8	U	3.6	U	0.082	U	3.8	U	0.49	U	5.5	U	4.8	U	5.8	U	5.2	U	2.6	U	4.7	U
Vinyl chloride	mg/Kg	2	2.6	U	2.5	U	0.056	U	2.6	U	0.33	U	3.8	U	3.3	U	4	U	3.6	U	1.8	U	3.2	U
Xylene (total)	mg/Kg	170000	32	J	31	J	0.74	J	36		32		36	J	96		56		12	J	18	J	14	J

TABLE 4-13

ANALYTICAL RESULTS
EAST AND WEST LAGOON SOLID SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	WLWC-01 05/27/08 Primary		WLWC-02 05/27/08 Primary		WLWC-03 05/27/08 Primary		WLWC-04 05/27/08 Primary		ELWC-01 05/28/08 Primary		ELWC-02 05/28/08 Primary		ELWC-03 05/28/08 Primary		ELWC-04 05/28/08 Primary		ELWC-05 05/28/08 Primary		ELWC-06 05/28/08 Primary		ELWC-06 05/28/08 Duplicate	
Semivolatile Organics																								
1,1'-Biphenyl	mg/Kg	34000	1800		880	J	970	J	620	J	23000	U	23000	U	23000	U	23000	U	23000	U	23000	U	2300	U
2,2'-oxybis(1-chloropropane)	mg/Kg	--	160	U	160	U	160	U	160	U	33000	U	33000	U	33000	U	33000	U	33000	U	33000	U	3300	U
2,4,5-Trichlorophenol	mg/Kg	68000	97	U	97	U	97	U	97	U	19000	U	19000	U	19000	U	19000	U	19000	U	19000	U	1900	U
2,4,6-Trichlorophenol	mg/Kg	74	70	U	70	U	70	U	70	U	14000	U	14000	U	14000	U	14000	U	14000	U	14000	U	1400	U
2,4-Dichlorophenol	mg/Kg	2100	100	U	100	U	100	U	100	U	21000	U	21000	U	21000	U	21000	U	21000	U	21000	U	2100	U
2,4-Dimethylphenol	mg/Kg	14000	1900		710	J	410	J	570	J	17000	U	17000	U	17000	U	17000	U	17000	U	17000	U	1700	U
2,4-Dinitrophenol	mg/Kg	1400	1500	U	1500	U	1500	U	1500	U	300000	U	300000	U	300000	U	300000	U	300000	U	300000	U	30000	U
2,4-Dinitrotoluene	mg/Kg	3	90	U	90	U	90	U	90	U	18000	U	18000	U	18000	U	18000	U	18000	U	18000	U	1800	U
2,6-Dinitrotoluene	mg/Kg	3	75	U	75	U	75	U	75	U	15000	U	15000	U	15000	U	15000	U	15000	U	15000	U	1500	U
2-Chloronaphthalene	mg/Kg	--	90	U	90	U	90	U	90	U	18000	U	18000	U	18000	U	18000	U	18000	U	18000	U	1800	U
2-Chlorophenol	mg/Kg	2200	180	U	180	U	180	U	180	U	36000	U	36000	U	36000	U	36000	U	36000	U	36000	U	3600	U
2-Methylnaphthalene	mg/Kg	2400	**12000**	J	**21000**		30000	U	15000	U	21000	U	21000	U	21000	U	**24000**	J	21000	U	21000	U	**3700**	J
2-Methylphenol	mg/Kg	3400	470	J	370	J	150	U	380	J	30000	U	30000	U	30000	U	30000	U	30000	U	30000	U	3000	U
2-Nitroaniline	mg/Kg	23000	93	U	93	U	93	U	93	U	19000	U	19000	U	19000	U	19000	U	19000	U	19000	U	1900	U
2-Nitrophenol	mg/Kg	--	140	U	140	U	140	U	140	U	27000	U	27000	U	27000	U	27000	U	27000	U	27000	U	2700	U
3,3'-Dichlorobenzidine	mg/Kg	4	60	U	60	U	60	U	60	U	12000	U	12000	U	12000	U	12000	U	12000	U	12000	U	1200	U
3-Nitroaniline	mg/Kg	--	94	U	94	U	94	U	94	U	19000	U	19000	U	19000	U	19000	U	19000	U	19000	U	1900	U
4,6-Dinitro-2-methylphenol	mg/Kg	68	64	U	64	U	64	U	64	U	13000	U	13000	U	13000	U	13000	U	13000	U	13000	U	1300	U
4-Bromophenylphenyl ether	mg/Kg	--	83	U	83	U	83	U	83	U	17000	U	17000	U	17000	U	17000	U	17000	U	17000	U	1700	U
4-Chloro-3-methylphenol	mg/Kg	--	85	U	85	U	85	U	85	U	17000	U	17000	U	17000	U	17000	U	17000	U	17000	U	1700	U
4-Chloroaniline	mg/Kg	--	68	U	68	U	68	U	68	U	14000	U	14000	U	14000	U	14000	U	14000	U	14000	U	1400	U
4-Chlorophenyl phenyl ether	mg/Kg	--	69	U	69	U	69	U	69	U	14000	U	14000	U	14000	U	14000	U	14000	U	14000	U	1400	U
4-Methylphenol	mg/Kg	340	**1400**		**1300**		280	J	**1400**		45000	U	45000	U	45000	U	45000	U	45000	U	45000	U	4500	U
4-Nitroaniline	mg/Kg	--	58	U	58	U	58	U	58	U	12000	U	12000	U	12000	U	12000	U	12000	U	12000	U	1200	U
4-Nitrophenol	mg/Kg	--	69	U	69	U	69	U	69	U	14000	U	14000	U	14000	U	14000	U	14000	U	14000	U	1400	U
Acenaphthene	mg/Kg	37000	1700		530	J	420	J	1400		16000	U	16000	U	16000	U	16000	U	16000	U	16000	U	1600	U
Acenaphthylene	mg/Kg	300000	92	U	92	U	92	U	92	U	18000	U	18000	U	18000	U	18000	U	18000	U	18000	U	1800	U
Acetophenone	mg/Kg	5	150	U	150	U	150	U	150	U	30000	U	30000	U	30000	U	30000	U	30000	U	30000	U	3000	U
Anthracene	mg/Kg	30000	1000		220	J	520	J	710	J	19000	U	19000	U	19000	U	19000	U	19000	U	19000	U	1900	U
Atrazine	mg/Kg	2400	140	U	140	U	140	U	140	U	29000	U	29000	U	29000	U	29000	U	29000	U	29000	U	2900	U
Benzaldehyde	mg/Kg	68000	210	U	210	U	210	U	210	U	41000	U	41000	U	41000	U	41000	U	41000	U	41000	U	4100	U
Benzo(a)anthracene	mg/Kg	2	99	U	99	U	99	U	99	U	20000	U	20000	U	20000	U	20000	U	20000	U	20000	U	2000	U
Benzo(a)pyrene	mg/Kg	0.2	91	U	91	U	91	U	91	U	18000	U	18000	U	18000	U	18000	U	18000	U	18000	U	1800	U
Benzo(b)fluoranthene	mg/Kg	2	130	U	130	U	130	U	130	U	27000	U	27000	U	27000	U	27000	U	27000	U	27000	U	2700	U
Benzo(ghi)perylene	mg/Kg	30000	87	U	87	U	87	U	87	U	17000	U	17000	U	17000	U	17000	U	17000	U	17000	U	1700	U
Benzo(k)fluoranthene	mg/Kg	23	130	U	130	U	130	U	130	U	26000	U	26000	U	26000	U	26000	U	26000	U	26000	U	2600	U
Bis(2-chloroethoxy)methane	mg/Kg	--	110	U	110	U	110	U	110	U	23000	U	23000	U	23000	U	23000	U	23000	U	23000	U	2300	U
Bis(2-chloroethyl)ether	mg/Kg	2	110	U	110	U	110	U	110	U	23000	U	23000	U	23000	U	23000	U	23000	U	23000	U	2300	U
Bis(2-ethylhexyl)phthalate	mg/Kg	140	98	U	98	U	98	U	98	U	20000	U	20000	U	20000	U	20000	U	20000	U	20000	U	2000	U
Butyl benzyl phthalate	mg/Kg	14000	110	U	110	U	110	U	110	U	21000	U	21000	U	21000	U	21000	U	21000	U	21000	U	2100	U
Caprolactam	mg/Kg	340000	140	U	140	U	140	U	140	U	29000	U	29000	U	29000	U	29000	U	29000	U	29000	U	2900	U
Carbazole	mg/Kg	96	**500**	J	88	U	**110**	J	**300**	J	18000	U	18000	U	18000	U	18000	U	18000	U	18000	U	1800	U
Chrysene	mg/Kg	230	97	U	97	U	97	U	97	U	19000	U	19000	U	19000	U	19000	U	19000	U	19000	U	1900	U
Dibenzo(a,h)anthracene	mg/Kg	0.2	67	U	67	U	67	U	67	U	13000	U	13000	U	13000	U	13000	U	13000	U	13000	U	1300	U
Dibenzofuran	mg/Kg	--	2700		1100		1300		1300		19000	U	19000	U	19000	U	19000	U	19000	U	19000	U	1900	U
Diethyl phthalate	mg/Kg	550000	92	U	92	U	92	U	92	U	18000	U	18000	U	18000	U	18000	U	18000	U	18000	U	1800	U
Dimethyl phthalate	mg/Kg	--	81	U	81	U	81	U	81	U	16000	U	16000	U	16000	U	16000	U	16000	U	16000	U	1600	U
Di-n-butyl phthalate	mg/Kg	68000	90	U	90	U	90	U	90	U	18000	U	18000	U	18000	U	18000	U	18000	U	18000	U	1800	U
Di-n-octyl phthalate	mg/Kg	27000	87	U	87	U	87	U	87	U	17000	U	17000	U	17000	U	17000	U	17000	U	17000	U	1700	U
Fluoranthene	mg/Kg	24000	480	J	160	J	310	J	280	J	19000	U	19000	U	19000	U	19000	U	19000	U	19000	U	1900	U
Fluorene	mg/Kg	24000	1900		670	J	920	J	820	J	17000	U	17000	U	17000	U	17000	U	17000	U	17000	U	1700	U

TABLE 4-13

ANALYTICAL RESULTS
EAST AND WEST LAGOON SOLID SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	WLWC-01 05/27/08 Primary		WLWC-02 05/27/08 Primary		WLWC-03 05/27/08 Primary		WLWC-04 05/27/08 Primary		ELWC-01 05/28/08 Primary		ELWC-02 05/28/08 Primary		ELWC-03 05/28/08 Primary		ELWC-04 05/28/08 Primary		ELWC-05 05/28/08 Primary		ELWC-06 05/28/08 Primary		ELWC-06 05/28/08 Duplicate	
Semivolatile Organics (Continued)																								
Hexachlorobenzene	mg/Kg	1	82	U	**150**	J	82	U	82	U	16000	U	16000	U	16000	U	16000	U	16000	U	16000	U	**1600**	J
Hexachlorobutadiene	mg/Kg	25	140	U	140	U	140	U	140	U	28000	U	28000	U	28000	U	28000	U	28000	U	28000	U	2800	U
Hexachlorocyclopentadiene	mg/Kg	110	68	U	68	U	68	U	68	U	14000	U	14000	U	14000	U	14000	U	14000	U	14000	U	1400	U
Hexachloroethane	mg/Kg	140	140	U	140	U	140	U	140	U	28000	U	28000	U	28000	U	28000	U	28000	U	28000	U	2800	U
Indeno(1,2,3-cd)pyrene	mg/Kg	2	71	U	71	U	71	U	71	U	14000	U	14000	U	14000	U	14000	U	14000	U	14000	U	1400	U
Isophorone	mg/Kg	2000	130	U	130	U	130	U	130	U	26000	U	26000	U	26000	U	26000	U	26000	U	26000	U	2600	U
Naphthalene	mg/Kg	17	**210000**		**400000**		**330000**		**180000**		**260000**		**430000**		**600000**		**770000**		**400000**		**240000**		**250000**	
Nitrobenzene	mg/Kg	340	94	U	94	U	94	U	94	U	19000	U	19000	U	19000	U	19000	U	19000	U	19000	U	1900	U
N-Nitrosodiphenylamine	mg/Kg	390	110	U	110	U	110	U	110	U	22000	U	22000	U	22000	U	22000	U	22000	U	22000	U	2200	U
N-Nitrosodipropylamine	mg/Kg	0.3	100	U	100	U	100	U	100	U	20000	U	20000	U	20000	U	20000	U	20000	U	20000	U	2000	U
Pentachlorophenol	mg/Kg	10	69	U	69	U	69	U	69	U	14000	U	14000	U	14000	U	14000	U	14000	U	14000	U	1400	U
Phenanthrene	mg/Kg	300000	2300		740	J	1400		1300		19000	U	19000	U	19000	U	19000	U	19000	U	19000	U	1900	U
Phenol	mg/Kg	210000	440	J	640	J	110	U	570	J	22000	U	22000	U	22000	U	22000	U	22000	U	22000	U	2200	U
Pyrene	mg/Kg	18000	170	J	110	U	120	J	120	J	22000	U	22000	U	22000	U	22000	U	22000	U	22000	U	2200	U
Polychlorinated Dioxins/Furans																								
1,2,3,4,6,7,8-HpCDD	ug/kg	--	1.4	U	1.8	U	0.69	U	9.8	U	15		0.64	U	8.8	J	0.45	U	410	J	410	J	460	J
1,2,3,4,6,7,8-HpCDF	ug/kg	--	280	E	440	E	4600		2400		510	E	13		59		16		32000	E	13000	E	32000	E
1,2,3,4,7,8,9-HpCDF	ug/kg	--	9.7	J	17		130	J	73	U	17		0.39	U	3.1	U	0.54	U	1100		480	J	1200	
1,2,3,4,7,8-HxCDD	ug/kg	--	0.37	U	0.24	U	0.14	U	3.8	U	3.4	U	1.7	U	1.9	U	0.28	U	62	U	100	U	99	U
1,2,3,4,7,8-HxCDF	ug/kg	--	96		220	E	1500		740		180		4.7	U	26		5.4	J	12000	E	4800		12000	E
1,2,3,6,7,8-HxCDD	ug/kg	--	0.46	U	0.89	U	0.27	U	4.1	U	6.5	U	0.5	U	5.2	U	0.32	U	110	U	190	U	250	U
1,2,3,6,7,8-HxCDF	ug/kg	--	12		29		170	J	88	U	22		0.57	U	3.7	U	0.63	U	1400		580		1500	
1,2,3,7,8,9-HxCDD	ug/kg	--	0.3	U	0.45	U	0.26	U	3.2	U	3.7	U	0.47	U	3.2	U	0.2	U	68	U	100	U	130	U
1,2,3,7,8,9-HxCDF	ug/kg	--	2.9	U	6.7	J	41	U	20	U	7.1	J	0.15	U	2.7	U	0.12	U	330	J	170	U	410	J
1,2,3,7,8-PCDD	ug/kg	--	0.35	U	0.39	U	0.36	U	0.35	U	0.35	U	0.72	U	2.1	U	0.7	U	120	U	210	U	250	U
1,2,3,7,8-PCDF	ug/kg	--	5	J	14		15	U	9.1	U	3	U	0.2	U	0.73	U	0.37	U	140	U	92	U	160	U
2,3,4,6,7,8-HxCDF	ug/kg	--	4.3	U	8.2	J	65	U	33	U	8.3	J	0.26	U	3.2	U	0.3	U	430	J	200	U	460	J
2,3,4,7,8-PCDF	ug/kg	--	7.5	J	23		120	U	56	U	28		0.63	U	8	J	1	U	1100		730		1400	
2,3,7,8-TCDD	ug/kg	--	0.046	U	0.091	U	0.16	U	1.8	U	3.7	U	0.38	U	1.6	U	0.6	U	15	U	34	U	48	U
2,3,7,8-TCDF	ug/kg	--	5.6		17		87	J	42	U	43		1.7	U	30		1.5	U	1000		880		1500	
OCDD	ug/kg	--	4.8	U	3.6	U	39	U	41	U	61		1.4	U	11	J	1.8	U	3300		840	J	930	J
OCDF	ug/kg	--	470	E	590	E	9200		4000		900	E	22		90		27		61000	E	23000	E	61000	E
Total HpCDD	ug/kg	--	1.5	U	2.1	U	0.8	U	13	U	28		0.64	U	19		0.46	U	800		750		890	
Total HpCDF	ug/kg	--	320		500		5000		2600		580		13		68		16		36000		15000		37000	
Total HxCDD	ug/kg	--	1.3	U	2.4	U	0.8	U	11	U	33		1.3	U	21		0.98	U	270		830		1900	
Total HxCDF	ug/kg	--	170		400		2500		1100		350		4.7	U	55		5.4		21000		8600		23000	
Total PeCDD	ug/kg	--	1	U	1.8	U	0.65	U	7.1	U	27		4.3	U	79		6.8	U	380	U	2000		2000	
Total PeCDF	ug/kg	--	62		190		500		150		250		2	U	82		2.3	U	8600		5200		10000	
Total TCDD	ug/kg	--	3	U	2.9		3.5	U	76	U	40		3	U	32		3.1		1000		3300		2700	
Total TCDF	ug/kg	--	29		90		350		89		290		1.7	U	140		1.5	U	4600		5000		7900	
Polychlorinated Dioxins/Furans (2,3,7,8 Equivalents)																								
1,2,3,4,6,7,8-HpCDD	0.01	--	--		--		--		--		1.5E-01		--		8.8E-02		--		4.1E+00		4.1E+00		4.6E+00	
1,2,3,4,6,7,8-HpCDF	0.01	--	2.8E+00		4.4E+00		4.6E+01		2.4E+01		5.1E+00		1.3E-01		5.9E-01		1.6E-01		3.2E+02		1.3E+02		3.2E+02	
1,2,3,4,7,8,9-HpCDF	0.01	--	9.7E-02		1.7E-01		1.3E+00		--		--		--		--		--		--		--		1.2E+01	
1,2,3,4,7,8-HxCDD	0.10	--	--		--		--		--		1.7E+00		--		--		--		1.1E+02		4.8E+01		--	
1,2,3,4,7,8-HxCDF	0.10	--	9.6E+00		2.2E+01		1.5E+02		7.4E+01		--		--		--		--		--		--		1.2E+03	
1,2,3,6,7,8-HxCDD	0.10	--	--		--		--		--		1.8E+01		--		2.6E+00		5.4E-01		1.2E+03		4.8E+02		--	
1,2,3,6,7,8-HxCDF	0.10	--	1.2E+00		2.9E+00		1.7E+01		--		2.2E+00		--		--		--		1.4E+02		5.8E+01		1.5E+02	
1,2,3,7,8,9-HxCDD	0.10	--	--		--		--		--		--		--		--		--		--		--		--	
1,2,3,7,8,9-HxCDF	0.10	--	--		6.7E-01		--		--		7.1E-01		--		--		--		3.3E+01		--		4.1E+01	
1,2,3,7,8-PCDD	1.00	--	--		--		--		--		--		--		--		--		--		--		--	

TABLE 4-13

ANALYTICAL RESULTS
EAST AND WEST LAGOON SOLID SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	WLWC-01 05/27/08 Primary		WLWC-02 05/27/08 Primary		WLWC-03 05/27/08 Primary		WLWC-04 05/27/08 Primary		ELWC-01 05/28/08 Primary		ELWC-02 05/28/08 Primary		ELWC-03 05/28/08 Primary		ELWC-04 05/28/08 Primary		ELWC-05 05/28/08 Primary		ELWC-06 05/28/08 Primary		ELWC-06 05/28/08 Duplicate	
Polychlorinated Dioxins/Furans (2,3,7,8 Equivalents) (Continued)																								
1,2,3,7,8-PCDF	0.05	--	2.5E-01		7.0E-01		--		--		--		--		--		--		--		--		--	
2,3,4,6,7,8-HxCDF	0.10	--	--		8.2E-01		--		--		8.3E-01		--		--		--		4.3E+01		--		4.6E+01	
2,3,4,7,8-PCDF	0.50	--	3.8E+00		1.2E+01		--		--		1.4E+01		--		4.0E+00		--		5.5E+02		3.7E+02		7.0E+02	
2,3,7,8-TCDD	1.00	--	--		--		--		--		--		--		--		--		--		--		--	
2,3,7,8-TCDF	0.10	--	5.6E-01		1.7E+00		8.7E+00		--		4.3E+00		--		3.0E+00		--		1.0E+02		8.8E+01		1.5E+02	
OCDD	0.0001	--	--		--		--		--		6.1E-03		--		1.1E-03		--		3.3E-01		8.4E-02		9.3E-02	
OCDF	0.0001	--	4.7E-02		5.9E-02		9.2E-01		4.0E-01		9.0E-02		2.2E-03		9.0E-03		2.7E-03		6.1E+00		2.3E+00		6.1E+00	
Total 2,3,7,8-TCDD Equivalents[2]	ug/Kg	1	**1.8E+01**		**4.5E+01**		**2.2E+02**		**9.8E+01**		**4.7E+01**		1.3E-01		**1.0E+01**		7.0E-01		**2.5E+03**		**1.2E+03**		**2.6E+03**	
Polychlorinated Biphenyls (Aroclors)																								
Aroclor 1016	mg/Kg	1	1.5	U	1.5	U	0.074	U	0.074	U	0.74	U	0.074	U	0.074	U	0.74	U	15	U	7.4	U	3.7	U
Aroclor 1221	mg/Kg	1	1.9	U	1.9	U	0.095	U	0.095	U	0.95	U	0.095	U	0.095	U	0.95	U	19	U	9.5	U	4.8	U
Aroclor 1232	mg/Kg	1	1.7	U	1.7	U	0.086	U	0.086	U	**70**		0.086	U	0.086	U	**200**		**2300**		**6200**		**3100**	
Aroclor 1242	mg/Kg	1	1.6	U	1.6	U	0.081	U	0.081	U	0.81	U	0.081	U	0.081	U	0.81	U	16	U	8.1	U	4.1	U
Aroclor 1248	mg/Kg	1	0.95	U	0.95	U	0.047	U	0.047	U	**18**		0.047	U	0.047	U	**46**		**650**	PG	**1300**		**780**	
Aroclor 1254	mg/Kg	1	1.4	U	1.4	U	0.071	U	0.071	U	0.71	U	0.071	U	0.071	U	0.71	U	14	U	7.1	U	3.6	U
Aroclor 1260	mg/Kg	1	**3.4**	J	**2.5**	JP	0.071	U	0.071	U	0.71	U	0.071	U	0.071	U	0.71	U	14	U	7.1	U	3.6	U
Aroclor 1262	mg/Kg	1	2.2	U	2.2	U	0.11	U	0.11	U	1.1	U	0.11	U	0.11	U	1.1	U	22	U	11	U	5.5	U
Aroclor 1268	mg/Kg	1	1.3	U	1.3	U	0.064	U	0.064	U	0.64	U	0.064	U	0.064	U	0.64	U	13	U	6.4	U	3.2	U
Metals																								
Aluminum	mg/Kg	--	79.6		3200		6220		155		245		141		66		17.1	B	112		246		243	
Antimony	mg/Kg	450	3.2		0.18	U	1.9		2.4		0.092	U	0.8	B	1.4		2.1		2		8.5		12.8	
Arsenic	mg/Kg	19	3.3		3.8		**23.1**		8.3		0.64	B	0.5	B	1.9		5.1		1.7		1.4		1.1	
Barium	mg/Kg	59000	21.2	J	22.5	J	262	J	60.1	J	9.8	BJ	4.2	BJ	9.8	BJ	6.7	BJ	7.3	BJ	9.9	BJ	8	BJ
Beryllium	mg/Kg	140	0.037	B	0.031	U	0.99		0.031	U	0.031	U	0.031	U	0.031	U	0.035	B	0.031	U	0.031	U	0.031	U
Cadmium	mg/Kg	78	0.07	B	0.15	B	1.8		0.25	B	0.36	B	0.047	U	0.047	U	0.047	U	0.047	U	0.047	U	0.047	U
Calcium	mg/Kg	--	140	B	14700		6460		49000		1040		316	B	216	B	321	B	162	B	327	B	289	B
Chromium[3]	mg/Kg	120000	60.9		3220		496		36.8		305		51.5		51.9		8.1		122		428		355	
Chromium (Hexavalent)[3]	mg/Kg	20	**65.4**		**564**		12.1		15.9		**278**		14.9		8		0.4	U	**45.8**		**129**		**126**	
Cobalt	mg/Kg	590	1.6	B	11.9		6		0.5	B	0.92	B	0.55	B	0.15	B	0.21	B	0.88	B	0.69	B	0.64	B
Copper	mg/Kg	45000	197		98.6		45.8		31.8		26.7		54.5		49.1		146		38.8		66		40.4	
Iron	mg/Kg	--	580		9050		8000		482		2310		417		155		91.6		3660		1320		1690	
Lead	mg/Kg	800	289		537		**2350**		681		7.3		206		799		**875**		138		282		172	
Magnesium	mg/Kg	--	102	B	2950		1310		156	B	390	B	519		183	B	59	B	214	B	226	B	215	B
Manganese	mg/Kg	5900	2.6		66.2		42.6		4.2		5.9		3.6		1.5		0.86	B	18.8		6.9		8.7	
Mercury	mg/Kg	65	15		14.6		13.4		38.8		9.5		10.1		5.1		15.8		6.4		14.3		11.2	
Nickel	mg/Kg	23000	77.2		113		87.1		18.3		3	B	23.4		4.1		17.2		18.9		15.7		11.2	
Potassium	mg/Kg	--	50	U	50	U	587		51.3	B	64.3	B	50	U	50	U	50	U	50	U	50	U	50	U
Selenium	mg/Kg	5700	1.7		1.8		1		1.1		0.29	U	0.77		1.5		1.4		0.45	B	0.81		0.64	
Silver	mg/Kg	5700	0.12	BJ	0.26	BJ	0.17	BJ	0.095	BJ	0.069	BJ	0.096	BJ	0.18	BJ	0.16	BJ	0.2	BJ	0.24	BJ	0.2	BJ
Sodium	mg/Kg	--	345	B	843		91.1	B	304	B	1330		916		417	B	557		1210		410	B	388	B
Thallium	mg/Kg	79	0.64	U	0.32	U	0.32	U	0.32	U	0.32	U	0.64	U	0.64	U	0.64	U	0.32	U	0.32	U	0.32	U
Vanadium	mg/Kg	1100	3	B	85		28.5		3.4	B	15.2		2.7	B	1.9	B	1.1	B	2.7	B	4.1	B	3.6	B
Zinc	mg/Kg	110000	7.8		58.3		310		20.8		165		5.2		2.7		2.6		7.3		5.9		5.5	
Toxicity Characteristic Leaching Procedure[4]																								
1,1-Dichloroethene	mg/L	0.7	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	--	
1,2-Dichloroethane	mg/L	0.5	0.026	U	0.026	U	0.026	U	0.026	U	0.026	U	0.026	U	0.026	U	0.026	U	0.026	U	0.026	U	--	
1,4-Dichlorobenzene	mg/L	7.5	0.82		0.45		0.0048	J	0.078		0.02	J	0.0098	J	0.022	J	0.018	J	**9.7**		0.26		--	
2,4,5-Trichlorophenol	mg/L	400	0.0041	U	0.0041	U	0.0041	U	0.0041	U	0.0041	U	0.0041	U	0.0041	U	0.0041	U	0.0041	U	0.0041	U	--	
2,4,6-Trichlorophenol	mg/L	2	0.041	J	0.0026	U	0.018	J	0.1		0.0026	U	0.0026	U	0.0026	U	0.0026	U	0.0026	U	0.0026	U	--	
2,4-Dinitrotoluene	mg/L	0.13	0.0028	U	0.0028	U	0.0028	U	0.0028	U	0.0028	U	0.0028	U	0.0028	U	0.0028	U	0.0028	U	0.0028	U	--	

TABLE 4-13

ANALYTICAL RESULTS
EAST AND WEST LAGOON SOLID SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	WLWC-01 05/27/08 Primary		WLWC-02 05/27/08 Primary		WLWC-03 05/27/08 Primary		WLWC-04 05/27/08 Primary		ELWC-01 05/28/08 Primary		ELWC-02 05/28/08 Primary		ELWC-03 05/28/08 Primary		ELWC-04 05/28/08 Primary		ELWC-05 05/28/08 Primary		ELWC-06 05/28/08 Primary		ELWC-06 05/28/08 Duplicate	
Toxicity Characteristic Leaching Procedure[4](Continued)																								
2-Butanone	mg/L	200	0.029	U	0.029	U	0.029	U	0.029	U	0.029	U	0.029	U	0.029	U	0.029	U	0.029	U	0.029	U	--	
Benzene	mg/L	0.5	0.033	U	0.033	U	0.033	U	0.073	J	0.033	U	0.033	U	0.088	J	0.033	U	0.053	J	0.033	U	--	
Carbon Tetrachloride	mg/L	0.5	0.037	U	0.037	U	0.037	U	0.037	U	0.037	U	0.037	U	0.037	U	0.037	U	0.037	U	0.037	U	--	
Chlorobenzene	mg/L	100	0.43		0.18	J	0.028	U	0.028	U	0.028	U	0.028	U	0.028	U	0.028	U	0.83		0.1	J	--	
Chloroform	mg/L	6	0.031	U	0.031	U	0.031	U	0.031	U	0.031	U	0.031	U	0.031	U	0.031	U	0.031	U	0.031	U	--	
Cresols	mg/L	200	27		50		7.8		48		55		53		110		31		7.3		22		--	
Hexachlorobenzene	mg/L	0.13	0.0082	J	0.0049	U	0.0049	U	0.0049	U	0.0049	U	0.0049	U	0.0049	U	0.0076	J	**0.22**		**0.14**		--	
Hexachlorobutadiene	mg/L	0.5	0.0033	U	0.0033	U	0.0033	U	0.0033	U	0.0033	U	0.0033	U	0.0033	U	0.0033	U	0.0033	U	0.0033	U	--	
Hexachloroethane	mg/L	3	0.0036	U	0.0036	U	0.0036	U	0.0036	U	0.0036	U	0.0036	U	0.0036	U	0.0036	U	0.0036	U	0.0036	U	--	
Nitrobenzene	mg/L	2	0.0056	U	0.0056	U	0.0056	U	0.0056	U	0.0056	U	0.0056	U	0.0056	U	0.0056	U	0.0056	U	0.0056	U	--	
Pentachlorophenol	mg/L	100	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	--	
Pyridine	mg/L	5	0.011	U	0.011	U	0.011	U	0.011	U	0.011	U	0.011	U	0.011	U	0.011	U	0.011	U	0.011	U	--	
Tetrachloroethene	mg/L	0.7	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	--	
Trichloroethene	mg/L	0.5	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	--	
Vinyl chloride	mg/L	0.2	0.038	U	0.038	U	0.038	U	0.038	U	0.038	U	0.038	U	0.038	U	0.038	U	0.038	U	0.038	U	--	
Arsenic	mg/L	5	0.14	B	0.18	B	0.17	B	0.25	B	0.27	B	0.24	B	0.23	B	0.19	B	0.18	B	0.18	B	--	
Barium	mg/L	100	0.034	BJ	0.087	BJ	0.14	BJ	0.1	BJ	0.089	BJ	0.048	BJ	0.076	BJ	0.03	BJ	0.052	BJ	0.058	BJ	--	
Cadmium	mg/L	1	0.0012	U	0.0012	U	0.0012	U	0.0012	U	0.0012	U	0.0012	U	0.0012	U	0.0012	U	0.0012	U	0.0012	U	--	
Chromium	mg/L	5	0.29	B	**6.5**		0.12	B	0.18	B	**6.3**		0.63		0.35	B	0.16	B	0.57		0.63		--	
Lead	mg/L	5	0.61		0.51		0.95	E	3.1		4.4		4.9		**11.2**		3.5		0.83		1.1		--	
Mercury	mg/L	0.2	0.00034		0.000055	U	0.000055	U	0.000055	U	0.000055	U	0.00014	B	0.000055	U	0.00031		0.0013		0.00025		--	
Selenium	mg/L	1	0.018	B	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	--	
Silver	mg/L	5	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0026	B	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	--	
RCRA Characteristics and Indicators																								
Corrosivity	SU	2<pH<12.5	3.03		6.66		5.85		2.41		2.84		**1.46**		**1.46**		**1.36**		**1.92**		2		--	
Cyanide	mg/Kg	23000	10.8	B	10	B	18.6	B	103		9.6	U	9.6	U	9.6	U	9.6	U	9.6	U	9.6	U	9.6	U
Total Sulfide (Reactivity)	mg/Kg	--	520		616		1320		360		472		368		456		552		120		344		--	
Ignitability	none	--	No		No		No		No		No		No		No		No		No		No		--	
Oxidation Reduction Potential	mV		334		321		340		370		354		374		388		382		415		364		--	
British Thermal Unit Contect	BTU/lb		--		--		--		--		3600		--		11000		12000		4000		4700		--	

TABLE 4-13

ANALYTICAL RESULTS
EAST AND WEST LAGOON SOLID SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Notes:

1. Criteria are the NJDEP Non-Residential Direct Contact Soil Remediation Standards (online at www.nj.gov/dep/srp/regs/rs/rs appendix1.pdf) unless noted otherwise.
2. The 1 ug/kg benchmark for 2,3,7,8-TCDD equivalents is the United States Environmental Protection Agency residential guideline per OSWER Directive 9200.4-26.
3. Nonpromulgated criteria for total (trivalent) and hexavalent chromium determined by chromium workgroup (www.state.nj.us/dep/srp/guidance). Criterion for residential exposure to trivalent chromium was used for total chromium.
4. Toxicity Characteristic Leaching Procedure limits as specified in 40 Code of Federal Regulations 261.24 - available at electronic CFR website (ecfr.gpoaccess.gov).

Exceedances are shown in bold, shaded typeface. Data qualifiers are as follows:

B - Inorganic results. Result is an estimate. Quantitation between the detection limit and the reporting limit.
E - Organic results. Result is an estimated concentration. Outside linear calibration range.
J - Organic results. Result is an estimate. Quantitated between the detection limit and the reporting limit.
J - Inorganic results. Result is an estimated concentration. Quantitated below the reporting limit.
P - Organic results. Percent difference between initial and confirmation column results is greater than 40%.
U - Not detected at the detection limit indicated.
-- - Not analyzed or criteria unavailable.

TABLE 4-14

ANALYTICAL RESULTS
LAGOON SURFACE WATER SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Discharge Limits NJDEP BGR Permit[1]		ELWS-01 04/25/08 East Lagoon Primary		ELWS-02 04/25/08 East Lagoon Primary		ELWS-02D 04/25/08 East Lagoon Duplicate		WLWS-01 04/25/08 West Lagoon Primary		WLWS-02 04/25/08 West Lagoon Primary	
		Monthly Average	Daily Maximum										
Volatile Organics													
1,1,1-Trichloroethane	ug/L	21	54	0.79	U	0.79	U	0.79	U	0.79	U	0.79	U
1,1,2,2-Tetrachloroethane	ug/L	--	10	0.63	U	0.63	U	0.63	U	0.63	U	0.63	U
1,1,2-Trichloroethane	ug/L	21	54	0.79	U	0.79	U	0.79	U	0.79	U	0.79	U
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	--	--	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U
1,1-Dichloroethane	ug/L	22	59	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene	ug/L	26	25	0.87	U	0.87	U	0.87	U	0.87	U	0.87	U
1,2,4-Trichlorobenzene	ug/L	68	140	5.3		13		12		0.74	J	1.4	J
1,2-Dibromoethane	ug/L	--	--	0.64	U	0.64	U	0.64	U	0.64	U	0.64	U
1,2-Dichlorobenzene	ug/L	77	163	0.65	U	0.65	U	0.65	U	0.65	U	0.65	U
1,2-Dichloroethane	ug/L	68	211	0.64	U	0.64	U	0.64	U	0.64	U	0.64	U
1,2-Dichloropropane	ug/L	153	230	0.67	U	0.67	U	0.67	U	0.67	U	0.67	U
1,3-Dichlorobenzene	ug/L	31	44	6.4		16		17		2.5	J	6.4	
1,4-Dichlorobenzene	ug/L	--	28	12		**44**		**45**		1.6	J	11	
2-Butanone	ug/L	--	--	0.73	U	0.73	U	0.73	U	0.73	U	0.73	U
2-Hexanone	ug/L	--	--	0.45	U	0.45	U	0.45	U	0.45	U	0.45	U
4-Methyl-2-pentanone	ug/L	--	--	0.46	U	0.46	U	0.46	U	0.46	U	0.46	U
Acetone	ug/L	--	--	5	U	5	U	5	U	5	U	5	U
Benzene	ug/L	37	136	0.81	U	0.81	U	0.81	U	0.81	U	0.81	U
Bromodichloromethane	ug/L	--	12	0.58	U	0.58	U	0.58	U	0.58	U	0.58	U
Bromoform	ug/L	29	58	0.37	U	0.37	U	0.37	U	0.37	U	0.37	U
Bromomethane	ug/L	20	40	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U
Carbon disulfide	ug/L	--	--	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
Carbon tetrachloride	ug/L	9	--	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U
Chlorobenzene	ug/L	15	28	0.71	U	1.4	J	1.4	J	1.8	J	5.2	
Chloroethane	ug/L	104	268	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
Chloroform	ug/L	21	46	0.78	U	0.78	U	0.78	U	0.78	U	0.78	U
Chloromethane	ug/L	86	190	0.87	U	0.87	U	0.87	U	0.87	U	0.87	U
cis-1,2-Dichloroethene	ug/L	--	--	1	U	1	U	1	U	1	U	1	U
cis-1,3-Dichloropropene	ug/L	29	44	0.79	U	0.79	U	0.79	U	0.79	U	0.79	U
Cyclohexane	ug/L	--	--	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
Dibromochloropropane	ug/L	--	--	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U
Dibromochloromethane	ug/L	--	14	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dichlorodifluoromethane	ug/L	--	--	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	ug/L	32	108	0.58	U	0.58	U	0.58	U	0.58	U	0.58	U

TABLE 4-14

ANALYTICAL RESULTS
LAGOON SURFACE WATER SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Discharge Limits NJDEP BGR Permit[1]		ELWS-01 04/25/08 East Lagoon Primary		ELWS-02 04/25/08 East Lagoon Primary		ELWS-02D 04/25/08 East Lagoon Duplicate		WLWS-01 04/25/08 West Lagoon Primary		WLWS-02 04/25/08 West Lagoon Primary	
		Monthly Average	Daily Maximum										
Volatile Organics (Continued)													
Isopropylbenzene	ug/L	--	--	0.72	U	0.72	U	0.72	U	0.72	U	0.72	U
Methyl Acetate	ug/L	--	--	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U
Methylcyclohexane	ug/L	--	--	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
Methylene chloride	ug/L	40	89	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U
Methyltert-butylether	ug/L	--	--	0.77	U	0.77	U	0.77	U	0.77	U	0.77	U
Styrene	ug/L	--	--	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
Tetrachloroethene	ug/L	22	56	0.57	U	0.57	U	0.57	U	0.57	U	0.57	U
Toluene	ug/L	26	80	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
trans-1,2-Dichloroethene	ug/L	21	54	0.9	U	0.9	U	0.9	U	0.9	U	0.9	U
trans-1,3-Dichloropropene	ug/L	29	44	0.57	U	0.57	U	0.57	U	0.57	U	0.57	U
Trichloroethene	ug/L	21	54	0.88	U	0.88	U	0.88	U	0.88	U	0.88	U
Trichlorofluoromethane	ug/L	--	--	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
Vinyl chloride	ug/L	104	268	0.94	U	0.94	U	0.94	U	0.94	U	0.94	U
Xylene (total)	ug/L	--	--	2.4	U	2.4	U	2.4	U	2.4	U	2.4	U
Semivolatile Organics													
1,1'-Biphenyl	ug/L	--	--	2	J	2.4	J	2.4	J	0.67	U	0.66	U
2,2'-oxybis(1-chloropropane)	ug/L	301	757	0.27	U	0.29	U	0.28	U	0.29	U	0.29	U
2,4,5-Trichlorophenol	ug/L	--	--	0.66	U	0.7	U	0.68	U	0.69	U	0.69	U
2,4,6-Trichlorophenol	ug/L	--	20	0.6	U	0.64	U	0.62	U	0.63	U	0.62	U
2,4-Dichlorophenol	ug/L	39	112	0.51	U	0.54	U	0.91	J	0.54	U	0.53	U
2,4-Dimethylphenol	ug/L	18	36	0.55	U	24		19		5.1	J	8	J
2,4-Dinitrophenol	ug/L	71	123	14	U	14	U	14	U	14	U	14	U
2,4-Dinitrotoluene	ug/L	--	18	0.48	U	0.51	U	0.49	U	0.5	U	0.5	U
2,6-Dinitrotoluene	ug/L	255	641	0.54	U	0.57	U	0.55	U	0.56	U	0.56	U
2-Chloronaphthalene	ug/L	--	--	0.47	U	0.5	U	0.48	U	0.49	U	0.49	U
2-Chlorophenol	ug/L	31	98	0.48	U	0.51	U	0.49	U	0.5	U	0.5	U
2-Methylnaphthalene	ug/L	--	--	0.63	J	0.52	U	0.51	U	0.52	U	0.55	J
2-Methylphenol	ug/L	--	--	13		15		14		8.5	J	9.1	J
2-Nitroaniline	ug/L	--	--	0.5	U	0.53	U	0.52	U	0.53	U	0.52	U
2-Nitrophenol	ug/L	41	69	0.57	U	0.61	U	0.59	U	0.6	U	0.59	U
3,3'-Dichlorobenzidine	ug/L	--	60	0.43	U	0.46	U	0.45	U	0.45	U	0.45	U
3-Nitroaniline	ug/L	--	--	0.43	U	0.45	U	0.44	U	0.45	U	0.44	U
4,6-Dinitro-2-methylphenol	ug/L	--	--	15	U	16	U	15	U	16	U	16	U
4-Bromophenylphenyl ether	ug/L	--	--	0.53	U	0.56	U	0.54	U	0.55	U	0.55	U

TABLE 4-14

ANALYTICAL RESULTS
LAGOON SURFACE WATER SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Discharge Limits NJDEP BGR Permit[1]		ELWS-01 04/25/08 East Lagoon Primary		ELWS-02 04/25/08 East Lagoon Primary		ELWS-02D 04/25/08 East Lagoon Duplicate		WLWS-01 04/25/08 West Lagoon Primary		WLWS-02 04/25/08 West Lagoon Primary	
		Monthly Average	Daily Maximum										
Semivolatile Organics (Continued)													
4-Chloro-3-methylphenol	ug/L	--	--	0.63	U	0.66	U	0.64	U	0.66	U	0.65	U
4-Chloroaniline	ug/L	--	--	0.49	U	0.52	U	0.5	U	0.51	U	0.51	U
4-Chlorophenyl phenyl ether	ug/L	--	--	0.45	U	0.48	U	0.46	U	0.47	U	0.47	U
4-Methylphenol	ug/L	--	--	27		50		47		14		18	
4-Nitroaniline	ug/L	--	--	0.27	U	0.28	U	0.28	U	0.28	U	0.28	U
4-Nitrophenol	ug/L	72	124	0.74	U	0.79	U	0.76	U	0.78	U	0.77	U
Acenaphthene	ug/L	--	--	2.5	J	1.7	J	1.5	J	3.9	J	2.6	J
Acenaphthylene	ug/L	--	--	0.53	J	0.64	J	0.5	U	0.51	U	0.51	U
Acetophenone	ug/L	--	--	2.2	J	2.3	J	2.3	J	0.51	U	0.51	U
Anthracene	ug/L	22	59	0.85	J	1	J	1.7	J	0.56	U	0.56	U
Atrazine	ug/L	--	--	0.41	U	0.44	U	0.42	U	0.43	U	0.43	U
Benzaldehyde	ug/L	--	--	0.57	U	0.61	U	0.59	U	0.6	U	0.6	U
Benzo(a)anthracene	ug/L	--	10	0.44	U	0.46	U	0.45	U	0.46	U	0.45	U
Benzo(a)pyrene	ug/L	--	20	0.46	U	0.49	U	0.48	U	0.49	U	0.48	U
Benzo(b)fluoranthene	ug/L	--	10	0.33	U	0.35	U	0.34	U	0.35	U	0.34	U
Benzo(ghi)perylene	ug/L	--	--	0.29	U	0.31	U	0.3	U	0.3	U	0.3	U
Benzo(k)fluoranthene	ug/L	--	20	0.42	U	0.44	U	0.43	U	0.44	U	0.43	U
Bis(2-chloroethoxy)methane	ug/L	--	--	1.3	U	1.4	U	1.3	U	1.4	U	1.3	U
Bis(2-chloroethyl)ether	ug/L	--	10	0.49	U	0.52	U	0.5	U	0.51	U	0.51	U
Bis(2-ethylhexyl)phthalate	ug/L	59	118	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U
Butyl benzyl phthalate	ug/L	--	24	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U
Caprolactam	ug/L	--	--	2	U	2.1	U	2	U	2.1	U	2.1	U
Carbazole	ug/L	--	--	0.55	U	0.59	U	0.57	U	0.58	U	0.57	U
Chrysene	ug/L	--	20	0.38	U	0.4	U	0.39	U	0.39	U	0.39	U
Dibenzo(a,h)anthracene	ug/L	--	20	0.37	U	0.39	U	0.38	U	0.39	U	0.38	U
Dibenzofuran	ug/L	--	--	0.57	U	0.6	U	1.2	J	0.59	U	0.59	U
Diethyl phthalate	ug/L	81	203	2.6	U	2.7	U	2.7	U	2.7	U	2.7	U
Dimethyl phthalate	ug/L	19	47	0.45	U	0.47	U	0.46	U	0.47	U	0.46	U
Di-n-butyl phthalate	ug/L	27	57	0.49	U	0.52	U	0.51	U	0.51	U	0.51	U
Di-n-octyl phthalate	ug/L	--	--	0.45	U	0.48	U	0.46	U	0.47	U	0.47	U
Fluoranthene	ug/L	25	68	0.52	U	0.57	J	0.54	U	0.55	U	0.54	U
Fluorene	ug/L	22	59	0.79	J	0.61	U	0.98	J	0.68	J	0.6	U
Hexachlorobenzene	ug/L	--	10	0.46	U	0.49	U	0.47	U	0.48	U	0.48	U
Hexachlorobutadiene	ug/L	20	49	0.4	U	0.42	U	0.41	U	0.42	U	0.41	U

TABLE 4-14

ANALYTICAL RESULTS
LAGOON SURFACE WATER SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Discharge Limits NJDEP BGR Permit[1]		ELWS-01 04/25/08 East Lagoon Primary		ELWS-02 04/25/08 East Lagoon Primary		ELWS-02D 04/25/08 East Lagoon Duplicate		WLWS-01 04/25/08 West Lagoon Primary		WLWS-02 04/25/08 West Lagoon Primary	
		Monthly Average	Daily Maximum										
Semivolatile Organics (Continued)													
Hexachlorocyclopentadiene	ug/L	--	1800	0.85	U	0.9	U	0.87	U	0.89	U	0.88	U
Hexachloroethane	ug/L	21	54	0.46	U	0.49	U	0.47	U	0.48	U	0.48	U
Indeno(1,2,3-cd)pyrene	ug/L	--	20	0.5	U	0.53	U	0.52	U	0.53	U	0.52	U
Isophorone	ug/L	--	20	0.5	U	0.53	U	0.52	U	0.53	U	0.52	U
Naphthalene	ug/L	--	--	6.6	J	2.3	J	2	J	8.4	J	7.3	J
Nitrobenzene	ug/L	27	69	0.68	U	0.72	U	0.7	U	0.71	U	0.7	U
N-Nitrosodiphenylamine	ug/L	--	20	0.52	U	0.55	U	0.53	U	0.54	U	0.54	U
N-Nitrosodipropylamine	ug/L	--	--	0.63	U	0.67	U	0.65	U	0.66	U	0.65	U
Pentachlorophenol	ug/L	--	30	0.88	U	0.93	U	0.9	U	0.92	U	0.91	U
Phenanthrene	ug/L	22	59	0.85	J	1.1	J	0.9	J	0.61	U	0.61	U
Phenol	ug/L	15	26	24		24		21		22		20	
Pyrene	ug/L	25	67	0.6	U	0.63	U	0.62	U	0.63	U	0.62	U
Polychlorinated Biphenyls (Aroclors)													
Aroclor 1016	ug/L	--	0.05	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Aroclor 1221	ug/L	--	0.05	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Aroclor 1232	ug/L	--	0.05	0.12	U	0.12	U	0.12	U	0.12	U	0.12	U
Aroclor 1242	ug/L	--	0.05	0.077	U	0.077	U	0.076	U	0.077	U	0.077	U
Aroclor 1248	ug/L	--	0.05	0.095	U	0.095	U	0.093	U	0.094	U	0.095	U
Aroclor 1254	ug/L	--	0.05	0.095	U	0.095	U	0.093	U	0.094	U	0.095	U
Aroclor 1260	ug/L	--	0.05	0.056	U	0.056	U	0.055	U	0.056	U	0.056	U
Aroclor 1262	ug/L	--	0.05	0.086	U	0.086	U	0.084	U	0.085	U	0.086	U
Aroclor 1268	ug/L	--	0.05	0.11	U	0.11	U	0.11	U	0.11	U	0.11	U
Pesticides													
4,4'-DDD	ug/L	--	0.06	0.008	U	0.008	U	0.0079	U	0.008	U	0.008	U
4,4'-DDE	ug/L	--	0.04	0.007	U	0.007	U	0.0069	U	0.007	U	0.007	U
4,4'-DDT	ug/L	--	0.04	0.014	U	0.014	U	0.014	U	0.014	U	0.014	U
Aldrin	ug/L	--	0.04	0.012	U	0.012	U	0.011	U	0.011	U	0.012	U
alpha-BHC	ug/L	--	0.02	0.016	U	0.016	U	0.015	U	0.016	U	0.016	U
alpha-Chlordane	ug/L	--	0.20	0.012	U	0.012	U	0.011	U	0.012	U	0.012	U
beta-BHC	ug/L	0.46	0.92	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U
delta-BHC	ug/L	--	--	0.022	JP	0.047	JP	0.049	J	0.0097	U	0.0098	U
Dieldrin	ug/L	--	0.03	0.0083	U	0.0083	U	0.0082	U	0.0082	U	0.0083	U
Endosulfan I	ug/L	--	0.02	0.0077	U	0.0077	U	0.0076	U	0.0076	U	0.0077	U
Endosulfan II	ug/L	--	0.04	0.016	U	0.016	U	0.015	U	0.016	U	0.016	U

TABLE 4-14

ANALYTICAL RESULTS
LAGOON SURFACE WATER SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Discharge Limits NJDEP BGR Permit[1]		ELWS-01 04/25/08 East Lagoon Primary		ELWS-02 04/25/08 East Lagoon Primary		ELWS-02D 04/25/08 East Lagoon Duplicate		WLWS-01 04/25/08 West Lagoon Primary		WLWS-02 04/25/08 West Lagoon Primary	
		Monthly Average	Daily Maximum										
Pesticides (Continued)													
Endosulfan sulfate	ug/L	2	4	0.017	U	0.017	U	0.016	U	0.016	U	0.017	U
Endrin	ug/L	--	0.04	0.0094	JP	0.01	JP	0.011	J	0.0079	U	0.018	JP
Endrin aldehyde	ug/L	0.81	1.62	0.013	U	0.013	U	0.012	U	0.012	U	0.013	U
Endrin ketone	ug/L	--	--	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
gamma-Chlordane	ug/L	--	--	0.0079	U	0.0079	U	0.0077	U	0.0078	U	0.0079	U
Heptachlor	ug/L	--	0.02	0.014	U	0.014	U	0.014	U	0.014	U	0.014	U
Heptachlor epoxide	ug/L	--	0.40	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Lindane	ug/L	--	0.03	0.016	U	0.016	U	0.015	U	0.016	U	0.016	U
Methoxychlor	ug/L	--	--	0.019	U	0.13		0.12		0.019	U	0.019	U
Toxaphene	ug/L	--	1	0.43	U	0.43	U	0.42	U	0.42	U	0.43	U
Metals													
Aluminum	ug/L	--	--	63	BJ	71.2	BJ	61.7	B	45.1	BJ	54.3	BJ
Antimony	ug/L	--	--	2.9	U	2.9	U	2.9	U	2.9	U	2.9	U
Arsenic	ug/L	50	100	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U
Barium	ug/L	--	--	15.9	B	14.7	B	15	B	9	B	9.2	B
Beryllium	ug/L	--	--	0.32	U	0.32	U	0.32	U	0.32	U	0.32	U
Cadmium	ug/L	50	100	0.23	U	0.23	U	0.23	U	0.23	U	0.23	U
Calcium	ug/L	--	--	47500	J	46600	J	47600	J	39300	J	40100	J
Chromium	ug/L	50	100	**118**		**115**		**118**		61		61.2	
Chromium (Hexavalent)	ug/L	--	--	10	U	10	U	10	U	10	U	10	U
Cobalt	ug/L	--	--	1.9	B	1.9	B	1.5	B	0.83	B	0.87	B
Copper	ug/L	50	100	6.7	B	6.5	B	6.6	B	3.5	B	3.7	B
Iron	ug/L	--	--	1240		1280		1300		279		319	
Lead	ug/L	50	100	57.5		56.3		57.7		5.9		7.2	
Magnesium	ug/L	--	--	72900	J	71400	J	72800	J	49900	J	50500	J
Manganese	ug/L	--	--	112		113		115		38.1		39.2	
Mercury	ug/L	--	1	0.24		0.23		0.22		0.074	B	0.085	B
Nickel	ug/L	50	100	17.8	B	17.9	B	18	B	9.8	B	9.6	B
Potassium	ug/L	--	--	2680	B	2580	B	2620	B	1710	B	1710	B
Selenium	ug/L	50	100	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Silver	ug/L	25	50	0.78	B	0.59	U	0.59	U	0.69	B	0.59	U
Sodium	ug/L	--	--	48100		46600		47200		32600		32800	
Thallium	ug/L	--	--	3.1	U	3.1	U	3.1	U	3.1	U	3.1	U
Vanadium	ug/L	--	--	17.6	B	16.4	B	17.6	B	12.1	B	11.9	B

TABLE 4-14

ANALYTICAL RESULTS
LAGOON SURFACE WATER SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Discharge Limits NJDEP BGR Permit[1]		ELWS-01 04/25/08 East Lagoon Primary		ELWS-02 04/25/08 East Lagoon Primary		ELWS-02D 04/25/08 East Lagoon Duplicate		WLWS-01 04/25/08 West Lagoon Primary		WLWS-02 04/25/08 West Lagoon Primary	
		Monthly Average	Daily Maximum										
Metals (Continued)													
Zinc	ug/L	100	200	6.6	B	7.4	B	6.5	B	7.9	B	3.6	B
Indicator Parameters													
Biochemical Oxygen Demand	mg/L	--	--	78		74.9		69.8		33.1		32	
Total Organic Carbon	mg/L	--	20	**138**	J	**134**	J	NA		**68.2**	J	**69.6**	J
Chemical Oxygen Demand (COD)	mg/L	--	--	411		397		NA		187		192	
Cyanide	mg/L	100	200	2	B	1.7	U	NA		1.7	U	1.7	U
Ferrous Iron	mg/L	--	--	0.15		0.13		0.18		0.1	U	0.1	U
Oil & Grease (Hexane Extractable)	mg/L	--	--	0.54	U	0.54	U	NA		0.54	U	0.52	U
Residue, filterable	mg/L	--	--	823		888		NA		565		522	
Residue, non-filterable	mg/L	--	--	4	U	4	U	NA		4	U	4	U
Total Alkalinity	mg/L	--	--	213	J	207	J	NA		172	J	174	J
Total Sulfide	mg/L	--	--	1.2	U	1.2	U	NA		1.2	U	1.2	U

Notes:

1. Criteria are as specified in the NJDEP Statewide Final NJPDES General Remediation Clean-up Permit (GRC) dated April 21, 2005. NJPDES Permit No. NJ0155438 P

Potential exceedances of discharge limits are highlighted. Results which exceed both the monthly average and daily maximum are shown in bold, shaded typeface. Results which exceed the monthly average but not the daily maximum are shown in shaded typeface. Results which exceed the daily maximum but not the monthly average (i.e., when a daily maximum limit does not exist) are shown in bold typeface.

Data qualifiers are as follows:

B - Inorganic results. Result is an estimate. Quantitation between the detection limit and the reporting limit.
J - Organic results. Result is an estimate. Quantitated between the detection limit and the reporting limit.
J - Inorganic results. Result is an estimated concentration. Quantitated below the reporting limit.
P - Organic results. Percent difference between initial and confirmation column results is greater than 40%.
U - Not detected at the detection limit indicated.
-- - Not analyzed or criteria unavailable.

TABLE 4-15

ANALYTICAL RESULTS
SOUTH DITCH SOFT SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	SDWC-1 05/21/08 0.5-1.0 ft Primary		SDWC-2 05/21/08 0.5-1.0 ft Primary		SDWC-3 05/20/08 0.5-1.0 ft Primary		SDWC-4 05/20/08 0.5-1.0 ft Primary		SDWC-5 05/20/08 0.5-1.0 ft Primary		SDWC-5 05/20/08 0.5-1.0 ft Duplicate	
Volatile Organics														
1,1,1-Trichloroethane	mg/Kg	4200	0.25	U	1.7	U	0.15	U	0.0015	U	0.13	U	0.00098	U
1,1,2,2-Tetrachloroethane	mg/Kg	3	0.28	U	1.9	U	0.16	U	0.0022	U	0.14	U	0.0015	U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg	--	0.26	U	1.8	U	0.18	U	0.0033	U	0.15	U	0.0022	U
1,1,2-Trichloroethane	mg/Kg	6	0.3	U	2.1	U	0.15	U	0.0026	U	0.13	U	0.0017	U
1,1-Dichloroethane	mg/Kg	24	0.24	U	1.7	U	0.14	U	0.0018	U	0.12	U	0.0013	U
1,1-Dichloroethene	mg/Kg	150	0.29	U	2	U	0.17	U	0.0026	U	0.15	U	0.0017	U
1,2,4-Trichlorobenzene	mg/Kg	820	0.48	J	1.8	U	0.15	U	0.16		4.3		0.12	
1,2-Dibromoethane	mg/Kg	0.04	0.25	U	1.8	U	0.15	U	0.0027	U	0.13	U	0.0017	U
1,2-Dichlorobenzene	mg/Kg	59000	20		48		0.18	J	0.04		0.4	J	0.045	
1,2-Dichloroethane	mg/Kg	3	0.27	U	1.9	U	0.16	U	0.0019	U	0.14	U	0.0012	U
1,2-Dichloropropane	mg/Kg	5	0.27	U	1.9	U	0.16	U	0.0017	U	0.14	U	0.0011	U
1,3-Dichlorobenzene	mg/Kg	59000	16		5.9	J	1		0.033		0.22	J	0.042	
1,4-Dichlorobenzene	mg/Kg	13	**19**		**43**		1.3		0.047		0.45	J	0.059	
2-Butanone	mg/Kg	44000	0.24	U	1.7	U	0.14	U	0.0027	U	0.12	U	0.0018	U
2-Hexanone	mg/Kg	--	0.19	U	1.3	U	0.12	U	0.0021	U	0.098	U	0.0014	U
4-Methyl-2-pentanone	mg/Kg	--	0.21	U	1.5	U	0.13	U	0.002	U	0.11	U	0.0013	U
Acetone	mg/Kg	--	0.29	U	2	U	0.17	U	0.016	U	0.15	U	0.01	U
Benzene	mg/Kg	5	0.25	U	**5.5**	J	0.15	U	0.0021	U	0.13	U	0.0014	U
Bromodichloromethane	mg/Kg	3	0.24	U	1.7	U	0.14	U	0.0017	U	0.12	U	0.0011	U
Bromoform	mg/Kg	280	0.25	U	1.7	U	0.15	U	0.0014	U	0.13	U	0.00089	U
Bromomethane	mg/Kg	59	0.31	U	2.2	U	0.18	U	0.0023	U	0.16	U	0.0015	U
Carbon disulfide	mg/Kg	110000	0.3	U	2.1	U	0.18	U	0.0016	U	0.15	U	0.001	U
Carbon tetrachloride	mg/Kg	2	0.22	U	1.5	U	0.13	U	0.0014	U	0.11	U	0.0009	U
Chlorobenzene	mg/Kg	7400	3.7		140		13		0.008	J	0.2	J	0.032	
Chloroethane	mg/Kg	1100	0.35	U	2.4	U	0.21	U	0.0048	U	0.18	U	0.0031	U
Chloroform	mg/Kg	2	0.26	U	1.8	U	0.15	U	0.0018	U	0.13	U	0.0012	U
Chloromethane	mg/Kg	12	0.27	U	1.9	U	0.16	U	0.0026	U	0.14	U	0.0017	U
cis-1,2-Dichloroethene	mg/Kg	560	0.26	U	1.8	U	0.16	U	0.0022	U	0.13	U	0.0014	U
cis-1,3-Dichloropropene	mg/Kg	7	0.22	U	1.5	U	0.13	U	0.0021	U	0.11	U	0.0014	U
Cyclohexane	mg/Kg	--	0.24	U	1.7	U	0.15	U	0.0012	U	0.12	U	0.00075	U
Dibromochloromethane	mg/Kg	8	0.23	U	1.6	U	0.13	U	0.0022	U	0.12	U	0.0014	U
Dibromochloropropane	mg/Kg	--	0.21	U	1.4	U	0.12	U	0.0023	U	0.1	U	0.0015	U
Dichlorodifluoromethane	mg/Kg	230000	0.31	U	2.2	U	0.19	U	0.0021	U	0.16	U	0.0013	U
Ethylbenzene	mg/Kg	110000	0.29	U	2	U	0.17	U	0.002	U	0.15	U	0.0019	J
Isopropylbenzene	mg/Kg	--	0.26	U	1.8	U	0.16	U	0.0021	U	0.13	U	0.0014	U
Methyl acetate	mg/Kg	--	0.26	U	1.8	U	0.15	U	0.0028	U	0.13	U	0.0018	U
Methylcyclohexane	mg/Kg	--	0.27	U	1.9	U	0.16	U	0.0023	U	0.14	U	0.0015	U
Methylene chloride	mg/Kg	97	0.19	U	1.3	U	0.11	U	0.0021	U	0.095	U	0.0014	U
Methyltert-butylether	mg/Kg	320	0.23	U	1.6	U	0.13	U	0.0023	U	0.11	U	0.0015	U
Styrene	mg/Kg	260	0.27	U	1.9	U	0.16	U	0.0017	U	0.14	U	0.0011	U
Tetrachloroethene	mg/Kg	5	0.32	U	2.2	U	0.19	U	0.0021	U	0.16	U	0.0014	U
Toluene	mg/Kg	91000	0.19	U	1.3	U	0.12	U	0.0023	U	0.098	U	0.0015	U
trans-1,2-Dichloroethene	mg/Kg	720	0.28	U	2	U	0.17	U	0.0019	U	0.14	U	0.0012	U
trans-1,3-Dichloropropene	mg/Kg	7	0.21	U	1.5	U	0.13	U	0.0019	U	0.11	U	0.0012	U
Trichloroethene	mg/Kg	20	0.27	U	1.9	U	0.16	U	0.002	U	0.14	U	0.0013	U
Trichlorofluoromethane	mg/Kg	340000	0.4	U	2.8	U	0.24	U	0.0029	U	0.2	U	0.0019	U
Vinyl chloride	mg/Kg	2	0.27	U	1.9	U	0.16	U	0.0015	U	0.14	U	0.00095	U
Xylene (total)	mg/Kg	170000	0.86	U	6	U	0.51	U	0.007	U	0.44	U	0.0078	J
Semivolatile Organics														
1,1'-Biphenyl	mg/Kg	34000	3300	E	0.67	U	0.053	U	0.15	J	0.065	U	0.21	J
2,2'-oxybis(1-chloropropane)	mg/Kg	--	2.4	U	0.73	U	0.057	U	0.044	U	0.071	U	0.046	U
2,4,5-Trichlorophenol	mg/Kg	68000	3.4	U	1	U	0.079	U	0.061	U	0.097	U	0.063	U
2,4,6-Trichlorophenol	mg/Kg	74	3.3	U	0.99	U	0.077	U	0.06	U	0.095	U	0.061	U
2,4-Dichlorophenol	mg/Kg	2100	1.2	U	0.36	U	0.028	U	0.022	U	0.035	U	0.023	U
2,4-Dimethylphenol	mg/Kg	14000	1.7	U	0.53	U	0.041	U	0.032	U	0.051	U	0.047	J
2,4-Dinitrophenol	mg/Kg	1400	48	U	14	U	1.1	U	0.87	U	1.4	U	0.9	U
2,4-Dinitrotoluene	mg/Kg	3	2.1	U	0.63	U	0.049	U	0.038	U	0.061	U	0.039	U
2,6-Dinitrotoluene	mg/Kg	3	2.6	U	0.79	U	0.061	U	0.047	U	0.076	U	0.049	U
2-Chloronaphthalene	mg/Kg	--	2.3	U	0.71	U	0.055	U	0.043	U	0.068	U	0.044	U
2-Chlorophenol	mg/Kg	2200	2	U	0.62	U	0.048	U	0.037	U	0.059	U	0.038	U
2-Methylnaphthalene	mg/Kg	2400	5	J	0.68	U	0.2	J	0.59	J	0.14	J	0.87	
2-Methylphenol	mg/Kg	3400	2.5	U	0.77	U	0.06	U	0.046	U	0.074	U	0.048	U
2-Nitroaniline	mg/Kg	23000	2.4	U	0.74	U	0.057	U	0.044	U	0.071	U	0.046	U
2-Nitrophenol	mg/Kg	--	3.2	U	0.97	U	0.076	U	0.059	U	0.094	U	0.061	U
3,3'-Dichlorobenzidine	mg/Kg	4	9.1	U	2.8	U	0.21	U	0.17	U	0.26	U	0.17	U
3-Nitroaniline	mg/Kg	--	3.5	U	1	U	0.082	U	0.063	U	0.1	U	0.065	U
4,6-Dinitro-2-methylphenol	mg/Kg	68	29	U	8.6	U	0.67	U	0.52	U	0.83	U	0.54	U
4-Bromophenylphenyl ether	mg/Kg	--	1.8	U	0.55	U	0.043	U	0.033	U	0.053	U	0.034	U
4-Chloro-3-methylphenol	mg/Kg	--	2.5	U	0.75	U	0.058	U	0.045	U	0.072	U	0.046	U
4-Chloroaniline	mg/Kg	--	3.5	U	1.1	U	0.082	U	0.064	U	0.1	U	0.066	U
4-Chlorophenyl phenyl ether	mg/Kg	--	2	U	0.61	U	0.047	U	0.037	U	0.058	U	0.038	U
4-Methylphenol	mg/Kg	340	2.5	U	0.77	U	0.06	U	0.046	U	0.28	J	0.048	U
4-Nitroaniline	mg/Kg	--	1.7	U	0.51	U	0.04	U	0.031	U	0.049	U	0.032	U
4-Nitrophenol	mg/Kg	--	3.2	U	0.95	U	0.074	U	0.057	U	0.092	U	0.059	U
Acenaphthene	mg/Kg	37000	2.1	U	4.8	J	0.56	J	0.52	J	0.093	J	0.73	J
Acenaphthylene	mg/Kg	300000	2.4	U	1.5	J	0.3	J	0.16	J	0.17	J	0.29	J
Acetophenone	mg/Kg	5	2.5	U	0.74	U	0.058	U	0.045	U	0.071	U	0.046	U
Anthracene	mg/Kg	30000	13	J	19		0.28	J	0.22	J	0.11	J	0.35	J
Atrazine	mg/Kg	2400	2.8	U	0.84	U	0.066	U	0.051	U	0.081	U	0.052	U
Benzaldehyde	mg/Kg	68000	4.3	U	1.3	U	0.1	U	0.078	U	0.12	U	0.081	U
Benzo(a)anthracene	mg/Kg	2	**27**	J	**45**		0.96		0.36	J	0.37	J	0.67	J
Benzo(a)pyrene	mg/Kg	0.2	**26**	J	**38**		**1.6**		**0.43**	J	**0.44**	J	**0.77**	
Benzo(b)fluoranthene	mg/Kg	2	**40**		**58**		**2.4**		0.81		0.78	J	1.3	
Benzo(ghi)perylene	mg/Kg	30000	16	J	20		1.6		0.41	J	0.4	J	0.71	J
Benzo(k)fluoranthene	mg/Kg	23	1.3	U	0.39	U	0.031	U	0.024	U	0.038	U	0.024	U

TABLE 4-15

ANALYTICAL RESULTS
SOUTH DITCH SOFT SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	SDWC-1 05/21/08 0.5-1.0 ft Primary		SDWC-2 05/21/08 0.5-1.0 ft Primary		SDWC-3 05/20/08 0.5-1.0 ft Primary		SDWC-4 05/20/08 0.5-1.0 ft Primary		SDWC-5 05/20/08 0.5-1.0 ft Primary		SDWC-5 05/20/08 0.5-1.0 ft Duplicate	
Semivolatile Organics (Continued)														
Bis(2-chloroethoxy)methane	mg/Kg	--	1.9	U	0.57	U	0.044	U	0.034	U	0.055	U	0.035	U
Bis(2-chloroethyl)ether	mg/Kg	2	0.91	U	0.28	U	0.021	U	0.017	U	0.026	U	0.017	U
Bis(2-ethylhexyl)phthalate	mg/Kg	140	3.1	U	0.94	U	1.1		0.057	U	0.09	U	0.058	U
Butyl benzyl phthalate	mg/Kg	14000	3.3	U	0.98	U	0.077	U	0.059	U	0.094	U	0.061	U
Caprolactam	mg/Kg	340000	7.7	U	2.3	U	0.18	U	0.14	U	0.22	U	0.14	U
Carbazole	mg/Kg	96	7.2	J	3.6	J	0.039	U	0.08	J	0.088	J	0.13	J
Chrysene	mg/Kg	230	24	J	39		1.1		0.43	J	0.37	J	0.63	J
Dibenzo(a,h)anthracene	mg/Kg	0.2	**2.9**	J	**6.1**	J	**0.39**	J	0.084	J	0.075	U	0.074	J
Dibenzofuran	mg/Kg	--	49		3.3	J	0.3	J	0.35	J	0.15	J	0.53	J
Diethyl phthalate	mg/Kg	550000	3.6	U	1.1	U	0.085	U	0.066	U	0.1	U	0.068	U
Dimethyl phthalate	mg/Kg	--	2.3	U	0.69	U	0.054	U	0.042	U	0.067	U	0.043	U
Di-n-butyl phthalate	mg/Kg	68000	6.7	U	2	U	0.16	U	0.12	U	0.19	U	0.13	U
Di-n-octyl phthalate	mg/Kg	27000	2.8	U	0.85	U	0.066	U	0.051	U	0.082	U	0.053	U
Fluoranthene	mg/Kg	24000	56		87		1.4		0.65	J	0.74	J	1.1	
Fluorene	mg/Kg	24000	8.7	J	5.1	J	0.22	J	0.24	J	0.057	U	0.36	J
Hexachlorobenzene	mg/Kg	1	2.4	U	0.74	U	0.057	U	0.044	U	0.071	U	0.046	U
Hexachlorobutadiene	mg/Kg	25	2.5	U	0.75	U	0.058	U	0.045	U	0.072	U	0.047	U
Hexachlorocyclopentadiene	mg/Kg	110	1.9	U	0.56	U	0.044	U	0.034	U	0.054	U	0.035	U
Hexachloroethane	mg/Kg	140	1.8	U	0.55	U	0.043	U	0.033	U	0.053	U	0.034	U
Indeno(1,2,3-cd)pyrene	mg/Kg	2	**14**	J	**19**		1.3		0.34	J	0.34	J	0.56	J
Isophorone	mg/Kg	2000	2.3	U	0.68	U	0.053	U	0.041	U	0.065	U	0.042	U
Naphthalene	mg/Kg	17	**38**	J	0.59	U	0.57	J	0.93		0.44	J	1.4	
Nitrobenzene	mg/Kg	340	1	U	0.3	U	0.024	U	0.018	U	0.029	U	0.019	U
N-Nitrosodiphenylamine	mg/Kg	390	2.2	U	0.66	U	0.052	U	0.04	U	0.064	U	0.041	U
N-Nitrosodipropylamine	mg/Kg	0.3	0.99	U	0.3	U	0.023	U	0.018	U	0.029	U	0.019	U
Pentachlorophenol	mg/Kg	10	3	U	0.91	U	0.071	U	0.055	U	0.088	U	0.057	U
Phenanthrene	mg/Kg	300000	53		57		0.78	J	0.56	J	0.6	J	0.86	
Phenol	mg/Kg	210000	2.4	U	0.74	U	0.058	U	0.045	U	0.45	J	0.046	U
Pyrene	mg/Kg	18000	49		79		1.2		0.6	J	0.62	J	0.94	
Polychlorinated Dioxins and Furans														
1,2,3,4,6,7,8-HpCDD	ug/Kg	--	1.2		0.17		0.14		0.13		0.051		0.24	
1,2,3,4,6,7,8-HpCDF	ug/Kg	--	14	B	10	B	11	B	18	B	2.4	B	34	B
1,2,3,4,7,8,9-HpCDF	ug/Kg	--	0.48		0.33		0.41		0.53		0.073		1	
1,2,3,4,7,8-HxCDD	ug/Kg	--	0.034	J	0.008	J	0.012	J	0.007	QJ	0.0032	J	0.016	
1,2,3,4,7,8-HxCDF	ug/Kg	--	4.6	B	2.9	QB	4.9	QB	6.2	QB	0.84	QB	13	B
1,2,3,6,7,8-HxCDD	ug/Kg	--	0.073	J	0.021		0.025		0.032		0.008	J	0.063	
1,2,3,6,7,8-HxCDF	ug/Kg	--	0.78	B	0.45	B	0.8	B	0.87	B	0.12	B	1.7	B
1,2,3,7,8,9-HxCDD	ug/Kg	--	0.033	J	0.0086	J	0.011	J	0.0068	J	0.0034	J	0.015	
1,2,3,7,8,9-HxCDF	ug/Kg	--	0.12	U	0.0069	J	0.014	J	0.11	U	0.018	U	0.11	U
1,2,3,7,8-PCDD	ug/Kg	--	0.035	J	0.01	J	0.011	J	0.0098	J	0.0051	J	0.021	
1,2,3,7,8-PCDF	ug/Kg	--	0.15		0.088	Q	0.21		0.079		0.015	J	0.17	Q
2,3,4,6,7,8-HxCDF	ug/Kg	--	0.28		0.18		0.24		0.3		0.046		0.57	
2,3,4,7,8-PCDF	ug/Kg	--	0.4		0.22	Q	0.44	Q	0.48		0.068		1	
2,3,7,8-TCDD	ug/Kg	--	0.03	Q	0.007	Q	0.0058		0.0033		0.0035	QJ	0.0071	
2,3,7,8-TCDF	ug/Kg	--	0.066	Q	0.089		0.049		0.019		0.0084		0.047	
OCDD	ug/Kg	--	15	B	2	B	0.84	B	3.2	B	0.48	B	1.8	B
OCDF	ug/Kg	--	25	B	20	BE	16	BE	40	B	4.2	B	79	B
Total HpCDD	ug/Kg	--	2.6	B	0.39	B	0.27	B	0.27	B	0.11	B	0.5	B
Total HpCDF	ug/Kg	--	17	QB	12	QB	13	QB	21	QB	2.7	QB	39	QB
Total HxCDD	ug/Kg	--	0.91	Q	0.2	Q	0.17	Q	0.19	Q	0.056	QJ	0.41	Q
Total HxCDF	ug/Kg	--	11	QB	6.9	QB	11	QB	13	B	1.8	QB	27	QB
Total PeCDD	ug/Kg	--	1	Q	0.2	Q	0.21	Q	0.37	Q	0.17	Q	0.84	Q
Total PeCDF	ug/Kg	--	5.7	Q	3.4	Q	5.6	Q	5.3	Q	0.85	Q	11	Q
Total TCDD	ug/Kg	--	0.58	Q	0.2	Q	0.14	Q	0.2	Q	0.094	Q	0.42	Q
Total TCDF	ug/Kg	--	5.1	Q	2.5	Q	4	Q	3.1	QE	0.61	Q	6.4	QE
Polychlorinated Dioxins/Furans (2,3,7,8 Equivalents)														
1,2,3,4,6,7,8-HpCDD	0.01	--	1.2E-02		1.7E-03		1.4E-03		1.3E-03		5.1E-04		2.4E-03	
1,2,3,4,6,7,8-HpCDF	0.01	--	1.4E-01		1.0E-01		1.1E-01		1.8E-01		2.4E-02		3.4E-01	
1,2,3,4,7,8,9-HpCDF	0.01	--	7.3E-04		2.1E-04		2.5E-04		3.2E-04		8.0E-05		6.3E-04	
1,2,3,4,7,8-HxCDD	0.10	--	4.8E-02		3.3E-02		4.1E-02		5.3E-02		7.3E-03		1.0E-01	
1,2,3,4,7,8-HxCDF	0.10	--	3.4E-03		8.0E-04		1.2E-03		--		3.2E-04		1.6E-03	
1,2,3,6,7,8-HxCDD	0.10	--	4.6E-01		--		--		--		--		1.3E+00	
1,2,3,6,7,8-HxCDF	0.10	--	7.8E-02		4.5E-02		8.0E-02		8.7E-02		1.2E-02		1.7E-01	
1,2,3,7,8,9-HxCDD	0.10	--	3.3E-03		8.6E-04		1.1E-03		6.8E-04		3.4E-04		1.5E-03	
1,2,3,7,8,9-HxCDF	0.10	--	--		6.9E-04		1.4E-03		--		--		--	
1,2,3,7,8-PCDD	1.00	--	3.5E-02		1.0E-02		1.1E-02		9.8E-03		5.1E-03		2.1E-02	
1,2,3,7,8-PCDF	0.05	--	7.5E-03		--		1.1E-02		4.0E-03		7.5E-04		--	
2,3,4,6,7,8-HxCDF	0.10	--	2.8E-02		1.8E-02		2.4E-02		3.0E-02		4.6E-03		5.7E-02	
2,3,4,7,8-PCDF	0.50	--	2.0E-01		--		--		2.4E-01		3.4E-02		5.0E-01	
2,3,7,8-TCDD	1.00	--	--		--		5.8E-03		3.3E-03		--		7.1E-03	
2,3,7,8-TCDF	0.10	--	--		8.9E-03		4.9E-03		1.9E-03		8.4E-04		4.7E-03	
OCDD	0.0001	--	1.5E-03		2.0E-04		8.4E-05		3.2E-04		4.8E-05		1.8E-04	
OCDF	0.0001	--	2.5E-03		2.0E-03		1.6E-03		4.0E-03		4.2E-04		7.9E-03	
Total 2,3,7,8-TCDD Equivalents[2]	ug/Kg	1	**1.0E+00**		2.2E-01		2.9E-01		6.2E-01		9.0E-02		**2.5E+00**	
Polychlorinated Biphenyls (Aroclors)														
Aroclor 1016	mg/Kg	1	**2.5**		0.33	PG	0.0072	U	0.0056	U	0.0088	U	0.0057	U
Aroclor 1221	mg/Kg	1	0.016	U	0.0078	U	0.0092	U	0.0071	U	0.011	U	0.0073	U
Aroclor 1232	mg/Kg	1	0.014	U	0.007	U	0.25		0.16		0.094	PG	0.25	
Aroclor 1242	mg/Kg	1	0.013	U	0.0067	U	0.0079	U	0.0061	U	0.0096	U	0.0062	U
Aroclor 1248	mg/Kg	1	0.0077	U	0.0039	U	0.0046	U	0.0035	U	0.0056	U	0.0036	U
Aroclor 1254	mg/Kg	1	**3.3**		0.0058	U	0.0069	U	0.0053	U	0.0084	U	0.0054	U
Aroclor 1260	mg/Kg	1	0.012	U	**2.2**		0.1		0.033	J	0.023	J	0.057	
Aroclor 1262	mg/Kg	1	0.018	U	0.009	U	0.011	U	0.0082	U	0.013	U	0.0084	U
Aroclor 1268	mg/Kg	1	0.01	U	0.0053	U	0.0062	U	0.0048	U	0.0076	U	0.0049	U

TABLE 4-15

ANALYTICAL RESULTS
SOUTH DITCH SOFT SOIL SAMPLES
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	SDWC-1 05/21/08 0.5-1.0 ft Primary		SDWC-2 05/21/08 0.5-1.0 ft Primary		SDWC-3 05/20/08 0.5-1.0 ft Primary		SDWC-4 05/20/08 0.5-1.0 ft Primary		SDWC-5 05/20/08 0.5-1.0 ft Primary		SDWC-5 05/20/08 0.5-1.0 ft Duplicate	
Metals														
Aluminum	mg/Kg	--	28600	J	5330	J	11300	J	1710	J	12500	J	1750	J
Antimony	mg/Kg	450	27.2		5.4		2.2	B	0.21	U	0.33	U	0.21	U
Arsenic	mg/Kg	19	17.9		10.1		7.8		2.8		7.4		3.2	
Barium	mg/Kg	59000	600	J	126	J	265	J	203	J	342	J	224	J
Beryllium	mg/Kg	140	0.52	B	0.3	B	0.09	U	0.069	U	0.43	B	0.071	U
Cadmium	mg/Kg	78	3.9		1.2		2		0.42	B	0.86	B	0.39	B
Calcium	mg/Kg	--	84200		7270		166000		268000		154000		291000	
Chromium[3]	mg/Kg	120000	10400		1020		8700		1030		4920		999	
Chromium (Hexavalent)[3]	mg/Kg	20	0.4	U	16.9		**29.5**		13		**24.3**		9.2	
Cobalt	mg/Kg	590	24.2	B	5.3	B	15.8		6	B	15.7	B	6.1	B
Copper	mg/Kg	45000	213		103		88.8		66.8		24.2		67.8	
Iron	mg/Kg	--	71200	J	36100	J	27000	J	7870	J	54400	J	7810	J
Lead	mg/Kg	800	**8440**	J	750	J	**7170**	J	214	J	86	J	220	J
Magnesium	mg/Kg	--	6010		2470		5710		18500		71700		19900	
Manganese	mg/Kg	5900	596		412		631		395		597		432	
Mercury	mg/Kg	65	2.5		1.1		1.6		3.1		0.88		3.6	
Nickel	mg/Kg	23000	107		19.3		87.5		113		56.6		118	
Potassium	mg/Kg	--	755	B	564	B	276	B	127	B	366	B	134	B
Selenium	mg/Kg	5700	2.2	B	0.78	B	0.83	U	0.65	U	1	U	0.66	U
Silver	mg/Kg	5700	2.4		0.6	B	1.1	B	0.3	B	0.72	B	0.31	B
Sodium	mg/Kg	--	3660		457	B	1780		1090	B	2000		1210	
Thallium	mg/Kg	79	4.5	B	0.79	U	2.5	B	0.72	U	1.6	B	0.74	U
Vanadium	mg/Kg	1100	375		60.3		423		56.1		118		58.3	
Zinc	mg/Kg	110000	3840		502		933		133		162		126	
Toxicity Characteristic Leaching Procedure[4]														
1,1-Dichloroethene	mg/L	0.7	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	--	
1,2-Dichloroethane	mg/L	0.5	0.026	U	0.026	U	0.026	U	0.026	U	0.026	U	--	
1,4-Dichlorobenzene	mg/L	7.5	1		0.69		0.0046	U	0.0054	J	0.0046	U	--	
2,4,5-Trichlorophenol	mg/L	400	0.0041	U	0.0041	U	0.0041	U	0.0041	U	0.0041	U	--	
2,4,6-Trichlorophenol	mg/L	2	0.0026	U	0.0026	U	0.0026	U	0.0026	U	0.0026	U	--	
2,4-Dinitrotoluene	mg/L	0.13	0.0028	U	0.0028	U	0.0028	U	0.0028	U	0.0028	U	--	
2-Butanone	mg/L	200	0.033	U	0.029	U	0.029	U	0.029	U	0.029	U	--	
Benzene	mg/L	0.5	0.037	U	0.069	J	0.033	U	0.033	U	0.033	U	--	
Carbon Tetrachloride	mg/L	0.5	0.037	U	0.037	U	0.037	U	0.037	U	0.037	U	--	
Chlorobenzene	mg/L	100	0.13	J	2.8		0.18	J	0.028	U	0.028	U	--	
Chloroform	mg/L	6	0.029	U	0.029	U	0.031	U	0.031	U	0.031	U	--	
Cresols	mg/L	200	0.0089	U	0.0089	U	0.0089	U	0.0089	U	0.015	J	--	
Hexachlorobenzene	mg/L	0.13	0.0049	U	0.0049	U	0.0049	U	0.0049	U	0.0049	U	--	
Hexachlorobutadiene	mg/L	0.5	0.0033	U	0.0033	U	0.0033	U	0.0033	U	0.0033	U	--	
Hexachloroethane	mg/L	3	0.0036	U	0.0036	U	0.0036	U	0.0036	U	0.0036	U	--	
Nitrobenzene	mg/L	2	0.0056	U	0.0056	U	0.0056	U	0.0056	U	0.0056	U	--	
Pentachlorophenol	mg/L	100	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	--	
Pyridine	mg/L	5	0.011	U	0.011	U	0.011	U	0.011	U	0.011	U	--	
Tetrachloroethene	mg/L	0.7	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	--	
Trichloroethene	mg/L	0.5	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	--	
Vinyl chloride	mg/L	0.2	0.038	U	0.038	U	0.038	U	0.038	U	0.038	U	--	
Arsenic	mg/L	5	0.33	B	0.19	BJ	0.2	B	0.14	B	0.16	B	--	
Barium	mg/L	100	0.45	BJ	0.97	B	1.6	B	1	B	0.55	B	--	
Cadmium	mg/L	1	0.0012	U	0.0012	U	0.0012	U	0.0012	U	0.0012	U	--	
Chromium	mg/L	5	**5.9**		0.081	BE	0.025	BJ	0.06	BJ	0.014	BJ	--	
Lead	mg/L	5	0.13	B	0.95	E	**6.6**		0.028	B	0.016	B	--	
Mercury	mg/L	0.2	0.000076	B	0.00006	B	0.000055	U	0.000055	U	0.000055	U	--	
Selenium	mg/L	1	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	--	
Silver	mg/L	5	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	--	
RCRA Characteristics and Indicators														
Corrosivity (pH)	SU	2<pH<12.5	6.68		7.3		7.99		11.83		12.1		11.8	
Cyanide (Reactivity)	mg/Kg	23000	11.6	J	2	J	1.8		2.2		5		1.7	
Total Sulfide (Reactivity)	mg/Kg	--	12900		1220		3160		144		1620		--	
Ignitability	none	--	No		No		No		No		No		No	
Oxidation Reduction Potential	mV	--	107		97		177		139		18		334	
Percent Solids	%	--	20.4		40.7		34.4		44.5		28.2		43.6	

Notes:

1. Criteria are the NJDEP Non-Residential Direct Contact Soil Remediation Standards (online at www.nj.gov/dep/srp/regs/rs/rs_appendix1.pdf) unless noted otherwise.
2. The 1 ug/kg benchmark for 2,3,7,8-TCDD equivalents is the United States Environmental Protection Agency residential guideline per OSWER Directive 9200.4-26.
3. Nonpromulgated criteria for total (trivalent) and hexavalent chromium determined by chromium workgroup, (www.state.nj.us/dep/srp/guidance). Criterion for residential exposure to trivalent chromium was used for total chromium.
4. Toxicity Characteristic Leaching Procedure limits as specified in 40 Code of Federal Regulations 261.24 - available at electronic CFR website (ecfr.gpoaccess.gov).

Exceedances are shown in bold, shaded typeface. Data qualifiers are as follows:

B - Organic results. Analyte detected in associated method blank
B - Inorganic results. Result is an estimate. Quantitation between the detection limit and the reporting limit.
E - Organic results. Result is an estimated concentration. Outside linear calibration range.
E - Inorganic results. Serial dilution was outside quality control limits for this analyte.
J - Organic results. Result is an estimate. Quantitated between the detection limit and the reporting limit.
J - Inorganic results. Result is an estimated concentration. Quantitated below the reporting limit.
P - Organic results. Percent difference between initial and confirmation column results is greater than 40%.
Q - One or more quality control criteria for identification not attained. Value is an Estimated Maximum Possible Concentration. Analyte may be present below the quantitation limit indicated.
U - Not detected at the detection limit indicated.
-- - Not analyzed or criteria unavailable.

TABLE 4-16

ANALYTICAL RESULTS
HACKENSACK RIVER SEDIMENT SAMPLES
STANDARD CHLORINE SITE RIVER FRONTAGE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	HRWC-5 05/09/08 0.0-1.0 ft[2] Primary		HRWC-5 05/09/08 2.0-3.0 ft Primary		HRWC-6 05/02/08 0.0-1.0 ft[2] Primary		HRWC-6 05/02/08 2.0-3.0 ft Primary		HRWC-7 05/02/08 0.0-1.0 ft[2] Primary		HRWC-7 05/02/08 0.0-1.0 ft[2] Duplicate		HRWC-7 05/07/08 2.0-3.0 ft Primary		HRWC-8 05/02/08 0.0-1.0 ft[2] Primary		HRWC-8 05/02/08 2.0-3.0 ft Primary		HRWC-9 04/24/08 0.0-1.0 ft[2] Primary		HRWC-9 04/24/08 2.0-3.0 ft Primary	
Volatile Organics																								
1,1,1-Trichloroethane	mg/Kg	4200	0.0018	U	0.11	U	0.0076	U	0.00097	U	0.0014	U	0.0012	U	0.076	U	0.0018	U	0.007	U	0.0017	U	0.0022	U
1,1,2,2-Tetrachloroethane	mg/Kg	3	0.002	U	0.13	U	0.0085	U	0.0011	U	0.0016	U	0.0014	U	0.085	U	0.002	U	0.0078	U	0.0019	U	0.0024	U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg	--	0.0018	U	0.12	U	0.0092	U	0.0012	U	0.0017	U	0.0015	U	0.092	U	0.0021	U	0.0085	U	0.0021	U	0.0026	U
1,1,2-Trichloroethane	mg/Kg	6	0.0021	U	0.14	U	0.008	U	0.001	U	0.0015	U	0.0013	U	0.08	U	0.0018	U	0.0074	U	0.0018	U	0.0023	U
1,1-Dichloroethane	mg/Kg	24	0.0017	U	0.11	U	0.0073	U	0.00093	U	0.0014	U	0.0012	U	0.073	U	0.0017	U	0.0067	U	0.0017	U	0.0021	U
1,1-Dichloroethene	mg/Kg	150	0.002	U	0.13	U	0.0088	U	0.0011	U	0.0016	U	0.0014	U	0.088	U	0.002	U	0.0081	U	0.002	U	0.0025	U
1,2,4-Trichlorobenzene	mg/Kg	820	0.0018	U	0.11	U	0.0077	U	0.00099	U	0.0014	U	0.0013	U	0.078	U	0.0018	U	0.0071	U	0.0018	U	0.0022	U
1,2-Dibromoethane	mg/Kg	0.04	0.0018	U	0.12	U	0.0078	U	0.00099	U	0.0014	U	0.0013	U	0.078	U	0.0018	U	0.0072	U	0.0018	U	0.0022	U
1,2-Dichlorobenzene	mg/Kg	59000	0.0019	U	0.12	U	0.013	J	0.001	U	0.0015	U	0.0013	U	0.083	U	0.0019	U	0.0076	U	0.0019	U	0.0023	U
1,2-Dichloroethane	mg/Kg	3	0.0019	U	0.12	U	0.0082	U	0.001	U	0.0015	U	0.0013	U	0.082	U	0.0019	U	0.0075	U	0.0019	U	0.0023	U
1,2-Dichloropropane	mg/Kg	5	0.0019	U	0.12	U	0.0083	U	0.0011	U	0.0015	U	0.0014	U	0.083	U	0.0019	U	0.0077	U	0.0019	U	0.0024	U
1,3-Dichlorobenzene	mg/Kg	59000	0.0059	J	0.12	U	0.024	J	0.001	U	0.0015	U	0.0013	U	0.31	J	0.0038	J	0.014	J	0.0018	U	0.0022	U
1,4-Dichlorobenzene	mg/Kg	13	0.021		0.23	J	0.038		0.0011	U	0.0015	U	0.0014	U	2.2		0.027		0.11		0.0019	U	0.0024	U
2-Butanone	mg/Kg	44000	0.016		0.11	U	0.054		0.01		0.0013	U	0.0012	U	0.073	U	0.0067	J	0.011	J	0.0017	U	0.0021	U
2-Hexanone	mg/Kg	--	0.0014	U	0.088	U	0.0059	U	0.00076	U	0.0011	U	0.00097	U	0.059	U	0.0014	U	0.0055	U	0.0013	U	0.0017	U
4-Methyl-2-pentanone	mg/Kg	--	0.0015	U	0.097	U	0.0065	U	0.00083	U	0.0012	U	0.0011	U	0.065	U	0.0015	U	0.006	U	0.0015	U	0.0019	U
Acetone	mg/Kg	--	0.082		0.13	U	0.24		0.051		0.007	U	0.0061	U	0.09	U	0.029	J	0.045	J	0.0085	U	0.011	J
Benzene	mg/Kg	5	0.0018	U	0.12	U	0.0078	U	0.00099	U	0.0014	U	0.0013	U	0.078	U	0.0018	U	0.0072	U	0.0018	U	0.0022	U
Bromodichloromethane	mg/Kg	3	0.0017	U	0.11	U	0.0073	U	0.00093	U	0.0014	U	0.0012	U	0.073	U	0.0017	U	0.0067	U	0.0017	U	0.0021	U
Bromoform	mg/Kg	280	0.0018	U	0.11	U	0.0076	U	0.00097	U	0.0014	U	0.0012	U	0.076	U	0.0018	U	0.007	U	0.0017	U	0.0022	U
Bromomethane	mg/Kg	59	0.0022	U	0.14	U	0.0095	U	0.0012	U	0.0018	U	0.0015	U	0.095	U	0.0022	U	0.0087	U	0.0022	U	0.0027	U
Carbon disulfide	mg/Kg	110000	0.0037	J	0.14	U	0.0092	U	0.002	J	0.0017	U	0.0015	U	0.092	U	0.0021	U	0.0085	U	0.0021	U	0.0091	J
Carbon tetrachloride	mg/Kg	2	0.0015	U	0.099	U	0.0067	U	0.00085	U	0.0012	U	0.0011	U	0.067	U	0.0015	U	0.0062	U	0.0015	U	0.0019	U
Chlorobenzene	mg/Kg	7400	0.0019	U	1.5		0.0083	U	0.0011	U	0.0015	U	0.0014	U	0.23	J	0.0019	U	0.0077	U	0.0019	U	0.0024	U
Chloroethane	mg/Kg	1100	0.0025	U	0.16	U	0.011	U	0.0014	U	0.002	U	0.0018	U	0.11	U	0.0025	U	0.0099	U	0.0024	U	0.0031	U
Chloroform	mg/Kg	2	0.0018	U	0.12	U	0.0079	U	0.001	U	0.0015	U	0.0013	U	0.079	U	0.0018	U	0.0073	U	0.0018	U	0.0023	U
Chloromethane	mg/Kg	12	0.0019	U	0.12	U	0.0083	U	0.0011	U	0.0015	U	0.0014	U	0.083	U	0.0019	U	0.0077	U	0.0019	U	0.0024	U
cis-1,2-Dichloroethene	mg/Kg	560	0.0019	U	0.12	U	0.0081	U	0.001	U	0.0015	U	0.0013	U	0.081	U	0.0019	U	0.0074	U	0.0018	U	0.0023	U
cis-1,3-Dichloropropene	mg/Kg	7	0.0016	U	0.1	U	0.0067	U	0.00086	U	0.0012	U	0.0011	U	0.067	U	0.0016	U	0.0062	U	0.0015	U	0.0019	U
Cyclohexane	mg/Kg	--	0.0017	U	0.11	U	0.0075	U	0.00095	U	0.0014	U	0.0012	U	0.075	U	0.0017	U	0.0069	U	0.0017	U	0.0021	U
Dibromochloromethane	mg/Kg	8	0.0016	U	0.1	U	0.0069	U	0.00088	U	0.0013	U	0.0011	U	0.07	U	0.0016	U	0.0064	U	0.0016	U	0.002	U
Dibromochloropropane	mg/Kg	--	0.0015	U	0.094	U	0.0063	U	0.0008	U	0.0012	U	0.001	U	0.063	U	0.0015	U	0.0058	U	0.0014	U	0.0018	U
Dichlorodifluoromethane	mg/Kg	230000	0.0022	U	0.14	U	0.0096	U	0.0012	U	0.0018	U	0.0016	U	0.096	U	0.0022	U	0.0088	U	0.0022	U	0.0027	U
Ethylbenzene	mg/Kg	110000	0.002	U	0.13	U	0.0088	U	0.0011	U	0.0016	U	0.0014	U	0.089	U	0.002	U	0.0082	U	0.002	U	0.0025	U
Isopropylbenzene	mg/Kg	--	0.0019	U	0.12	U	0.008	U	0.001	U	0.0015	U	0.0013	U	0.08	U	0.0019	U	0.0074	U	0.0018	U	0.0023	U
Methyl acetate	mg/Kg	--	0.0018	U	0.12	U	0.0079	U	0.001	U	0.0015	U	0.0013	U	0.08	U	0.0018	U	0.0073	U	0.0018	U	0.0023	U
Methylcyclohexane	mg/Kg	--	0.0019	U	0.12	U	0.0084	U	0.0011	U	0.0016	U	0.0014	U	0.084	U	0.0019	U	0.0077	U	0.0019	U	0.0024	U
Methylene chloride	mg/Kg	97	0.0018	J	0.085	U	0.0095	B	0.00097	B	0.0024	B	0.0012	J	0.058	U	0.0022	B	0.0058	B	0.0013	U	0.0016	U
Methyltert-butylether	mg/Kg	320	0.0016	U	0.1	U	0.0069	U	0.00088	U	0.0013	U	0.0011	U	0.069	U	0.0016	U	0.0064	U	0.0016	U	0.002	U
Styrene	mg/Kg	260	0.0019	U	0.12	U	0.0083	U	0.0011	U	0.0015	U	0.0014	U	0.084	U	0.0019	U	0.0077	U	0.0019	U	0.0024	U
Tetrachloroethene	mg/Kg	5	0.0022	U	0.14	U	0.0097	U	0.0012	U	0.0018	U	0.0016	U	0.098	U	0.0022	U	0.009	U	0.0022	U	0.0028	U
Toluene	mg/Kg	91000	0.0014	U	0.088	U	0.0059	U	0.00076	U	0.0011	U	0.00097	U	0.059	U	0.0014	U	0.0055	U	0.0013	U	0.0017	U
trans-1,2-Dichloroethene	mg/Kg	720	0.002	U	0.13	U	0.0087	U	0.0011	U	0.0016	U	0.0014	U	0.087	U	0.002	U	0.008	U	0.002	U	0.0025	U
trans-1,3-Dichloropropene	mg/Kg	7	0.0015	U	0.097	U	0.0065	U	0.00083	U	0.0012	U	0.0011	U	0.065	U	0.0015	U	0.006	U	0.0015	U	0.0019	U
Trichloroethene	mg/Kg	20	0.0019	U	0.12	U	0.0084	U	0.0011	U	0.0016	U	0.0014	U	0.084	U	0.0019	U	0.0077	U	0.0019	U	0.0024	U
Trichlorofluoromethane	mg/Kg	340000	0.0028	U	0.18	U	0.012	U	0.0015	U	0.0023	U	0.002	U	0.12	U	0.0028	U	0.011	U	0.0028	U	0.0035	U
Vinyl chloride	mg/Kg	2	0.0019	U	0.12	U	0.0084	U	0.0011	U	0.0016	U	0.0014	U	0.084	U	0.0019	U	0.0077	U	0.0019	U	0.0024	U
Xylene (total)	mg/Kg	170000	0.0061	U	0.39	U	0.026	U	0.0034	U	0.0049	U	0.0043	U	0.26	U	0.0061	U	0.024	U	0.006	U	0.0075	U

TABLE 4-16

ANALYTICAL RESULTS
HACKENSACK RIVER SEDIMENT SAMPLES
STANDARD CHLORINE SITE RIVER FRONTAGE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	HRWC-5 05/09/08 0.0-1.0 ft[2] Primary		HRWC-5 05/09/08 2.0-3.0 ft Primary		HRWC-6 05/02/08 0.0-1.0 ft[2] Primary		HRWC-6 05/02/08 2.0-3.0 ft Primary		HRWC-7 05/02/08 0.0-1.0 ft[2] Primary		HRWC-7 05/02/08 0.0-1.0 ft[2] Duplicate		HRWC-7 05/07/08 2.0-3.0 ft Primary		HRWC-8 05/02/08 0.0-1.0 ft[2] Primary		HRWC-8 05/02/08 2.0-3.0 ft Primary		HRWC-9 04/24/08 0.0-1.0 ft[2] Primary		HRWC-9 04/24/08 2.0-3.0 ft Primary	
Semivolatile Organics																								
1,1'-Biphenyl	mg/Kg	34000	0.095	U	0.56	J	0.38	J	0.063	U	0.073	J	0.034	J	0.056	J	0.11	J	0.13	U	0.024	U	0.041	U
2,2'-oxybis(1-chloropropane)	mg/Kg	--	0.1	U	0.08	U	0.032	U	0.069	U	0.029	U	0.028	U	0.03	U	0.039	U	0.14	U	0.026	U	0.045	U
2,4,5-Trichlorophenol	mg/Kg	68000	0.14	U	0.11	U	0.044	U	0.095	U	0.04	U	0.039	U	0.042	U	0.053	U	0.19	U	0.035	U	0.062	U
2,4,6-Trichlorophenol	mg/Kg	74	0.14	U	0.11	U	0.043	U	0.093	U	0.039	U	0.038	U	0.041	U	0.052	U	0.19	U	0.035	U	0.06	U
2,4-Dichlorophenol	mg/Kg	2100	0.051	U	0.04	U	0.016	U	0.034	U	0.014	U	0.014	U	0.015	U	0.019	U	0.069	U	0.013	U	0.022	U
2,4-Dimethylphenol	mg/Kg	14000	0.074	U	0.057	U	0.03	J	0.18	J	0.021	U	0.024	J	0.056	J	0.028	U	0.099	U	0.018	U	0.15	J
2,4-Dinitrophenol	mg/Kg	1400	2	U	1.6	U	0.64	U	1.4	U	0.57	U	0.56	U	0.6	U	0.76	U	2.7	U	0.51	U	0.88	U
2,4-Dinitrotoluene	mg/Kg	3	0.089	U	0.069	U	0.028	U	0.059	U	0.025	U	0.025	U	0.026	U	0.033	U	0.12	U	0.022	U	0.039	U
2,6-Dinitrotoluene	mg/Kg	3	0.11	U	0.086	U	0.035	U	0.074	U	0.031	U	0.031	U	0.033	U	0.042	U	0.15	U	0.028	U	0.048	U
2-Chloronaphthalene	mg/Kg	--	0.099	U	0.077	U	0.031	U	0.066	U	0.028	U	0.027	U	0.029	U	0.037	U	0.13	U	0.025	U	0.043	U
2-Chlorophenol	mg/Kg	2200	0.086	U	0.067	U	0.027	U	0.058	U	0.024	U	0.024	U	0.026	U	0.032	U	0.12	U	0.022	U	0.038	U
2-Methylnaphthalene	mg/Kg	2400	0.15	J	7.3		1.4		0.07	J	0.14	J	0.073	J	0.29	J	0.48	J	0.13	U	0.03	J	0.041	U
2-Methylphenol	mg/Kg	3400	0.11	U	0.083	U	0.034	U	0.072	U	0.03	U	0.03	U	0.032	U	0.04	U	1	J	0.027	U	0.047	U
2-Nitroaniline	mg/Kg	23000	0.1	U	0.08	U	0.032	U	0.069	U	0.029	U	0.029	U	0.031	U	0.039	U	0.14	U	0.026	U	0.045	U
2-Nitrophenol	mg/Kg	--	0.14	U	0.11	U	0.043	U	0.091	U	0.038	U	0.038	U	0.04	U	0.051	U	0.18	U	0.034	U	0.059	U
3,3'-Dichlorobenzidine	mg/Kg	4	0.39	U	0.3	U	0.12	U	0.26	U	0.11	U	0.11	U	0.11	U	0.15	U	0.52	U	0.096	U	0.17	U
3-Nitroaniline	mg/Kg	--	0.15	U	0.11	U	0.046	U	0.099	U	0.041	U	0.041	U	0.044	U	0.055	U	0.2	U	0.037	U	0.064	U
4,6-Dinitro-2-methylphenol	mg/Kg	68	1.2	U	0.94	U	0.38	U	0.81	U	0.34	U	0.33	U	0.36	U	0.46	U	1.6	U	0.3	U	0.53	U
4-Bromophenylphenyl ether	mg/Kg	--	0.077	U	0.06	U	0.024	U	0.051	U	0.022	U	0.021	U	0.023	U	0.029	U	0.1	U	0.019	U	0.033	U
4-Chloro-3-methylphenol	mg/Kg	--	0.1	U	0.081	U	0.033	U	0.07	U	0.029	U	0.029	U	0.031	U	0.039	U	0.14	U	0.026	U	0.045	U
4-Chloroaniline	mg/Kg	--	0.15	U	0.11	U	0.046	U	0.099	U	0.041	U	0.041	U	0.044	U	0.056	U	0.2	U	0.037	U	0.064	U
4-Chlorophenyl phenyl ether	mg/Kg	--	0.085	U	0.066	U	0.027	U	0.057	U	0.024	U	0.023	U	0.025	U	0.032	U	0.11	U	0.021	U	0.037	U
4-Methylphenol	mg/Kg	340	0.11	U	0.083	U	0.14	J	0.072	U	0.033	J	0.041	J	0.062	J	0.04	U	0.14	U	0.027	U	0.047	U
4-Nitroaniline	mg/Kg	--	0.072	U	0.056	U	0.023	U	0.048	U	0.02	U	0.02	U	0.021	U	0.027	U	0.097	U	0.018	U	0.031	U
4-Nitrophenol	mg/Kg	--	0.13	U	0.1	U	0.042	U	0.089	U	0.037	U	0.037	U	0.04	U	0.05	U	0.18	U	0.033	U	0.058	U
Acenaphthene	mg/Kg	37000	0.28	J	4.1		0.99		0.21	J	0.51		0.059	J	0.68		0.78		0.16	J	0.025	J	0.06	J
Acenaphthylene	mg/Kg	300000	0.73	J	2.1		1.5		0.17	J	0.48		0.31	J	0.29	J	1.5		0.46	J	0.089	J	0.073	J
Acetophenone	mg/Kg	5	0.1	U	0.081	U	0.033	U	0.07	U	0.029	U	0.029	U	0.031	U	0.039	U	0.14	U	0.026	U	0.045	U
Anthracene	mg/Kg	30000	1.2	J	4.5		1.5		0.27	J	0.63		0.23	J	1.9		2.1		0.4	J	0.077	J	0.16	J
Atrazine	mg/Kg	2400	0.12	U	0.092	U	0.037	U	0.079	U	0.033	U	0.033	U	0.035	U	0.044	U	0.16	U	0.03	U	0.051	U
Benzaldehyde	mg/Kg	68000	0.18	U	0.14	U	0.057	U	0.12	U	0.051	U	0.05	U	0.054	U	0.068	U	0.24	U	0.045	U	0.079	U
Benzo(a)anthracene	mg/Kg	2	**2.9**		**5.1**		**5.7**		0.51	J	2		0.75		**7.4**		**6.2**		0.74	J	0.48		0.28	J
Benzo(a)pyrene	mg/Kg	0.2	**2.9**		**3.9**		**5.8**		**0.39**	J	**1.9**		**0.77**		**8**		**5.4**		**0.65**	J	**0.54**		**0.21**	J
Benzo(b)fluoranthene	mg/Kg	2	**4.8**		**6.2**		**7.5**		0.51	J	**3.6**		1.9		**12**		**6.3**		0.93	J	0.93		0.32	J
Benzo(ghi)perylene	mg/Kg	30000	2.1		2.6		3.8		0.24	J	1.4		0.62		6.1		2.9		0.3	J	0.46		0.13	J
Benzo(k)fluoranthene	mg/Kg	23	0.055	U	0.043	U	0.017	U	0.037	U	0.015	U	0.015	U	0.016	U	0.021	U	0.074	U	0.014	U	0.024	U
Bis(2-chloroethoxy)methane	mg/Kg	--	0.08	U	0.062	U	0.025	U	0.054	U	0.022	U	0.022	U	0.024	U	0.03	U	0.11	U	0.02	U	0.035	U
Bis(2-chloroethyl)ether	mg/Kg	2	0.039	U	0.03	U	0.012	U	0.026	U	0.011	U	0.011	U	0.011	U	0.015	U	0.052	U	0.0096	U	0.017	U
Bis(2-ethylhexyl)phthalate	mg/Kg	140	3.3		5.3		4.2		0.1	J	0.62		0.59		0.039	U	0.65		0.18	U	0.12	J	0.057	U
Butyl benzyl phthalate	mg/Kg	14000	0.14	U	0.11	U	0.043	U	0.092	U	0.039	U	0.038	U	0.041	U	0.052	U	0.18	U	0.034	U	0.06	U
Caprolactam	mg/Kg	340000	0.33	U	0.25	U	0.1	U	0.22	U	0.091	U	0.09	U	0.096	U	0.12	U	0.44	U	0.081	U	0.14	U
Carbazole	mg/Kg	96	0.17	J	3.8		0.13	J	0.047	U	0.066	J	0.03	J	0.92		0.026	U	0.094	U	0.018	U	0.031	U
Chrysene	mg/Kg	230	2.6		4.4		5.9		0.49	J	1.7		0.68		7		6.5		0.69	J	0.54		0.24	J
Dibenzo(a,h)anthracene	mg/Kg	0.2	**0.43**	J	**0.78**	J	**1.1**		0.084	J	**0.31**	J	0.16	J	**1.6**		**0.62**	J	0.15	U	0.1	J	0.047	U
Dibenzofuran	mg/Kg	--	0.17	J	5.5		1.3		0.069	J	0.27	J	0.06	J	0.34	J	0.22	J	0.13	U	0.024	U	0.048	J
Diethyl phthalate	mg/Kg	550000	0.15	U	0.12	U	0.048	U	0.1	U	0.043	U	0.042	U	0.045	U	0.058	U	0.21	U	0.038	U	0.067	U
Dimethyl phthalate	mg/Kg	--	0.097	U	0.075	U	0.03	U	0.065	U	0.027	U	0.027	U	0.029	U	0.036	U	0.13	U	0.024	U	0.042	U
Di-n-butyl phthalate	mg/Kg	68000	0.28	U	0.22	U	0.089	U	0.19	U	0.08	U	0.079	U	0.084	U	0.11	U	0.38	U	0.071	U	0.12	U
Di-n-octyl phthalate	mg/Kg	27000	0.12	U	1.3		0.037	U	0.08	U	0.033	U	0.033	U	0.035	U	0.045	U	0.16	U	0.03	U	0.052	U

TABLE 4-16

ANALYTICAL RESULTS
HACKENSACK RIVER SEDIMENT SAMPLES
STANDARD CHLORINE SITE RIVER FRONTAGE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	HRWC-5 05/09/08 0.0-1.0 ft[2] Primary		HRWC-5 05/09/08 2.0-3.0 ft Primary		HRWC-6 05/02/08 0.0-1.0 ft[2] Primary		HRWC-6 05/02/08 2.0-3.0 ft Primary		HRWC-7 05/02/08 0.0-1.0 ft[2] Primary		HRWC-7 05/02/08 0.0-1.0 ft[2] Duplicate		HRWC-7 05/07/08 2.0-3.0 ft Primary		HRWC-8 05/02/08 0.0-1.0 ft[2] Primary		HRWC-8 05/02/08 2.0-3.0 ft Primary		HRWC-9 04/24/08 0.0-1.0 ft[2] Primary		HRWC-9 04/24/08 2.0-3.0 ft Primary	
Semivolatile Organics (Continued)																								
Fluoranthene	mg/Kg	24000	5.9		12		11		0.94	J	3.4		1.2		10		12		1.8	J	0.42	J	0.61	J
Fluorene	mg/Kg	24000	0.25	J	6.6		1.1		0.13	J	0.44	J	0.069	J	0.64		0.36	J	0.11	U	0.021	U	0.079	J
Hexachlorobenzene	mg/Kg	1	0.1	U	0.08	U	0.032	U	0.069	U	0.032	J	0.029	U	0.031	U	0.039	U	0.14	U	0.026	U	0.045	U
Hexachlorobutadiene	mg/Kg	25	0.11	U	0.081	U	0.033	U	0.07	U	0.029	U	0.029	U	0.031	U	0.039	U	0.14	U	0.026	U	0.046	U
Hexachlorocyclopentadiene	mg/Kg	110	0.079	U	0.061	U	0.025	U	0.053	U	0.022	U	0.022	U	0.023	U	0.03	U	0.11	U	0.02	U	0.034	U
Hexachloroethane	mg/Kg	140	0.077	U	0.059	U	0.024	U	0.051	U	0.021	U	0.021	U	0.023	U	0.029	U	0.1	U	0.019	U	0.033	U
Indeno(1,2,3-cd)pyrene	mg/Kg	2	1.8		**2.3**		**3.1**		0.21	J	1.3		0.54		**5.2**		**2.6**		0.33	J	0.39	J	0.12	J
Isophorone	mg/Kg	2000	0.096	U	0.074	U	0.03	U	0.064	U	0.027	U	0.026	U	0.028	U	0.036	U	0.13	U	0.024	U	0.042	U
Naphthalene	mg/Kg	17	1.9		**300**	E	15		0.17	J	**24**		**97**		2.2		6.2		0.26	J	0.28	J	0.79	
Nitrobenzene	mg/Kg	340	0.043	U	0.033	U	0.013	U	0.029	U	0.012	U	0.012	U	0.013	U	0.016	U	0.057	U	0.011	U	0.019	U
N-Nitrosodiphenylamine	mg/Kg	390	0.093	U	0.072	U	0.029	U	0.062	U	0.026	U	0.026	U	0.028	U	0.035	U	0.12	U	0.023	U	0.04	U
N-Nitrosodipropylamine	mg/Kg	0.3	0.042	U	0.033	U	0.013	U	0.028	U	0.012	U	0.012	U	0.012	U	0.016	U	0.056	U	0.01	U	0.018	U
Pentachlorophenol	mg/Kg	10	0.13	U	0.099	U	0.04	U	0.086	U	0.036	U	0.035	U	0.038	U	0.048	U	0.17	U	0.032	U	0.056	U
Phenanthrene	mg/Kg	300000	1.3	J	14		1.7		0.35	J	1.1		0.33	J	5.6		1.5		0.99	J	0.12	J	0.33	J
Phenol	mg/Kg	210000	0.1	U	0.08	U	0.075	J	0.069	U	0.029	U	0.035	J	0.031	U	0.068	J	0.14	U	0.026	U	0.045	U
Pyrene	mg/Kg	18000	4.6		9.1		9.5		0.86	J	2.2		0.9		9.2		11		1.2	J	0.39	J	0.42	J
Polychlorinated Dioxins and Furans																								
1,2,3,4,6,7,8-HpCDD	ug/Kg	--	0.063		0.17		0.12		0.042	J	0.22		1.1		0.054	J	0.16		0.029	QJ	0.036	J	0.013	QJ
1,2,3,4,6,7,8-HpCDF	ug/Kg	--	1.5		1.3		1.8		0.057	J	3.2		4.9		5.7		2.9		0.19	QJ	1.8		0.017	QJ
1,2,3,4,7,8,9-HpCDF	ug/Kg	--	0.057	Q	0.035	Q	0.048	QJ	0.17	U	0.11		0.017	J	0.19		0.13		0.35	U	0.05	J	0.11	U
1,2,3,4,7,8-HxCDD	ug/Kg	--	0.0012	QJ	0.01	U	0.003	QJ	0.17	U	0.073	U	0.44		0.077	U	0.0037	QJ	0.35	U	0.065	U	0.11	U
1,2,3,4,7,8-HxCDF	ug/Kg	--	0.55	Q	0.42	Q	0.59		0.022	J	1.1		2.4		1.5	Q	1.2		0.067	J	0.51		0.0083	QJ
1,2,3,6,7,8-HxCDD	ug/Kg	--	0.0069	J	0.013		0.0067	QJ	0.17	U	0.017	QJ	0.57		0.0071	J	0.014	J	0.35	U	0.0057	QJ	0.11	U
1,2,3,6,7,8-HxCDF	ug/Kg	--	0.065		0.057		0.11	Q	0.17	U	0.21	Q	0.48	Q	0.23	Q	0.17	Q	0.011	QJ	0.11	Q	0.002	QJ
1,2,3,7,8,9-HxCDD	ug/Kg	--	0.0034	J	0.0065	QJ	0.0084	QJ	0.17	U	0.0066	QJ	0.21		0.0019	QJ	0.0062	QJ	0.35	U	0.065	U	0.11	U
1,2,3,7,8,9-HxCDF	ug/Kg	--	0.013	U	0.01	U	0.081	U	0.17	U	0.073	U	0.017	J	0.077	U	0.097	U	0.35	U	0.065	U	0.11	U
1,2,3,7,8-PCDD	ug/Kg	--	0.002	J	0.0031	QJ	0.081	U	0.17	U	0.0024	QJ	0.9	Q	0.077	U	0.0064	QJ	0.35	U	0.065	U	0.11	U
1,2,3,7,8-PCDF	ug/Kg	--	0.007	J	0.013		0.017	QJ	0.17	U	0.023	J	0.15	Q	0.0083	QJ	0.018	J	0.35	U	0.013	QJ	0.11	U
2,3,4,6,7,8-HxCDF	ug/Kg	--	0.018		0.027	Q	0.027	QJ	0.17	U	0.048	QJ	0.18		0.063	J	0.036	Q	0.35	U	0.045	J	0.11	U
2,3,4,7,8-PCDF	ug/Kg	--	0.042	Q	0.038		0.048	QJ	0.17	U	0.1	Q	1.5	Q	0.11	Q	0.09	J	0.35	U	0.044	J	0.11	U
2,3,7,8-TCDD	ug/Kg	--	0.016	Q	0.23		0.016	U	0.035	U	0.047	Q	0.1	Q	0.04	Q	0.1		0.07	U	0.013	U	0.022	U
2,3,7,8-TCDF	ug/Kg	--	0.0042		0.012	Q	0.02	Q	0.035	U	0.048	Q	0.46	Q	0.0039	J	0.037	Q	0.07	U	0.0098	QJ	0.022	U
OCDD	ug/Kg	--	0.67		2.4		1.7	B	1.6	B	2.3	B	3.4	B	0.48	B	2.7	B	0.82	B	1	B	0.28	B
OCDF	ug/Kg	--	2.6	B	2	B	2.5	B	0.12	BJ	5	B	6.8	B	8.2		5.4	B	0.44	BJ	2.1	B	0.029	QBJ
Total HpCDD	ug/Kg	--	0.15		0.48		0.31		0.13	J	0.55		2.5		0.13	QJ	0.43		0.073	QJ	0.081	QJ	0.029	QJ
Total HpCDF	ug/Kg	--	1.7	Q	1.5	Q	2	Q	0.057	J	3.7		6.2		6.4		3.3	Q	0.22	QJ	2		0.017	QJ
Total HxCDD	ug/Kg	--	0.052	Q	0.12	Q	0.087	QJ	0.015	QJ	0.15	QJ	4.2	Q	0.052	QJ	0.15	QJ	0.35	U	0.032	QJ	0.11	U
Total HxCDF	ug/Kg	--	1.2	Q	0.99	Q	1.4	Q	0.046	QJ	2.6	Q	7.3	Q	3.1	Q	2.4	Q	0.11	QJ	1.4	Q	0.018	QJ
Total PeCDD	ug/Kg	--	0.035	QJ	0.085	Q	0.051	QJ	0.17	U	0.057	QJ	41	QEB	0.022	QJ	0.16	QJ	0.35	U	0.0068	QJ	0.11	U
Total PeCDF	ug/Kg	--	0.52	Q	0.72	Q	0.67	Q	0.17	U	1.3	Q	11	Q	1.2	Q	1.2	Q	0.013	QJ	0.59	Q	0.01	QJ
Total TCDD	ug/Kg	--	0.061	Q	0.31	Q	0.059	Q	0.035	U	0.099	Q	9.8	QS	0.068	Q	0.17	Q	0.07	U	0.0067	J	0.022	U
Total TCDF	ug/Kg	--	0.3	Q	0.71	QS	0.51	Q	0.017	QJ	0.83	Q	14	QS	0.61	Q	1	Q	0.07	U	0.23	Q	0.022	U
Polychlorinated Dioxins/Furans (2,3,7,8 Equivalents)																								
1,2,3,4,6,7,8-HpCDD	0.01	--	6.3E-04		1.7E-03		1.2E-03		4.2E-04		2.2E-03		1.1E-02		5.4E-04		1.6E-03		--		3.6E-04		--	
1,2,3,4,6,7,8-HpCDF	0.01	--	1.5E-02		1.3E-02		1.8E-02		5.7E-04		3.2E-02		4.9E-02		5.7E-02		2.9E-02		--		1.8E-02		--	
1,2,3,4,7,8,9-HpCDF	0.01	--	6.9E-05		1.3E-04		--		--		--		5.7E-03		1.9E-03		1.3E-03		--		5.0E-04		--	
1,2,3,4,7,8-HxCDD	0.10	--	--		--		--		--		1.1E-02		1.7E-03		--		--		--		--		--	
1,2,3,4,7,8-HxCDF	0.10	--	--		--		--		--		--		4.4E-02		--		1.2E-01		6.7E-03		5.1E-02		--	
1,2,3,6,7,8-HxCDD	0.10	--	--		--		5.9E-02		2.2E-03		1.1E-01		2.4E-01		7.1E-04		1.4E-03		--		--		--	

TABLE 4-16

ANALYTICAL RESULTS
HACKENSACK RIVER SEDIMENT SAMPLES
STANDARD CHLORINE SITE RIVER FRONTAGE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	HRWC-5 05/09/08 0.0-1.0 ft[2] Primary		HRWC-5 05/09/08 2.0-3.0 ft Primary		HRWC-6 05/02/08 0.0-1.0 ft[2] Primary		HRWC-6 05/02/08 2.0-3.0 ft Primary		HRWC-7 05/02/08 0.0-1.0 ft[2] Primary		HRWC-7 05/02/08 0.0-1.0 ft[2] Duplicate		HRWC-7 05/07/08 2.0-3.0 ft Primary		HRWC-8 05/02/08 0.0-1.0 ft[2] Primary		HRWC-8 05/02/08 2.0-3.0 ft Primary		HRWC-9 04/24/08 0.0-1.0 ft[2] Primary		HRWC-9 04/24/08 2.0-3.0 ft Primary	
1,2,3,6,7,8-HxCDF	0.10	--	6.5E-03		5.7E-03		--		--		--		--		--		--		--		--		--	
Polychlorinated Dioxins/Furans (2,3,7,8 Equivalents) (Continued)																								
1,2,3,7,8,9-HxCDD	0.10	--	3.4E-04		--		--		--		--		2.1E-02		--		--		--		--		--	
1,2,3,7,8,9-HxCDF	0.10	--	--		--		--		--		--		1.7E-03		--		--		--		--		--	
1,2,3,7,8-PCDD	1.00	--	2.0E-03		--		--		--		--		--		--		--		--		--		--	
1,2,3,7,8-PCDF	0.05	--	3.5E-04		6.5E-04		--		--		1.2E-03		--		--		9.0E-04		--		--		--	
2,3,4,6,7,8-HxCDF	0.10	--	1.8E-03		--		--		--		--		1.8E-02		6.3E-03		--		--		4.5E-03		--	
2,3,4,7,8-PCDF	0.50	--	--		1.9E-02		--		--		--		--		--		4.5E-02		--		2.2E-02		--	
2,3,7,8-TCDD	1.00	--	--		2.3E-01		--		--		--		--		--		1.0E-01		--		--		--	
2,3,7,8-TCDF	0.10	--	4.2E-04		--		--		--		--		--		3.9E-04		--		--		--		--	
OCDD	0.0001	--	6.7E-05		2.4E-04		1.7E-04		1.6E-04		2.3E-04		3.4E-04		4.8E-05		2.7E-04		8.2E-05		1.0E-04		2.8E-05	
OCDF	0.0001	--	2.6E-04		2.0E-04		2.5E-04		1.2E-05		5.0E-04		6.8E-04		8.2E-04		5.4E-04		4.4E-05		2.1E-04		--	
Total 2,3,7,8-TCDD Equivalents[3]	ug/Kg	1	2.7E-02		2.7E-01		7.9E-02		3.4E-03		1.6E-01		3.9E-01		6.8E-02		3.0E-01		6.8E-03		9.7E-02		2.8E-05	
Polychlorinated Biphenyls (Aroclors)																								
Aroclor 1016	mg/Kg	1	0.0064	U	0.005	U	0.004	U	0.0085	U	0.0036	U	0.0035	U	0.0038	U	0.0048	U	0.017	U	0.0032	U	0.0055	U
Aroclor 1221	mg/Kg	1	0.0082	U	0.0065	U	0.0052	U	0.011	U	0.0047	U	0.0046	U	0.0049	U	0.0062	U	0.022	U	0.0041	U	0.0071	U
Aroclor 1232	mg/Kg	1	0.0074	U	0.0058	U	0.39		0.0098	U	0.7		0.43		0.19		**1.9**		0.02	U	0.0037	U	0.0064	U
Aroclor 1242	mg/Kg	1	0.007	U	0.0055	U	0.0044	U	0.0093	U	0.004	U	0.0039	U	0.0042	U	0.0053	U	0.019	U	0.0035	U	0.006	U
Aroclor 1248	mg/Kg	1	0.35		**1.7**		0.0026	U	0.0054	U	0.0023	U	0.0023	U	0.0024	U	0.0031	U	0.011	U	0.002	U	0.0035	U
Aroclor 1254	mg/Kg	1	0.0061	U	**1.1**		0.087		0.0081	U	0.23		0.16		0.0036	U	0.29		0.017	U	0.0031	U	0.0053	U
Aroclor 1260	mg/Kg	1	0.16		0.0048	U	0.049		0.0081	U	0.086		0.08		0.034		0.071		0.017	U	0.014	J	0.0053	U
Aroclor 1262	mg/Kg	1	0.0095	U	0.0074	U	0.0059	U	0.013	U	0.0053	U	0.0052	U	0.0056	U	0.0071	U	0.026	U	0.0047	U	0.0081	U
Aroclor 1268	mg/Kg	1	0.0055	U	0.0044	U	0.0035	U	0.0073	U	0.0031	U	0.0031	U	0.0033	U	0.0042	U	0.015	U	0.0028	U	0.0048	U
Polychlorinated Biphenyls (Congeners/Homoloques)																								
PCB 1	mg/Kg	1	0.0012	QB	0.0006	BJ	0.00011	QJ	0.000012	QBJ	0.00015	J	--		0.00008	B	0.0006	QJ	0.000042	QBJ	0.000004	QJ	8.3E-06	BJ
PCB 2 (BZ)	mg/Kg	1	0.00031	BJ	0.00019	BJ	0.00065	U	0.000014	QBJ	0.00059	U	--		0.000069	BJ	0.00048	J	0.000022	QBJ	0.000002	QJ	0.000009	BJ
PCB 3 (BZ)	mg/Kg	1	0.00068	QJ	0.00035	QJ	0.00015	J	0.000019	J	0.00059	U	--		0.000055	QJ	0.00049	QJ	0.000032	J	3.4E-06	QJ	8.1E-06	QJ
PCB 4	mg/Kg	1	0.0024	QB	0.0072	B	0.00054	QBJ	0.000026	QBJ	0.00043	QBJ	--		0.00048	QB	0.0039	QB	0.0002	B	0.000014	QBJ	6.7E-06	QBJ
PCB 5 (BZ)	mg/Kg	1	0.00035	QJ	0.0002	QJ	0.00065	U	0.000035	U	0.00059	U	--		0.000016	QJ	0.00052	QJ	9.8E-06	QJ	0.000013	U	1.9E-06	QJ
PCB 6	mg/Kg	1	0.0025	QB	0.0031	QB	0.00023	QBJ	0.000014	QBJ	0.00018	QBJ	--		0.00031	QB	0.0035	QB	0.00016	QB	9.7E-06	QBJ	4.7E-06	QBJ
PCB 7 (BZ)	mg/Kg	1	0.0004	QBJ	0.00057	QBJ	0.00065	U	5.2E-06	QBJ	0.00059	U	--		0.000044	QBJ	0.00032	QJ	0.000018	QBJ	1.6E-06	QJ	2.8E-06	QBJ
PCB 8	mg/Kg	1	0.0055	QB	0.014	B	0.001	QBJ	0.000046	QBJ	0.00078	QBJ	--		0.001	B	0.0095	B	0.00045	B	0.000031	QB	9.4E-06	QBJ
PCB 9 (BZ)	mg/Kg	1	0.0013	QB	0.00098	QB	0.00065	U	5.2E-06	QBJ	0.00059	U	--		0.000065	QBJ	0.0015	Q	0.000036	QBJ	3.1E-06	QJ	2.5E-06	QBJ
PCB 10 (BZ)	mg/Kg	1	0.00012	QJ	0.0004	QJ	0.00065	U	0.000035	U	0.00059	U	--		0.000026	QJ	0.00015	QJ	0.000015	QJ	1.4E-06	QJ	2.5E-06	QJ
PCB 11 (BZ)	mg/Kg	1	0.0026	QB	0.0079	B	0.0014	QB	0.000045	BJ	0.0012	QB	--		0.00071	B	0.0054	B	0.00027	B	0.000052	QB	0.000024	BJ
PCB 12 (BZ)	mg/Kg	1	0.0022	QBC	0.0027	QBC	0.00029	QCJ	0.000019	QBCJ	0.00035	QCJ	--		0.00033	QBC	0.0047	C	0.00016	BC	0.000015	QC	4.7E-06	QBCJ
PCB 13 (BZ)	mg/Kg	1	0.0022	QBC	0.0027	QBC	0.00029	QCJ	0.000019	QBCJ	0.00035	QCJ	--		0.00033	QBC	0.0047	C	0.00016	BC	0.000015	QC	4.7E-06	QBCJ
PCB 14 (BZ)	mg/Kg	1	0.001	U	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000077	U	0.00078	U	0.00007	U	0.000013	U	0.000003	QJ
PCB 15	mg/Kg	1	0.0068	B	0.012	B	0.0017	B	0.000069	QB	0.0025	QB	--		0.0011	B	0.0069	B	0.00038	B	0.000077	QB	6.3E-06	QBJ
PCB 16	mg/Kg	1	0.004	B	0.024	B	0.0013	B	0.000042	QB	0.0007	B	--		0.0014	B	0.011	B	0.00051	B	0.000021	QB	4.6E-06	QBJ
PCB 17 (BZ)	mg/Kg	1	0.0043	B	0.028	B	0.0018	B	0.000063	B	0.00099	B	--		0.0019	B	0.012	B	0.00069	B	0.000033	B	0.000008	QBJ
PCB-18	mg/Kg	1	0.011	B	0.076	B	0.0037	B	0.00013	QB	0.0024	B	--		0.0048	B	0.031	B	0.0017	B	0.000074	B	0.000019	BJ
PCB 19 (BZ)	mg/Kg	1	0.00084	J	0.0051		0.0003	J	0.000012	QJ	0.00063		--		0.00042		0.0016		0.00012		6.8E-06	QJ	0.000022	U
PCB 20 (BZ)	mg/Kg	1	0.021	BC	0.084	BC	0.0073	BC	0.00022	BC	0.0053	BC	--		0.0061	BC	0.04	BC	0.0022	BC	0.0002	BC	0.000019	BCJ
PCB 21 (BZ)	mg/Kg	1	0.0064	BC	0.033	BC	0.0017	BC	0.000054	BC	0.0011	QBC	--		0.0019	BC	0.015	BC	0.00064	BC	0.000038	BC	7.2E-06	BCJ
PCB 22	mg/Kg	1	0.0054	B	0.025	B	0.0018	B	0.000057	B	0.0012	B	--		0.0015	B	0.012	B	0.00053	B	0.00004	B	5.2E-06	BJ
PCB 23 (BZ)	mg/Kg	1	0.001	U	0.000064	QJ	0.00065	U	0.000035	U	0.00059	U	--		4.9E-06	QJ	0.00012	QJ	4.3E-06	QJ	0.000013	U	0.000022	U
PCB 24 (BZ)	mg/Kg	1	0.00024	QJ	0.00075	QJ	0.000053	QJ	0.000035	U	0.00059	U	--		0.000049	QJ	0.00045	J	0.000017	J	0.000013	U	0.000022	U
PCB 25 (BZ)	mg/Kg	1	0.0029	B	0.0059	B	0.00055	J	0.000021	BJ	0.00043	J	--		0.00064	B	0.0031		0.0002	B	0.000018		1.9E-06	BJ

TABLE 4-16

ANALYTICAL RESULTS
HACKENSACK RIVER SEDIMENT SAMPLES
STANDARD CHLORINE SITE RIVER FRONTAGE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	HRWC-5 05/09/08 0.0-1.0 ft[2] Primary		HRWC-5 05/09/08 2.0-3.0 ft Primary		HRWC-6 05/02/08 0.0-1.0 ft[2] Primary		HRWC-6 05/02/08 2.0-3.0 ft Primary		HRWC-7 05/02/08 0.0-1.0 ft[2] Primary		HRWC-7 05/02/08 0.0-1.0 ft[2] Duplicate		HRWC-7 05/07/08 2.0-3.0 ft Primary		HRWC-8 05/02/08 0.0-1.0 ft[2] Primary		HRWC-8 05/02/08 2.0-3.0 ft Primary		HRWC-9 04/24/08 0.0-1.0 ft[2] Primary		HRWC-9 04/24/08 2.0-3.0 ft Primary	
Polychlorinated Biphenyls (Congeners/Homoloques) (Continued)																								
PCB 26 (BZ)	mg/Kg	1	0.0046	BC	0.012	BC	0.00096	BC	0.000031	QBCJ	0.00062	BC	--		0.0012	BC	0.0064	BC	0.00032	QBC	0.00003	BC	4.9E-06	QBCJ
PCB 27 (BZ)	mg/Kg	1	0.00064	QJ	0.0038		0.00031	J	0.000012	J	0.00037	QJ	--		0.00034		0.0013	Q	0.000072	Q	0.000013	J	0.000022	U
PCB 28	mg/Kg	1	0.021	BC	0.084	BC	0.0073	BC	0.00022	BC	0.0053	BC	--		0.0061	BC	0.04	BC	0.0022	BC	0.0002	BC	0.000019	BCJ
PCB 29 (BZ)	mg/Kg	1	0.0046	BC	0.012	BC	0.00096	BC	0.000031	QBCJ	0.00062	BC	--		0.0012	BC	0.0064	BC	0.00032	Q	0.00003	BC	4.9E-06	QBCJ
PCB 30 (BZ)	mg/Kg	1	0.0021	U	0.0016	U	0.0013	U	0.000069	U	0.0012	U	--		0.00015	U	0.0016	U	0.00014	U	0.000026	U	0.000045	U
PCB 31	mg/Kg	1	0.017	B	0.075	B	0.0053	B	0.00017	B	0.0032	B	--		0.0048	B	0.036	B	0.0018	B	0.00013	B	0.000014	BJ
PCB 32 (BZ)	mg/Kg	1	0.0031	B	0.019	B	0.0013	B	0.000049	B	0.0013	B	--		0.0013	B	0.007	B	0.00042	B	0.000037	B	4.6E-06	QBJ
PCB 33	mg/Kg	1	0.0064	BC	0.033	BC	0.0017	BC	0.000054	BC	0.0011	QBC	--		0.0019	BC	0.015	BC	0.00064	BC	0.000038	BC	7.2E-06	BCJ
PCB 34 (BZ)	mg/Kg	1	0.00036	QJ	0.00037	QJ	0.00065	U	0.000035	U	0.00059	U	--		0.000039	QJ	0.0003	QJ	0.000023	QJ	0.000013	U	0.000022	U
PCB 35 (BZ)	mg/Kg	1	0.00074	QJ	0.0017	Q	0.0002	J	9.1E-06	J	0.00021	J	--		0.00011		0.00093	Q	0.000042	QJ	4.5E-06	J	3.2E-06	QJ
PCB 36 (BZ)	mg/Kg	1	0.001	U	0.00081	U	0.00065	U	4.3E-06	QJ	0.00059	U	--		0.000077	U	0.00078	U	0.00007	U	0.000013	U	0.000022	U
PCB 37	mg/Kg	1	0.0058	B	0.018	B	0.0019		0.000055	QB	0.002		--		0.0011	B	0.0085		0.00038	B	0.00007		5.8E-06	BJ
PCB 38 (BZ)	mg/Kg	1	0.001	U	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000077	U	0.00078	U	0.00007	U	0.000013	U	0.000002	QJ
PCB 39 (BZ)	mg/Kg	1	0.00025	J	0.00059	J	0.00065	U	0.000035	U	0.00059	U	--		0.000031	J	0.00031	QJ	0.000021	J	1.6E-06	QJ	0.000022	U
PCB 40 (BZ)	mg/Kg	1	0.0085	BC	0.041	BC	0.0037	BC	0.000089	QBC	0.0049	BC	--		0.0033	BC	0.019	BC	0.00007	U	0.00018	BC	6.6E-06	QBCJ
PCB 41	mg/Kg	1	0.00061	QJ	0.0077		0.00065	U	0.000035	U	0.00017	QBJ	--		0.0002	Q	0.0014	QB	0.000065	QJ	0.000013	U	4.5E-06	QJ
PCB 42 (BZ)	mg/Kg	1	0.0054	B	0.025	B	0.0024	B	0.000066	B	0.0032	B	--		0.0023	B	0.012	B	0.00069	B	0.00011	B	3.4E-06	BJ
PCB 43 (BZ)	mg/Kg	1	0.0007	CJ	0.0043	C	0.00021	QCJ	0.000035	U	0.0002	QCJ	--		0.00031	C	0.0016	QC	0.00009	C	7.4E-06	QCJ	2.7E-06	CJ
PCB 44	mg/Kg	1	0.019	BC	0.087	BC	0.0077	BC	0.0002	BC	0.0087	BC	--		0.0074	BC	0.04	BC	0.0022	BC	0.00037	BC	0.000022	BCJ
PCB 45 (BZ)	mg/Kg	1	0.0036	BC	0.018	BC	0.0013	BC	0.000041	BC	0.0041	BC	--		0.0016	BC	0.0073	BC	0.00041	BC	0.000081	BC	3.3E-06	QBCJ
PCB 46 (BZ)	mg/Kg	1	0.00095	QJ	0.0066		0.00037	J	0.000014	QJ	0.0014		--		0.00061		0.0023		0.00015		0.000021		0.000022	U
PCB 47 (BZ)	mg/Kg	1	0.019	BC	0.087	BC	0.0077	BC	0.0002	BC	0.0087	BC	--		0.0074	BC	0.04	BC	0.0022	BC	0.00037	BC	0.000022	BCJ
PCB 48 (BZ)	mg/Kg	1	0.0031	B	0.022	B	0.0013		0.000039	QB	0.00086		--		0.0013	B	0.009		0.00047	B	0.000028		0.000022	U
PCB 49	mg/Kg	1	0.015	B	0.058	B	0.0058	B	0.00015	B	0.0057	B	--		0.0049	B	0.029	B	0.0016	B	0.00021	B	0.000015	BJ
PCB 50 (BZ)	mg/Kg	1	0.0026	BC	0.013	BC	0.00096	BC	0.000029	BCJ	0.0035	BC	--		0.0013	BC	0.0057	BC	0.00032	BC	0.000071	BC	3.7E-06	BCJ
PCB 51 (BZ)	mg/Kg	1	0.0036	BC	0.018	BC	0.0013	BC	0.000041	BC	0.0041	BC	--		0.0016	BC	0.0073	BC	0.00041	BC	0.000081	BC	3.3E-06	QBCJ
PCB 52	mg/Kg	1	0.02	B	0.1	B	0.0092	B	0.00023	B	0.011	B	--		0.0093	B	0.046	B	0.0025	B	0.00048	B	0.000045	B
PCB 53 (BZ)	mg/Kg	1	0.0026	BC	0.013	BC	0.00096	BC	0.000029	BCJ	0.0035	BC	--		0.0013	BC	0.0057	BC	0.00032	BC	0.000071	BC	3.7E-06	BCJ
PCB 54 (BZ)	mg/Kg	1	0.001	U	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000016	QJ	0.00078	U	0.00007	U	0.000013	U	0.000022	U
PCB 55 (BZ)	mg/Kg	1	0.00039	QJ	0.0013	Q	0.000095	QJ	4.9E-06	J	0.00059	U	--		0.0001	Q	0.00078	U	0.000039	J	0.000013	U	0.000022	U
PCB 56 (BZ)	mg/Kg	1	0.0094		0.039		0.0035	B	0.000088		0.0032	B	--		0.0026		0.021	B	0.00096		0.00013	B	0.000022	U
PCB 57 (BZ)	mg/Kg	1	0.00024	QJ	0.00055	J	0.00065	U	0.000035	U	0.00059	U	--		0.000041	J	0.00078	U	8.9E-06	J	0.000013	U	0.000022	U
PCB 58 (BZ)	mg/Kg	1	0.00047	QJ	0.0015		0.00065	U	5.5E-06	QJ	0.0005	J	--		0.00021		0.00053	QJ	0.000045	J	0.000021		0.000022	U
PCB 59 (BZ)	mg/Kg	1	0.0017	C	0.0085	C	0.00062	QCJ	0.000025	CJ	0.0015	C	--		0.00073	C	0.0038	C	0.00021	C	0.000043	C	3.7E-06	QCJ
PCB 60 (BZ)	mg/Kg	1	0.0028		0.02		0.0011	B	0.000029	J	0.0012	B	--		0.00089		0.0048	B	0.00023		0.000038	B	2.5E-06	QJ
PCB 61 (BZ)	mg/Kg	1	0.0021	U	0.0016	U	0.0013	U	0.000069	U	0.0012	U	--		0.00015	U	0.0016	U	0.00014	U	0.000026	U	0.000045	U
PCB 62 (BZ)	mg/Kg	1	0.0017	C	0.0085	C	0.00062	QCJ	0.000025	CJ	0.0015	C	--		0.00073	C	0.0038	C	0.00021	C	0.000043	C	3.7E-06	QCJ
PCB 63 (BZ)	mg/Kg	1	0.00073	J	0.0034		0.00065	U	7.9E-06	J	0.00014	QJ	--		0.00024		0.0015		0.000079		5.8E-06	J	0.000022	U
PCB 64	mg/Kg	1	0.0075	B	0.038	B	0.0034	B	0.000087	B	0.0039	B	--		0.0028	B	0.018	B	0.00094	B	0.00012	B	5.8E-06	QBJ
PCB 65 (BZ)	mg/Kg	1	0.019	BC	0.087	BC	0.0077	BC	0.0002	BC	0.0087	BC	--		0.0074	BC	0.04	BC	0.0022	BC	0.00037	BC	0.000022	BCJ
PCB 66 (BZ)	mg/Kg	1	0.019	B	0.079	B	0.0078	B	0.00019	B	0.0071	B	--		0.0059	B	0.041	B	0.0021	B	0.00026	B	0.000017	BJ
PCB 67 (BZ)	mg/Kg	1	0.00082	J	0.0026		0.00065	U	4.2E-06	QJ	0.00059	U	--		0.00015		0.00093		0.000058	QJ	7.8E-06	J	0.000022	U
PCB 68 (BZ)	mg/Kg	1	0.00017	QJ	0.0003	QJ	0.00065	U	0.000035	U	0.00059	U	--		0.000035	QJ	0.00024	J	0.000023	J	4.9E-06	J	0.000022	U
PCB 69 (BZ)	mg/Kg	1	0.001	U	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000077	U	0.00078	U	0.00007	U	0.000013	U	0.000022	U
PCB 70	mg/Kg	1	0.028	BC	0.14	BC	0.012	BC	0.00028	BC	0.0081	BC	--		0.0086	BC	0.067	BC	0.0033	BC	0.0003	BC	0.000035	BCJ
PCB 71 (BZ)	mg/Kg	1	0.0085	BC	0.041	BC	0.0037	BC	0.000089	QBC	0.0049	BC	--		0.0033	BC	0.019	BC	0.00007	U	0.00018	BC	6.6E-06	QBCJ
PCB 72 (BZ)	mg/Kg	1	0.00053	J	0.00068	J	0.00065	U	0.000035	U	0.00059	U	--		0.000064	J	0.00054	J	0.000039	J	5.8E-06	J	0.000022	U
PCB 73 (BZ)	mg/Kg	1	0.0007	CJ	0.0043	C	0.00021	QCJ	0.000035	U	0.0002	QCJ	--		0.00031	C	0.0016	QC	0.00009	C	7.4E-06	QCJ	2.7E-06	CJ
PCB 74	mg/Kg	1	0.028	BC	0.14	BC	0.012	BC	0.00028	BC	0.0081	BC	--		0.0086	BC	0.067	BC	0.0033	BC	0.0003	BC	0.000035	BCJ

TABLE 4-16

ANALYTICAL RESULTS
HACKENSACK RIVER SEDIMENT SAMPLES
STANDARD CHLORINE SITE RIVER FRONTAGE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	HRWC-5 05/09/08 0.0-1.0 ft[2] Primary		HRWC-5 05/09/08 2.0-3.0 ft Primary		HRWC-6 05/02/08 0.0-1.0 ft[2] Primary		HRWC-6 05/02/08 2.0-3.0 ft Primary		HRWC-7 05/02/08 0.0-1.0 ft[2] Primary		HRWC-7 05/02/08 0.0-1.0 ft[2] Duplicate		HRWC-7 05/07/08 2.0-3.0 ft Primary		HRWC-8 05/02/08 0.0-1.0 ft[2] Primary		HRWC-8 05/02/08 2.0-3.0 ft Primary		HRWC-9 04/24/08 0.0-1.0 ft[2] Primary		HRWC-9 04/24/08 2.0-3.0 ft Primary	
Polychlorinated Biphenyls (Congeners/Homoloques) (Continued)																								
PCB 75	mg/Kg	1	0.0017	C	0.0085	C	0.00062	QCJ	0.000025	CJ	0.0015	C	--		0.00073	C	0.0038	C	0.00021	C	0.000043	C	3.7E-06	QCJ
PCB 76 (BZ)	mg/Kg	1	0.028	BC	0.14	BC	0.012	BC	0.00028	BC	0.0081	BC	--		0.0086	BC	0.067	BC	0.0033	BC	0.0003	BC	0.000035	BCJ
PCB 77	mg/Kg	1	0.0033	Q	0.0086		0.00082		0.000023	QJ	0.0017		--		0.00058		0.0045		0.00021	Q	0.000053		3.8E-06	J
PCB 78 (BZ)	mg/Kg	1	0.001	U	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000077	U	0.00078	U	0.00007	U	0.000013	U	0.000022	U
PCB 79 (BZ)	mg/Kg	1	0.00044	QJ	0.00052	J	0.00065	U	0.000035	U	0.00015	QJ	--		0.000068	J	0.00021	J	0.000019	QJ	6.5E-06	J	0.000022	U
PCB 80 (BZ)	mg/Kg	1	0.001	U	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000077	U	0.00078	U	0.00007	U	0.000013	U	3.6E-06	J
PCB 81	mg/Kg	1	0.001	U	0.00039	QJ	0.00065	U	0.000035	U	0.00059	U	--		0.000017	QJ	0.00078	U	9.2E-06	Q	0.000013	U	0.000022	U
PCB 82 (BZ)	mg/Kg	1	0.0028		0.013		0.001	B	0.000033	J	0.003	B	--		0.0014		0.0055	B	0.00029		0.00013	B	0.000022	U
PCB 83 (BZ)	mg/Kg	1	0.013	C	0.038	C	0.0052	BC	0.00014	C	0.01	BC	--		0.0048	C	0.021	BC	0.0013	C	0.00046	BC	0.000041	C
PCB 84	mg/Kg	1	0.0052		0.021		0.0021	B	0.000061		0.0063	B	--		0.0026		0.01	B	0.00058		0.00026	B	0.000019	J
PCB 85 (BZ)	mg/Kg	1	0.0037	C	0.013	C	0.00085	BC	0.000038	QC	0.0028	BC	--		0.0014	C	0.0057	BQC	0.00034	C	0.00012	BQC	0.000012	CJ
PCB 86 (BZ)	mg/Kg	1	0.011	QC	0.043	C	0.0041	BC	0.00012	QC	0.009	BC	--		0.0045	C	0.019	BC	0.0011	C	0.00045	BC	0.000044	C
PCB 87	mg/Kg	1	0.011	QC	0.043	C	0.0041	BC	0.00012	QC	0.009	BC	--		0.0045	C	0.019	BC	0.0011	C	0.00045	BC	0.000044	C
PCB 88 (BZ)	mg/Kg	1	0.001	U	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000077	U	0.00078	U	0.00007	U	0.000013	U	0.000022	U
PCB 89 (BZ)	mg/Kg	1	0.001	U	0.0017	Q	0.00065	U	0.000035	U	0.00045	J	--		0.0002	Q	0.00069	J	0.000052	QJ	0.000011	J	0.000022	U
PCB 90 (BZ)	mg/Kg	1	0.016	BC	0.055	BC	0.0072	BC	0.00016	QBC	0.012	BC	--		0.0062	BC	0.027	BC	0.0016	BC	0.00064	BC	0.000073	BC
PCB 91 (BZ)	mg/Kg	1	0.0033		0.01		0.001	B	0.000037		0.0034	B	--		0.0013		0.0047	B	0.00031		0.00016	B	8.3E-06	QJ
PCB 92 (BZ)	mg/Kg	1	0.0034		0.011		0.00099		0.000036		0.0031		--		0.0014		0.0056		0.00033		0.00015		0.000012	J
PCB 93 (BZ)	mg/Kg	1	0.00032	QJ	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000077	U	0.00078	U	0.00007	U	0.000013	U	0.000022	U
PCB 94 (BZ)	mg/Kg	1	0.00025	QJ	0.00047	J	0.00065	U	0.000035	U	0.00059	U	--		0.000062	QJ	0.00043	J	0.00007	U	6.9E-06	QJ	0.000022	U
PCB 95 (BZ)	mg/Kg	1	0.012	C	0.045	C	0.0055	BC	0.00014	C	0.016	BC	--		0.0059	C	0.022	BC	0.0013	C	0.00073	BC	0.00005	QC
PCB 96 (BZ)	mg/Kg	1	0.0003	J	0.00087		0.00065	U	0.000035	U	0.00019	J	--		0.000098	Q	0.00056	QJ	0.00003	J	7.8E-06	QJ	0.000022	U
PCB 97	mg/Kg	1	0.011	QC	0.043	C	0.0041	BC	0.00012	QC	0.009	BC	--		0.0045	C	0.019	BC	0.0011	C	0.00045	BC	0.000044	C
PCB 98 (BZ)	mg/Kg	1	0.00085	CJ	0.0037	QC	0.00027	CJ	8.9E-06	QCJ	0.00088	QC	--		0.0004	QC	0.0016	QC	0.00012	C	0.000037	QC	0.000022	U
PCB 99	mg/Kg	1	0.013	C	0.038	C	0.0052	BC	0.00014	C	0.01	BC	--		0.0048	C	0.021	BC	0.0013	C	0.00046	BC	0.000041	C
PCB 100 (BZ)	mg/Kg	1	0.012	C	0.045	C	0.0055	BC	0.00014	C	0.016	BC	--		0.0059	C	0.022	BC	0.0013	C	0.00073	BC	0.00005	QC
PCB 101	mg/Kg	1	0.016	BC	0.055	BC	0.0072	BC	0.00016	QBC	0.012	BC	--		0.0062	BC	0.027	BC	0.0016	BC	0.00064	BC	0.000073	BC
PCB 102 (BZ)	mg/Kg	1	0.00085	CJ	0.0037	QC	0.00027	CJ	8.9E-06	QCJ	0.00088	QC	--		0.0004	Q	0.0016	QC	0.00012	C	0.000037	QC	0.000022	U
PCB 103 (BZ)	mg/Kg	1	0.00056	J	0.00058	J	0.00065	U	0.000035	U	0.00059	U	--		0.000078		0.00078	U	0.000039	J	0.000011	J	0.000022	U
PCB 104 (BZ)	mg/Kg	1	0.001	U	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000077	U	0.00078	U	0.00007	U	0.000013	U	0.000022	U
PCB 105	mg/Kg	1	0.0096	Q	0.023		0.0022	QB	0.000061	Q	0.003	QB	--		0.0014	Q	0.013	QB	0.00054	Q	0.00022	QB	0.000028	Q
PCB 106 (BZ)	mg/Kg	1	0.00019	QJ	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000077	U	0.00078	U	0.00007	U	0.000013	U	0.000022	U
PCB 107 (BZ)	mg/Kg	1	0.001	U	0.0032	Q	0.00042	J	0.000011	J	0.00055	QJ	--		0.00038		0.002		0.00015		0.000033		3.1E-06	QJ
PCB 108 (BZ)	mg/Kg	1	0.00056	CJ	0.002	C	0.00014	QCJ	0.000035	U	0.0002	QCJ	--		0.00017	C	0.00062	CJ	0.00004	QCJ	0.000018	C	0.000022	U
PCB 109 (BZ)	mg/Kg	1	0.011	QC	0.043	C	0.0041	BC	0.00012	QC	0.009	BC	--		0.0045	C	0.019	BC	0.0011	C	0.00045	BC	0.000044	C
PCB 110	mg/Kg	1	0.019	BC	0.064	BC	0.0083	BC	0.00022	BC	0.02	BC	--		0.0079	BC	0.032	BC	0.0018	BC	0.0011	BC	0.000078	BC
PCB 111 (BZ)	mg/Kg	1	0.00015	QJ	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000077	U	0.00078	U	0.000016	QJ	0.000013	U	0.000022	U
PCB 112 (BZ)	mg/Kg	1	0.001	U	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000077	U	0.00078	U	0.00007	U	0.000013	U	0.000022	U
PCB 113 (BZ)	mg/Kg	1	0.016	BC	0.055	BC	0.0072	BC	0.00016	QBJ	0.012	BC	--		0.0062	BC	0.027	BC	0.0016	BC	0.00064	BC	0.000073	BC
PCB 114	mg/Kg	1	0.00055	QJ	0.0015		0.00065	U	0.000035	U	0.00012	QJ	--		0.00021		0.00069	QJ	0.00004	J	0.000014	Q	0.000022	U
PCB 115	mg/Kg	1	0.019	BC	0.064	BC	0.0083	BC	0.00022	BC	0.02	BC	--		0.0079	BC	0.032	BC	0.0018	BC	0.0011	BC	0.000078	B
PCB 116 (BZ)	mg/Kg	1	0.0037	C	0.013	C	0.00085	BC	0.000038	QC	0.0028	BC	--		0.0014	C	0.0057	QB	0.00034	C	0.00012	QBC	0.000012	CJ
PCB 117 (BZ)	mg/Kg	1	0.0037	C	0.013	C	0.00085	BC	0.000038	QC	0.0028	BC	--		0.0014	C	0.0057	QB	0.00034	C	0.00012	QBC	0.000012	CJ
PCB 118	mg/Kg	1	0.014		0.043		0.0057	B	0.00014		0.006	B	--		0.0038		0.023	B	0.0013		0.00035	B	0.000047	
PCB 119	mg/Kg	1	0.011	QC	0.043	C	0.0041	BC	0.00012	QC	0.009	BC	--		0.0045	C	0.019	BC	0.0011	C	0.00045	BC	0.000044	C
PCB 120 (BZ)	mg/Kg	1	0.001	U	0.00017	QJ	0.00065	U	0.000035	U	0.00059	U	--		0.000021	QJ	0.00078	U	0.000038	J	4.2E-06	QJ	0.000022	U
PCB 121 (BZ)	mg/Kg	1	0.001	U	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000077	U	0.00078	U	0.00007	U	0.000013	U	0.000022	U
PCB 122 (BZ)	mg/Kg	1	0.00027	J	0.0008	QJ	0.00065	U	0.000035	U	0.00022	QJ	--		0.000085		0.00033	J	0.000025	J	7.2E-06	J	0.000022	U
PCB 123	mg/Kg	1	0.0014		0.0012	Q	0.0001	J	4.9E-06	QJ	0.00013	QJ	--		0.0001		0.00029	QJ	0.000022	J	0.000015		0.000022	U

TABLE 4-16

ANALYTICAL RESULTS
HACKENSACK RIVER SEDIMENT SAMPLES
STANDARD CHLORINE SITE RIVER FRONTAGE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	HRWC-5 05/09/08 0.0-1.0 ft[2] Primary		HRWC-5 05/09/08 2.0-3.0 ft Primary		HRWC-6 05/02/08 0.0-1.0 ft[2] Primary		HRWC-6 05/02/08 2.0-3.0 ft Primary		HRWC-7 05/02/08 0.0-1.0 ft[2] Primary		HRWC-7 05/02/08 0.0-1.0 ft[2] Duplicate		HRWC-7 05/07/08 2.0-3.0 ft Primary		HRWC-8 05/02/08 0.0-1.0 ft[2] Primary		HRWC-8 05/02/08 2.0-3.0 ft Primary		HRWC-9 04/24/08 0.0-1.0 ft[2] Primary		HRWC-9 04/24/08 2.0-3.0 ft Primary	
Polychlorinated Biphenyls (Congeners/Homoloques) (Continued)																								
PCB 124 (BZ)	mg/Kg	1	0.00056	C	0.002	C	0.00014	QCJ	0.000035	U	0.0002	QCJ	--		0.00017	C	0.00062	CJ	0.00004	QCJ	0.000018	C	0.000022	U
PCB 125 (BZ)	mg/Kg	1	0.011	Q	0.043	C	0.0041	BC	0.00012	QC	0.009	BC	--		0.0045	C	0.019	BC	0.0011	C	0.00045	BC	0.000044	C
PCB 126	mg/Kg	1	0.001	U	0.00028	QJ	0.00065	U	4.9E-06	QJ	0.00059	U	--		0.000035	QJ	0.00078	U	0.000025	QJ	4.6E-06	QJ	0.000022	U
PCB 127 (BZ)	mg/Kg	1	0.001	U	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000012	J	0.00078	U	0.00007	U	0.000013	U	0.000022	U
PCB 128	mg/Kg	1	0.0026		0.0072		0.00082		0.000027	J	0.0025		--		0.0011		0.0026		0.00022		0.00019		0.000016	J
PCB 129 (BZ)	mg/Kg	1	0.016	BC	0.042	BC	0.0069	BC	0.00015	BC	0.014	BC	--		0.006	BC	0.016	BC	0.0012	BC	0.0013	BC	0.00013	BC
PCB 130 (BZ)	mg/Kg	1	0.0012		0.0027		0.0003	J	0.000014	QJ	0.00077		--		0.00043		0.00099	Q	0.000096		0.000077		5.4E-06	QJ
PCB 131 (BZ)	mg/Kg	1	0.001	U	0.00079	J	0.00065	U	0.000035	U	0.00019	QJ	--		0.00013		0.00078	U	0.000027	QJ	0.00001	QJ	0.000022	U
PCB 132 (BZ)	mg/Kg	1	0.0051		0.015		0.0021	B	0.000052		0.0054	B	--		0.0022		0.0065	B	0.00043		0.00039	B	0.000043	
PCB 133 (BZ)	mg/Kg	1	0.00041	J	0.00081		0.00065	U	0.000035	U	0.00024	J	--		0.00011		0.00022	QJ	0.000026	QJ	0.000017		0.000022	U
PCB 134 (BZ)	mg/Kg	1	0.001	C	0.0029	C	0.00035	CJ	0.000011	CJ	0.00081	QC	--		0.00042	C	0.00081	QC	0.000081	C	0.00007	C	0.000011	CJ
PCB 135	mg/Kg	1	0.0062	QC	0.014	C	0.0022	C	0.000067	C	0.0048	C	--		0.002	C	0.0058	QC	0.00042	QC	0.00047	C	0.000077	C
PCB 136	mg/Kg	1	0.0024		0.006		0.00074		0.000024	QJ	0.0019		--		0.00083		0.0025		0.00018		0.00016		0.000023	
PCB 137 (BZ)	mg/Kg	1	0.00085	J	0.002		0.00027	J	0.000035	U	0.00063		--		0.00034		0.00072	J	0.000056	J	0.000042		0.000022	U
PCB 138	mg/Kg	1	0.016	BC	0.042	BC	0.0069	BC	0.00015	BC	0.014	BC	--		0.006	BC	0.016	BC	0.0012	BC	0.0013	BC	0.00013	BC
PCB 139 (BZ)	mg/Kg	1	0.00039	QCJ	0.001	QC	0.00065	U	0.000035	U	0.00022	CJ	--		0.00014	C	0.00022	QCJ	0.000034	CJ	0.000014	C	0.000022	U
PCB 140 (BZ)	mg/Kg	1	0.00039	QCJ	0.001	QC	0.00065	U	0.000035	U	0.00022	CJ	--		0.00014	C	0.00022	QCJ	0.000034	CJ	0.000014	C	0.000022	U
PCB 141	mg/Kg	1	0.0032		0.0096		0.0014		0.000026	QJ	0.0029		--		0.0014		0.0025		0.00021		0.00025		0.000039	
PCB 142 (BZ)	mg/Kg	1	0.001	U	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000077	U	0.00078	U	0.00007	U	0.000013	U	0.000022	U
PCB 143 (BZ)	mg/Kg	1	0.001	C	0.0029	C	0.00035	CJ	0.000011	CJ	0.00081	QC	--		0.00042	C	0.00081	QC	0.000081	C	0.00007	C	0.000011	CJ
PCB 144 (BZ)	mg/Kg	1	0.00077	J	0.0025		0.0003	J	0.000035	U	0.00061		--		0.00032		0.00054	J	0.000063	QJ	0.000056		0.000014	QJ
PCB 145 (BZ)	mg/Kg	1	0.001	U	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000077	U	0.00078	U	0.00007	U	0.000013	U	0.000022	U
PCB 146 (BZ)	mg/Kg	1	0.003		0.0058		0.00087	Q	0.000023	QJ	0.0019		--		0.00084		0.0028		0.00021		0.00019		0.00002	J
PCB 147 (BZ)	mg/Kg	1	0.013	BC	0.033	BC	0.0055	BC	0.00014	BC	0.012	BC	--		0.0047	BC	0.013	BC	0.00095	BC	0.0011	BC	0.00013	BC
PCB 148 (BZ)	mg/Kg	1	0.001	U	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000077	U	0.00078	U	0.00007	U	0.000013	U	0.000022	U
PCB 149	mg/Kg	1	0.013	BC	0.033	BC	0.0055	BC	0.00014	BC	0.012	BC	--		0.0047	BC	0.013	BC	0.00095	BC	0.0011	BC	0.00013	BC
PCB 150 (BZ)	mg/Kg	1	0.001	U	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000077	U	0.00078	U	0.00007	U	0.000013	U	0.000022	U
PCB 151	mg/Kg	1	0.0062	QC	0.014	C	0.0022	C	0.000067	C	0.0048	C	--		0.002	C	0.0058	QC	0.00042	QC	0.00047	C	0.000077	C
PCB 152 (BZ)	mg/Kg	1	0.00038	J	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000077	U	0.00078	U	0.00007	U	0.000013	U	0.000022	U
PCB 153	mg/Kg	1	0.014	BC	0.033	BC	0.0066	BC	0.00014	BC	0.012	BC	--		0.0048	BC	0.013	BC	0.00097	BC	0.001	BC	0.00015	BC
PCB 154 (BZ)	mg/Kg	1	0.0062	QC	0.014	C	0.0022	C	0.000067	C	0.0048	C	--		0.002	C	0.0058	Q	0.00042	QC	0.00047	C	0.000077	C
PCB 155 (BZ)	mg/Kg	1	0.001	U	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000077	U	0.00078	U	0.00007	U	6.9E-06	J	0.000022	U
PCB 156	mg/Kg	1	0.0021	C	0.0044	C	0.00059	CJ	0.000021	QCJ	0.00087	C	--		0.00066	C	0.0016	C	0.00013	C	0.000087	C	0.000012	QCJ
PCB 157	mg/Kg	1	0.0021	C	0.0044	C	0.00059	CJ	0.000021	QCJ	0.00087	C	--		0.00066	C	0.0016	C	0.00013	C	0.000087	C	0.000012	QCJ
PCB 158	mg/Kg	1	0.0016		0.0045		0.00058	J	0.000017	J	0.0015		--		0.00061		0.0014		0.00011		0.00011		0.000013	J
PCB 159 (BZ)	mg/Kg	1	0.00023	QJ	0.00042	QJ	0.00065	U	0.000035	U	0.00059	U	--		0.00006	QJ	0.00078	U	0.000011	QJ	0.000011	QJ	4.6E-06	J
PCB 160 (BZ)	mg/Kg	1	0.016	BC	0.042	BC	0.0069	BC	0.00015	BC	0.014	BC	--		0.006	BC	0.016	BC	0.0012	BC	0.0013	BC	0.00013	BC
PCB 161 (BZ)	mg/Kg	1	0.001	U	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000077	U	0.00078	U	0.00007	U	0.000013	U	0.000022	U
PCB 162 (BZ)	mg/Kg	1	0.0017	Q	0.00083	Q	0.00065	U	5.3E-06	QJ	0.00018	QJ	--		0.000089	Q	0.0017	Q	0.00005	QJ	0.000035	Q	0.000022	U
PCB 163 (BZ)	mg/Kg	1	0.016	BC	0.042	BC	0.0069	BC	0.00015	BC	0.014	BC	--		0.006	BC	0.016	BC	0.0012	BC	0.0013	BC	0.00013	BC
PCB 164 (BZ)	mg/Kg	1	0.0015		0.003		0.00044	J	0.000011	QJ	0.001		--		0.00044		0.0011	Q	0.000099		0.000095		8.1E-06	QJ
PCB 165 (BZ)	mg/Kg	1	0.001	U	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000077	U	0.00078	U	0.00007	U	0.000013	U	0.000022	U
PCB 166 (BZ)	mg/Kg	1	0.00051	QJ	0.00027	QJ	0.00065	U	0.000035	U	0.00012	QJ	--		0.000088		0.0002	J	0.000019	J	0.000019		4.9E-06	QJ
PCB 167	mg/Kg	1	0.00078	J	0.0015		0.00021	J	5.8E-06	J	0.0004	QJ	--		0.00022		0.00058	QC	0.000043	J	0.000042		5.1E-06	QJ
PCB 168 (BZ)	mg/Kg	1	0.014	BC	0.033	BC	0.0066	BC	0.00014	BC	0.012	BC	--		0.0048	BC	0.013	BC	0.00097	BC	0.001	BC	0.00015	BC
PCB 169	mg/Kg	1	0.00024	QJ	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000077	U	0.00078	U	0.000011	QJ	1.3E-06	QJ	0.000022	U
PCB 170	mg/Kg	1	0.0046		0.0094		0.0016		0.000039		0.0029		--		0.0016		0.0034		0.00026		0.00041		0.000064	
PCB 171	mg/Kg	1	0.0015	C	0.0031	C	0.00048	QCJ	0.000012	QCJ	0.00075	QC	--		0.00049	C	0.00073	QCJ	0.000078	Q	0.00013	C	0.000022	CJ
PCB 172 (BZ)	mg/Kg	1	0.001	J	0.0018		0.00031	J	0.00001	QJ	0.00047	J	--		0.00031		0.00038	QJ	0.000049	QJ	0.000087		0.000016	QJ

TABLE 4-16

ANALYTICAL RESULTS
HACKENSACK RIVER SEDIMENT SAMPLES
STANDARD CHLORINE SITE RIVER FRONTAGE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	HRWC-5 05/09/08 0.0-1.0 ft[2] Primary		HRWC-5 05/09/08 2.0-3.0 ft Primary		HRWC-6 05/02/08 0.0-1.0 ft[2] Primary		HRWC-6 05/02/08 2.0-3.0 ft Primary		HRWC-7 05/02/08 0.0-1.0 ft[2] Primary		HRWC-7 05/02/08 0.0-1.0 ft[2] Duplicate		HRWC-7 05/07/08 2.0-3.0 ft Primary		HRWC-8 05/02/08 0.0-1.0 ft[2] Primary		HRWC-8 05/02/08 2.0-3.0 ft Primary		HRWC-9 04/24/08 0.0-1.0 ft[2] Primary		HRWC-9 04/24/08 2.0-3.0 ft Primary	
Polychlorinated Biphenyls (Congeners/Homoloques) (Continued)																								
PCB 173 (BZ)	mg/Kg	1	0.0015	C	0.0031	C	0.00048	QCJ	0.000012	QCJ	0.00075	QC	--		0.00049	C	0.00073	QCJ	0.000078	QC	0.00013	C	0.000022	CJ
PCB 174	mg/Kg	1	0.0042		0.01		0.0016		0.000037		0.0033		--		0.0015		0.0032		0.00024		0.00043		0.000092	
PCB 175 (BZ)	mg/Kg	1	0.00026	J	0.00052	J	0.00065	U	0.000035	U	0.00059	U	--		0.000069	QJ	0.00078	U	0.000019	QJ	0.000017		0.000022	U
PCB 176 (BZ)	mg/Kg	1	0.00062	J	0.0015		0.00021	J	0.000035	U	0.00037	QJ	--		0.00021		0.00033	QJ	0.000037	QJ	0.00005		0.000013	J
PCB 177 (BZ)	mg/Kg	1	0.0028		0.0061		0.00094		0.000021	QJ	0.0019		--		0.00088		0.0016	Q	0.00017		0.00026		0.000048	
PCB 178 (BZ)	mg/Kg	1	0.0012		0.0022		0.00029	J	0.000014	QJ	0.00058	J	--		0.00034		0.00062	QJ	0.000073		0.000095		0.000027	
PCB 179 (BZ)	mg/Kg	1	0.0023		0.005		0.00066	Q	0.000023	QJ	0.0015		--		0.00068		0.0018		0.00014		0.00018		0.000044	
PCB 180	mg/Kg	1	0.0095	C	0.02	C	0.004	C	0.000094	C	0.0071	C	--		0.0033	C	0.0067	C	0.00053	C	0.001	C	0.00021	C
PCB 181 (BZ)	mg/Kg	1	0.001	U	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000023	J	0.00078	U	0.00007	U	0.000013	U	0.000022	U
PCB 182 (BZ)	mg/Kg	1	0.001	U	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000077	U	0.00078	U	0.000024	QJ	0.000013	U	0.000022	U
PCB 183	mg/Kg	1	0.0025	Q	0.0065		0.001	Q	0.000024	QJ	0.0022		--		0.001		0.002		0.00017	Q	0.00027		0.000066	
PCB 184	mg/Kg	1	0.00012	J	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000006	QJ	0.00078	U	0.00007	U	0.000013	U	0.000022	U
PCB 185 (BZ)	mg/Kg	1	0.0007	J	0.0013		0.00065	U	0.000035	U	0.00033	J	--		0.00018	Q	0.00024	QJ	0.000033	J	0.000056		0.000013	QJ
PCB 186 (BZ)	mg/Kg	1	0.001	U	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000077	U	0.00078	U	0.00007	U	0.000013	U	0.000022	U
PCB 187	mg/Kg	1	0.0065		0.014		0.0026		0.000058		0.0045		--		0.002		0.0045		0.00039		0.00061		0.00015	
PCB 188 (BZ)	mg/Kg	1	0.001	U	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000077	U	0.00078	U	0.00007	U	0.000013	U	0.000022	U
PCB 189	mg/Kg	1	0.00025	QJ	0.00037	QJ	0.00065	U	0.000035	U	0.000083	QJ	--		0.00012		0.00078	U	0.000018	QJ	0.000018		3.3E-06	J
PCB 190 (BZ)	mg/Kg	1	0.0011		0.0021		0.00027	J	0.000035	U	0.00065		--		0.00036		0.00061	J	0.00006	QJ	0.000095		0.000026	
PCB 191 (BZ)	mg/Kg	1	0.00016	QJ	0.00048	J	0.00065	U	0.000035	U	0.00012	QJ	--		0.0001		0.00078	U	0.000021	QJ	0.000021		0.000022	U
PCB 192 (BZ)	mg/Kg	1	0.00016	J	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000077	U	0.00078	U	0.00007	U	0.000013	U	0.000022	U
PCB 193 (BZ)	mg/Kg	1	0.0095	C	0.02	C	0.004	C	0.000094	C	0.0071	C	--		0.0033	C	0.0067	C	0.00053	C	0.001	C	0.00021	C
PCB 194	mg/Kg	1	0.0025	Q	0.0053		0.00064	QJ	0.000022	QJ	0.0015		--		0.001		0.0013	Q	0.00016		0.00026		0.000095	
PCB 195	mg/Kg	1	0.0012		0.0022		0.00035	QJ	0.000011	QJ	0.00052	J	--		0.00043		0.00058	J	0.000067	J	0.000094		0.000023	
PCB 196 (BZ)	mg/Kg	1	0.0015		0.0029		0.00052	J	0.000035	U	0.00092		--		0.0005		0.0008		0.000095		0.00013		0.00007	
PCB 197 (BZ)	mg/Kg	1	0.00021	Q	0.0002	QJ	0.00065	U	0.000035	U	0.00059	U	--		0.000048	J	0.00078	U	0.000014	QJ	9.2E-06	J	0.000007	J
PCB 198 (BZ)	mg/Kg	1	0.004	C	0.0063	C	0.0012	C	0.000027	CJ	0.0022	C	--		0.0011	C	0.0021	C	0.00023	C	0.00032	C	0.00031	C
PCB 199 (BZ)	mg/Kg	1	0.00048	QJ	0.00072	J	0.00065	U	0.000035	U	0.00018	QJ	--		0.00013		0.00027	J	0.000028	J	0.000032		0.000013	J
PCB 201	mg/Kg	1	0.00047	QJ	0.00084		0.00065	U	0.000035	U	0.00019	QJ	--		0.00016		0.00023	QJ	0.000031	QJ	0.000034		0.000032	
PCB 201 (BZ)	mg/Kg	1	0.004	C	0.0063	C	0.0012	C	0.000027	C	0.0022	C	--		0.0011	C	0.0021	C	0.00023	C	0.00032	C	0.00031	C
PCB 202 (BZ)	mg/Kg	1	0.00097	J	0.0017	Q	0.00035	J	0.000035	U	0.00042	QJ	--		0.00026		0.00049	J	0.000067	J	0.000076		0.00014	
PCB 203 (BZ)	mg/Kg	1	0.0021		0.0037		0.00058	QJ	0.000015	QJ	0.0013		--		0.00061		0.00083	Q	0.00015		0.00019		0.00014	
PCB 204 (BZ)	mg/Kg	1	0.001	U	0.00081	U	0.00065	U	0.000035	U	0.00059	U	--		0.000077	U	0.00078	U	0.00007	U	0.000013	U	0.000022	U
PCB 205 (BZ)	mg/Kg	1	0.00031	J	0.00026	QJ	0.00065	U	0.000035	U	0.000045	QJ	--		0.0001		0.00078	U	0.000016	QJ	0.000015		0.000004	QJ
PCB 206	mg/Kg	1	0.0032		0.0037		0.00066		0.000018	QJ	0.0013		--		0.00083		0.0015	Q	0.00015		0.00017		0.00042	
PCB 207	mg/Kg	1	0.00072	J	0.00041	J	0.00065	U	0.000035	U	0.00011	QJ	--		0.00011		0.00019	J	0.000031	QJ	0.00002		0.000041	
PCB 208 (BZ)	mg/Kg	1	0.0011		0.0012		0.00065	U	0.000035	U	0.00037	QJ	--		0.00024		0.00051	QJ	0.000074		0.000062		0.00022	
Monochlorobiphenyl (total)	mg/Kg	1	0.0022	QB	0.0011	BJQ	0.00025	QJ	0.000045	QBJ	0.00015	J	--		0.0002	BQ	0.0016	QJ	0.000095	QBJ	9.3E-06	QJ	0.000025	BJQ
Dichlorobiphenyl (total)	mg/Kg	1	0.024	QB	0.049	BQ	0.0052	QB	0.00023	QB	0.0055	QB	--		0.0041	QB	0.036	QB	0.0017	BQ	0.0002	QB	0.000069	QBJ
Trichlorobiphenyl (total)	mg/Kg	1	0.089	BQ	0.41	BQ	0.028	BQ	0.00093	QB	0.021	BQ	--		0.028	BQ	0.19	BQ	0.0097	BQ	0.00071	QB	0.000099	BJQ
Tetrachlorobiphenyl (total)	mg/Kg	1	0.16	BQ	0.73	BQ	0.062	BQ	0.0016	BQ	0.071	BQ	--		0.056	QB	0.34	BQ	0.017	BQ	0.0025	BQ	0.00018	BQ
Pentachlorobiphenyl (total)	mg/Kg	1	0.12	QB	0.4	QB	0.045	BQ	0.0012	QB	0.098	BQ	--		0.045	QB	0.2	QB	0.011	QB	0.0049	QB	0.00042	QB
Hexachlorobiphenyl (total)	mg/Kg	1	0.08	QB	0.19	BQ	0.03	BQ	0.00073	QB	0.065	BQ	--		0.028	BQ	0.075	QB	0.0056	QB	0.0057	BQ	0.0007	QB
Heptachlorobiphenyl (total)	mg/Kg	1	0.04	Q	0.084	Q	0.014	Q	0.00033	Q	0.027	Q	--		0.013	Q	0.026	Q	0.0023	Q	0.0037		0.00079	Q
Octachlorobiphenyl (total)	mg/Kg	1	0.014	Q	0.024	Q	0.0037	Q	0.000075	JQ	0.0073	Q	--		0.0044		0.0066	Q	0.00086	Q	0.0012		0.00084	Q
Nonachlorobiphenyl (total)	mg/Kg	1	0.005		0.0053		0.00066		0.000018	QJ	0.0018	Q	--		0.0012		0.0022	Q	0.00025	Q	0.00026		0.00068	
Decachlorobiphenyl	mg/Kg	1	0.0046		0.0036		0.00053	QJ	0.000034	J	0.0015		--		0.0015		0.002		0.00023	Q	0.00017		0.00046	
Pesticides/Herbicides																								
2,4,5-T	mg/Kg	--	0.0082	U	0.0064	U	0.0051	U	0.011	U	0.0046	U	--		0.0048	U	0.0061	U	0.022	U	0.0041	U	0.0071	U
2,4-D	mg/Kg	--	0.052	U	0.041	U	0.033	U	0.07	U	0.029	U	--		0.031	U	0.039	U	0.14	U	0.026	U	0.045	U

TABLE 4-16

ANALYTICAL RESULTS
HACKENSACK RIVER SEDIMENT SAMPLES
STANDARD CHLORINE SITE RIVER FRONTAGE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	HRWC-5 05/09/08 0.0-1.0 ft[2] Primary		HRWC-5 05/09/08 2.0-3.0 ft Primary		HRWC-6 05/02/08 0.0-1.0 ft[2] Primary		HRWC-6 05/02/08 2.0-3.0 ft Primary		HRWC-7 05/02/08 0.0-1.0 ft[2] Primary		HRWC-7 05/02/08 0.0-1.0 ft[2] Duplicate		HRWC-7 05/07/08 2.0-3.0 ft Primary		HRWC-8 05/02/08 0.0-1.0 ft[2] Primary		HRWC-8 05/02/08 2.0-3.0 ft Primary		HRWC-9 04/24/08 0.0-1.0 ft[2] Primary		HRWC-9 04/24/08 2.0-3.0 ft Primary	
Pesticides/Herbicides (Continued)																								
2,4-DB	mg/Kg	--	0.047	U	0.037	U	0.029	U	0.062	U	0.026	U	--		0.028	U	0.035	U	0.13	U	0.023	U	0.04	U
4,4'-DDD	mg/Kg	13	0.0095	JP	0.0015	U	0.0019	JP	0.00051	U	0.008	JP	--		0.0047		0.003	J	0.001	U	0.0006	JP	0.00033	U
4,4'-DDE	mg/Kg	9	0.025		0.067		0.0055	JP	0.00034	U	0.0088	JP	--		0.0027	P	0.014	J	0.00091	J	0.00052	JP	0.00022	U
4,4'-DDT	mg/Kg	8	0.003	U	0.0023	U	0.0018	U	0.00078	U	0.0017	U	--		0.00035	U	0.0022	U	0.0016	U	0.00029	U	0.00051	U
Aldrin	mg/Kg	0.2	0.0023	U	0.0018	U	0.0014	U	0.00061	U	0.0013	U	--		0.00027	U	0.0017	U	0.0012	U	0.00023	U	0.00039	U
alpha-BHC	mg/Kg	0.5	0.0033	U	0.0026	U	0.0021	U	0.00087	U	0.0019	U	--		0.00039	U	0.0025	U	0.0018	U	0.00033	U	0.00057	U
alpha-Chlordane	mg/Kg	1	0.0013	U	0.0011	U	0.00084	U	0.00036	U	0.0077	J	--		0.00067	JP	0.001	U	0.00073	U	0.0011	J	0.00023	U
beta-BHC	mg/Kg	2	0.0025	U	0.002	U	0.0016	U	0.00067	U	0.0014	U	--		0.0003	U	0.0019	U	0.0014	U	0.00025	U	0.00044	U
delta-BHC	mg/Kg	--	0.0083	J	0.022		0.0031	JP	0.0006	U	0.0051	J	--		0.0012	JP	0.0074	J	0.0014	JP	0.0003	JP	0.00039	U
Dieldrin	mg/Kg	0.2	0.0016	U	0.0013	U	0.001	U	0.00043	U	0.002	JP	--		0.00019	U	0.0012	U	0.00087	U	0.00016	U	0.00028	U
Endosulfan I	mg/Kg	6800	0.0023	U	0.0018	U	0.0014	U	0.0006	U	0.0013	U	--		0.00027	U	0.0017	U	0.0012	U	0.00022	U	0.00039	U
Endosulfan II	mg/Kg	6800	0.01	JP	0.0039	U	0.0031	U	0.0039	JP	0.0028	U	--		0.00059	U	0.0037	U	0.0027	U	0.0005	U	0.00086	U
Endosulfan sulfate	mg/Kg	6800	0.0035	U	0.0028	U	0.0022	U	0.00093	U	0.0029	J	--		0.00041	U	0.0026	U	0.0019	U	0.00035	U	0.0006	U
Endrin	mg/Kg	340	0.0017	U	0.0014	U	0.0011	U	0.00046	U	0.00097	U	--		0.0002	U	0.0013	U	0.00094	U	0.00017	U	0.0003	U
Endrin aldehyde	mg/Kg	--	0.0027	U	0.0022	U	0.0017	U	0.00072	U	0.0015	U	--		0.00032	U	0.0021	U	0.0015	U	0.00027	U	0.00047	U
Endrin ketone	mg/Kg	--	0.0033	JP	0.0059	JP	0.0016	U	0.00067	U	0.0016	JP	--		0.00039	JP	0.0019	U	0.0014	U	0.00025	U	0.00043	U
gamma-Chlordane	mg/Kg	1	0.0022	U	0.0017	U	0.0014	U	0.00059	U	0.01	JP	--		0.0016	JP	0.0017	U	0.0012	U	0.0015	J	0.00038	U
Heptachlor	mg/Kg	0.7	0.0028	U	0.016	JP	0.0017	U	0.00073	U	0.0016	U	--		0.00074	JP	0.012	J	0.0015	U	0.00027	U	0.00047	U
Heptachlor epoxide	mg/Kg	0.3	0.0041	JP	0.019	P	0.0044	JP	0.00057	U	0.0019	JP	--		0.00026	U	0.0039	J	0.0012	U	0.00022	U	0.00037	U
Lindane	mg/Kg	2	0.0079	J	0.0073	JP	0.0061	J	0.00079	U	0.0069	J	--		0.0055		0.0073	J	0.0016	U	0.00043	JP	0.00052	JP
Methoxychlor	mg/Kg	5700	0.009	U	0.0071	U	0.0056	U	0.0024	U	0.0051	U	--		0.0011	U	0.0067	U	0.0049	U	0.00089	U	0.0015	U
Silvex	mg/Kg	--	0.0064	U	0.0051	U	0.004	U	0.0086	U	0.0036	U	--		0.0038	U	0.0048	U	0.017	U	0.0032	U	0.0056	U
Toxaphene	mg/Kg	3	0.15	U	0.12	U	0.094	U	0.04	U	0.085	U	--		0.018	U	0.11	U	0.081	U	0.015	U	0.026	U
Metals																								
Aluminum	mg/Kg	--	15300		25700		12200	J	7170	J	17400	J	16800	J	22200		17200	J	11700	J	23500		11500	
Antimony	mg/Kg	450	2.5	B	17.9		3.5		0.87	B	7.6		6.3		1.4	U	9.2		1.2	B	6.3	BJ	1.2	BJ
Arsenic	mg/Kg	19	14.5		12.9		**50.3**		**33.4**		13.1		9.6		13.7	B	**52.5**		7.4		3	U	13.4	
Barium	mg/Kg	59000	112		92.6		140		43.5	B	74.1		67		56		125		34.8	B	49.9		41.4	B
Beryllium	mg/Kg	140	1.1		1.5		0.75		0.39	B	0.26	B	0.26	B	0.047	U	0.75	B	0.54	B	0.04	U	0.78	BJ
Cadmium	mg/Kg	78	0.94	B	1.3		1		0.16	U	0.6	B	0.13	U	2.7		1.3		0.33	U	0.12	U	0.11	U
Calcium	mg/Kg	--	7240		59900		8460		5460		40200		54400		103000		26400		6170		90300		5680	
Chromium[4]	mg/Kg	--	589	J	6310	J	1360	J	149	J	4410	J	3680	J	11600		4750	J	295	J	14800	J	1400	J
Chromium (Hexavalent)[4]	mg/Kg	20	8.1		**27.9**		4.1		0.4	U	8.3		10.8		**83.2**		0.4	U	0.4	U	**60.2**		**38.7**	
Cobalt	mg/Kg	590	15.6		128		16.3		5.9	B	75.2		100		103		53.1		5	B	84.7	J	11.9	J
Copper	mg/Kg	45000	121		91.8		180		68		815		60.2		43.5		201		15.9	B	51.3		16.5	
Iron	mg/Kg	--	38300	J	87400	J	34000	J	16500	J	68000	J	88400	J	81900		56700	J	18100	J	75800		31900	
Lead	mg/Kg	800	127		128		206		80.7		98.3		63		91.7		232		37.9		72		26.6	
Magnesium	mg/Kg	--	9670		37900		8390		6690		24700		24000		41900		16800		9230		66400		5180	
Manganese	mg/Kg	5900	729		919		418		205		1180		1030		994		611		174		958		167	
Mercury	mg/Kg	65	2.7		6.8		7.7		2.9		1.9		2.2		0.87		6.9		0.24		0.11		0.28	
Nickel	mg/Kg	23000	49.5		482		57.8		19.9		264		351		376		215		15.8	B	288		28.4	
Potassium	mg/Kg	--	2580		881	B	2040		1770		1090		1030		513	B	2050		2350	B	266	B	2440	
Selenium	mg/Kg	5700	1.9		1.7		2.2		1.1	B	1.3		1.7		0.88	U	2.2		2.1	B	0.74	U	1.1	
Silver	mg/Kg	5700	2.3	J	1.8	J	1.7		0.43	B	1.3		1.3		0.83	J	1.7		0.45	B	0.47	B	0.33	B
Sodium	mg/Kg	--	5260		2460		3300		11900		2750		3030		2650		4810		27000		1880		4630	
Thallium	mg/Kg	79	2.4	B	8.4		1.9		1.1	U	3.8		4.9		4.8		4.2		2.3	U	5.4		0.72	U
Vanadium	mg/Kg	1100	70.9		**1590**		77.6		24.6		542		688		1080		473		24.1	B	522		42	
Zinc	mg/Kg	110000	305		439		394		147		365		366		380		660		48.8		283	J	66.5	J

TABLE 4-16

ANALYTICAL RESULTS
HACKENSACK RIVER SEDIMENT SAMPLES
STANDARD CHLORINE SITE RIVER FRONTAGE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	HRWC-5 05/09/08 0.0-1.0 ft[2] Primary		HRWC-5 05/09/08 2.0-3.0 ft Primary		HRWC-6 05/02/08 0.0-1.0 ft[2] Primary		HRWC-6 05/02/08 2.0-3.0 ft Primary		HRWC-7 05/02/08 0.0-1.0 ft[2] Primary		HRWC-7 05/02/08 0.0-1.0 ft[2] Duplicate		HRWC-7 05/07/08 2.0-3.0 ft Primary		HRWC-8 05/02/08 0.0-1.0 ft[2] Primary		HRWC-8 05/02/08 2.0-3.0 ft Primary		HRWC-9 04/24/08 0.0-1.0 ft[2] Primary		HRWC-9 04/24/08 2.0-3.0 ft Primary	
Acid Volatile Sulfide/Simultaneously Extracted Metals																								
Acid Volatile Sulfide	umole	--	48.2		30.7		16.2		1.7		16.6		--		0.57	B	27.7		1.1	U	0.2	U	3.4	
Cadmium (SEM)	umol/g	--	0.013		0.029		0.0078		0.0024	B	0.0061		--		0.017		0.013		0.00086	B	0.0024	B	0.0015	B
Copper (SEM)	umol/g	--	1.3	J	1.5	J	1.7		0.91		0.45		--		0.41	J	1.7		0.063	B	0.66		0.025	
Lead (SEM)	umol/g	--	0.5		0.67		0.83		0.51		0.25		--		0.3		1		0.072		0.13		0.097	
Mercury (SEM)	umol/g	--	0.000091	B	0.00021		0.00038		0.000023	U	0.00077		--		0.00029		0.00016		0.000046	U	0.00023	J	0.000015	U
Nickel (SEM)	umol/g	--	0.39		4.9		1.8		0.27		1.3		--		6		1.8		0.18		4.1		0.27	
Silver (SEM)	umol/g	--	0.007		0.0079		0.0043		0.0017	B	0.004		--		0.0049		0.0043		0.00095	U	0.003		0.0003	U
Zinc (SEM)	umol/g	--	3.2	J	6.3	J	4.6		2		2.8		--		4.7	J	6		0.66		3.6	J	0.83	J
Toxicity Characteristic Leaching Procedure[5]																								
1,1-Dichloroethene	mg/L	0.7	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	--		0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
1,2-Dichloroethane	mg/L	0.5	0.026	U	0.026	U	0.026	U	0.026	U	0.026	U	--		0.026	U	0.026	U	0.026	U	0.026	U	0.026	U
1,4-Dichlorobenzene	mg/L	7.5	0.0046	U	0.035	J	0.0046	U	0.0046	U	0.0046	U	--		0.0046	U	0.039	J	0.0046	U	0.0046	U	0.0046	U
2,4,5-Trichlorophenol	mg/L	400	0.0041	U	0.0041	U	0.0041	U	0.0041	U	0.0041	U	--		0.0041	U	0.0041	U	0.0041	U	0.0041	U	0.0041	U
2,4,6-Trichlorophenol	mg/L	2	0.0026	U	0.0026	U	0.0026	U	0.0026	U	0.0026	U	--		0.0026	U	0.0026	U	0.0026	U	0.0026	U	0.0026	U
2,4-Dinitrotoluene	mg/L	0.13	0.0028	U	0.0028	U	0.0028	U	0.0028	U	0.0028	U	--		0.0028	U	0.0028	U	0.0028	U	0.0028	U	0.0028	U
2-Butanone	mg/L	200	0.033	U	0.033	U	0.029	U	0.029	U	0.029	U	--		0.029	U	0.029	U	0.029	U	0.029	U	0.029	U
Benzene	mg/L	0.5	0.037	U	0.037	U	0.033	U	0.033	U	0.033	U	--		0.033	U	0.033	U	0.033	U	0.033	U	0.033	U
Carbon Tetrachloride	mg/L	0.5	0.028	U	0.028	U	0.037	U	0.037	U	0.037	U	--		0.037	U	0.037	U	0.037	U	0.037	U	0.037	U
Chlorobenzene	mg/L	100	0.031	U	0.031	U	0.028	U	0.028	U	0.028	U	--		0.028	U	0.028	U	0.028	U	0.028	U	0.028	U
Chloroform	mg/L	6	0.029	U	0.029	U	0.031	U	0.031	U	0.031	U	--		0.031	U	0.031	U	0.031	U	0.031	U	0.031	U
Cresols	mg/L	200	0.0089	U	0.0089	U	0.035	J	0.0089	U	0.0089	U	--		0.0089	U	0.0089	U	0.0089	U	0.0089	U	0.0089	U
Hexachlorobenzene	mg/L	0.13	0.0049	U	0.0049	U	0.0049	U	0.0049	U	0.0049	U	--		0.0049	U	0.0049	U	0.0049	U	0.0049	U	0.0049	U
Hexachlorobutadiene	mg/L	0.5	0.0033	U	0.0033	U	0.0033	U	0.0033	U	0.0033	U	--		0.0033	U	0.0033	U	0.0033	U	0.0033	U	0.0033	U
Hexachloroethane	mg/L	3	0.0036	U	0.0036	U	0.0036	U	0.0036	U	0.0036	U	--		0.0036	U	0.0036	U	0.0036	U	0.0036	U	0.0036	U
Nitrobenzene	mg/L	2	0.0056	U	0.0056	U	0.0056	U	0.0056	U	0.0056	U	--		0.0056	U	0.0056	U	0.0056	U	0.0056	U	0.0056	U
Pentachlorophenol	mg/L	100	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	--		0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Pyridine	mg/L	5	0.011	U	0.011	U	0.011	U	0.011	U	0.011	U	--		0.011	U	0.011	U	0.011	U	0.011	U	0.011	U
Tetrachloroethene	mg/L	0.7	0.023	U	0.023	U	0.21		0.023	U	0.023	U	--		0.023	U	0.023	U	0.023	U	0.023	U	0.023	U
Trichloroethene	mg/L	0.5	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	--		0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
Vinyl chloride	mg/L	0.2	0.038	U	0.038	U	0.038	U	0.038	U	0.038	U	--		0.038	U	0.038	U	0.038	U	0.038	U	0.038	U
Arsenic	mg/L	5	0.17	B	0.17	B	0.17	B	0.27	B	0.17	B	--		0.12	B	0.16	B	0.18	B	0.15		0.18	
Barium	mg/L	100	0.19	B	0.25	B	0.36	BJ	0.078	BJ	0.22	BJ	--		0.023	B	0.27	B	0.026	BJ	0.069	B	0.075	B
Cadmium	mg/L	1	0.0044	B	0.0012	U	0.0012	U	0.0012	U	0.0012	U	--		0.0012	U	0.0023	B	0.0012	U	0.0012	U	0.0012	U
Chromium	mg/L	5	0.012	B	0.0011	U	0.0011	U	0.0093	B	0.0081	B	--		0.053	B	0.02	B	0.0025	B	0.19	B	0.16	B
Lead	mg/L	5	0.04	B	0.013	U	0.013	U	0.013	U	0.013	U	--		0.02	B	0.037	B	0.013	U	0.023	B	0.023	B
Mercury	mg/L	0.2	0.000055	U	0.000055	U	0.000055	U	0.000055	U	0.000055	U	--		0.000055	U	0.000055	U	0.000055	U	0.000055	U	0.000055	U
Selenium	mg/L	1	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	--		0.015	U	0.015	U	0.015	U	0.026	B	0.015	U
Silver	mg/L	5	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	--		0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U
RCRA Characteristics and Indicators																								
Corrosivity (pH)	SU	2<pH<12.5	7.75		8.29		8.05		7.28		7.81		--		--		8.24		7.69		6.02		9.06	
Cyanide (Reactivity)	mg/Kg	23000	0.63	B	2.8		1.1	J	0.33	U	1.4	J	--		0.36	B	2.7	J	1.8	J	0.67	U	0.22	B
Total Sulfide (Reactivity)	mg/Kg	--	1100		2180		1050		333		445		--		--		184		2350		86.1	U	15.9	U
Ignitability	none	--	No		No		No		No		No		--		--		No		No		No		No	
Total Organic Carbon	mg/Kg	--	63500		46300		23200		151000		18100		--		--		31100		58200		395000		6460	
Oxidation Reduction Potential	mV	--	118		155		171		285		293		--		--		313		273		317		269	
Total Petroleum Hydrocarbons	mg/Kg	--	917		674		402		508		501		--		--		51.8		852		559		16.8	
Percent Solids	%	--	38.6		49.1		61.7		28.9		68.4		--		69.9		65.2		51.4		14.3		77.4	

TABLE 4-16

ANALYTICAL RESULTS
HACKENSACK RIVER SEDIMENT SAMPLES
STANDARD CHLORINE SITE RIVER FRONTAGE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	HRWC-10 07/29/08 0.0-1.0 ft[2] Primary		HRWC-10 07/29/08 2.0-3.0 ft Primary		HRWC-11 04/23/08 0.0-1.0 ft[2] Primary		HRWC-11 04/23/08 2.0-3.0 ft Primary		HRWC-12 04/24/08 0.0-1.0 ft[2] Primary		HRWC-12 04/24/08 2.0-3.0 ft Primary		HRWC-13 04/23/08 0.0-1.0 ft[2] Primary		HRWC-13 04/23/08 2.0-3.0 ft Primary	
Volatile Organics																		
1,1,1-Trichloroethane	mg/Kg	4200	0.00097	U	0.0029	U	0.0014	U	0.0031	U	0.0016	U	0.0018	U	0.002	U	0.002	U
1,1,2,2-Tetrachloroethane	mg/Kg	3	0.0014	U	0.0043	U	0.0015	U	0.0034	U	0.0018	U	0.002	U	0.0022	U	0.0022	U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg	--	0.0017	U	0.005	U	0.0017	U	0.0037	U	0.002	U	0.0022	U	0.0024	U	0.0024	U
1,1,2-Trichloroethane	mg/Kg	6	0.0021	U	0.0064	U	0.0014	U	0.0032	U	0.0017	U	0.0019	U	0.0021	U	0.0021	U
1,1-Dichloroethane	mg/Kg	24	0.0011	U	0.0035	U	0.0013	U	0.0029	U	0.0016	U	0.0018	U	0.0019	U	0.0019	U
1,1-Dichloroethene	mg/Kg	150	0.0017	U	0.0051	U	0.0016	U	0.0035	U	0.0019	U	0.0021	U	0.0023	U	0.0023	U
1,2,4-Trichlorobenzene	mg/Kg	820	0.0018	U	0.0053	U	0.0014	U	0.0031	U	0.0016	U	0.0019	U	0.002	U	0.002	U
1,2-Dibromoethane	mg/Kg	0.04	0.0017	U	0.0052	U	0.0014	U	0.0031	U	0.0017	U	0.0019	U	0.002	U	0.002	U
1,2-Dichlorobenzene	mg/Kg	59000	0.0016	U	0.0048	U	0.0015	U	0.0033	U	0.0018	U	0.002	U	0.0021	U	0.0021	U
1,2-Dichloroethane	mg/Kg	3	0.0012	U	0.0037	U	0.0015	U	0.0033	U	0.0017	U	0.002	U	0.0021	U	0.0021	U
1,2-Dichloropropane	mg/Kg	5	0.0011	U	0.0033	U	0.0015	U	0.0034	U	0.0018	U	0.002	U	0.0021	U	0.0021	U
1,3-Dichlorobenzene	mg/Kg	59000	0.0013	U	0.004	U	0.0014	U	0.0032	U	0.0017	U	0.0019	U	0.002	U	0.002	U
1,4-Dichlorobenzene	mg/Kg	13	0.0013	U	0.0038	U	0.0015	U	0.0034	U	0.0018	U	0.002	U	0.0021	U	0.0021	U
2-Butanone	mg/Kg	44000	0.0018	U	0.0053	U	0.0013	U	0.0029	U	0.0016	U	0.014		0.0035	J	0.054	
2-Hexanone	mg/Kg	--	0.0014	U	0.0042	U	0.0011	U	0.0024	U	0.0013	U	0.0014	U	0.0015	U	0.0015	U
4-Methyl-2-pentanone	mg/Kg	--	0.0013	U	0.0039	U	0.0012	U	0.0026	U	0.0014	U	0.0016	U	0.0017	U	0.0017	U
Acetone	mg/Kg	--	0.018	J	0.03	U	0.0082	J	0.015	U	0.012	J	0.051		0.16		0.19	
Benzene	mg/Kg	5	0.0013	U	0.0041	U	0.0014	U	0.0031	U	0.0017	U	0.0019	U	0.002	U	0.0025	J
Bromodichloromethane	mg/Kg	3	0.0011	U	0.0034	U	0.0013	U	0.0029	U	0.0016	U	0.0018	U	0.0019	U	0.0019	U
Bromoform	mg/Kg	280	0.00088	U	0.0027	U	0.0014	U	0.0031	U	0.0016	U	0.0018	U	0.002	U	0.002	U
Bromomethane	mg/Kg	59	0.0015	U	0.0045	U	0.0017	U	0.0038	U	0.002	U	0.0023	U	0.0024	U	0.0024	U
Carbon disulfide	mg/Kg	110000	0.001	U	0.0031	U	0.0017	U	0.0037	U	0.002	U	0.0026	J	0.0025	J	0.0053	J
Carbon tetrachloride	mg/Kg	2	0.00089	U	0.0027	U	0.0012	U	0.0027	U	0.0014	U	0.0016	U	0.0017	U	0.0017	U
Chlorobenzene	mg/Kg	7400	0.0015	U	0.0046	U	0.0015	U	0.0034	U	0.0018	U	0.002	U	0.0021	U	0.0021	U
Chloroethane	mg/Kg	1100	0.0031	U	0.0093	U	0.0019	U	0.0043	U	0.0023	U	0.0026	U	0.0028	U	0.0028	U
Chloroform	mg/Kg	2	0.0012	U	0.0035	U	0.0014	U	0.0032	U	0.0017	U	0.0019	U	0.002	U	0.002	U
Chloromethane	mg/Kg	12	0.0017	U	0.0051	U	0.0015	U	0.0034	U	0.0018	U	0.002	U	0.0021	U	0.0021	U
cis-1,2-Dichloroethene	mg/Kg	560	0.0014	U	0.0042	U	0.0015	U	0.0033	U	0.0017	U	0.0019	U	0.0021	U	0.0021	U
cis-1,3-Dichloropropene	mg/Kg	7	0.0014	U	0.0041	U	0.0012	U	0.0027	U	0.0014	U	0.0016	U	0.0017	U	0.0017	U
Cyclohexane	mg/Kg	--	0.00074	U	0.0022	U	0.0013	U	0.003	U	0.0016	U	0.0018	U	0.0019	U	0.0019	U
Dibromochloromethane	mg/Kg	8	0.0014	U	0.0043	U	0.0013	U	0.0028	U	0.0015	U	0.0017	U	0.0018	U	0.0018	U
Dibromochloropropane	mg/Kg	--	0.0015	U	0.0045	U	0.0011	U	0.0025	U	0.0013	U	0.0015	U	0.0016	U	0.0016	U
Dichlorodifluoromethane	mg/Kg	230000	0.0013	U	0.004	U	0.0017	U	0.0039	U	0.002	U	0.0023	U	0.0025	U	0.0025	U
Ethylbenzene	mg/Kg	110000	0.0013	U	0.0039	U	0.0016	U	0.0036	U	0.0019	U	0.0021	U	0.0023	U	0.0023	U
Isopropylbenzene	mg/Kg	--	0.0014	U	0.0041	U	0.0014	U	0.0032	U	0.0017	U	0.0058	J	0.0021	U	0.011	
Methyl acetate	mg/Kg	--	0.0018	U	0.0054	U	0.0014	U	0.0032	U	0.0017	U	0.0019	U	0.002	U	0.002	U
Methylcyclohexane	mg/Kg	--	0.0014	U	0.0044	U	0.0015	U	0.0034	U	0.0018	U	0.002	U	0.0022	U	0.0022	U
Methylene chloride	mg/Kg	97	0.0086	J	0.023	J	0.001	U	0.0023	U	0.0012	U	0.0014	U	0.0015	U	0.0019	J
Methyltert-butylether	mg/Kg	320	0.0015	U	0.0045	U	0.0012	U	0.0028	U	0.0015	U	0.0017	U	0.0018	U	0.0018	U
Styrene	mg/Kg	260	0.0011	U	0.0032	U	0.0015	U	0.0034	U	0.0018	U	0.002	U	0.0022	U	0.0021	U
Tetrachloroethene	mg/Kg	5	0.0014	U	0.0041	U	0.0018	U	0.0039	U	0.0021	U	0.0023	U	0.0025	U	0.0025	U
Toluene	mg/Kg	91000	0.0015	U	0.0044	U	0.0011	U	0.0024	U	0.0013	U	0.0014	U	0.0015	U	0.0015	U
trans-1,2-Dichloroethene	mg/Kg	720	0.0012	U	0.0036	U	0.0016	U	0.0035	U	0.0019	U	0.0021	U	0.0022	U	0.0022	U
trans-1,3-Dichloropropene	mg/Kg	7	0.0012	U	0.0036	U	0.0012	U	0.0026	U	0.0014	U	0.0016	U	0.0017	U	0.0017	U
Trichloroethene	mg/Kg	20	0.0013	U	0.004	U	0.0015	U	0.0034	U	0.0018	U	0.002	U	0.0022	U	0.0022	U
Trichlorofluoromethane	mg/Kg	340000	0.0018	U	0.0055	U	0.0022	U	0.0049	U	0.0026	U	0.0029	U	0.0031	U	0.0031	U
Vinyl chloride	mg/Kg	2	0.00094	U	0.0028	U	0.0015	U	0.0034	U	0.0018	U	0.002	U	0.0022	U	0.0021	U
Xylene (total)	mg/Kg	170000	0.0045	U	0.013	U	0.0048	U	0.011	U	0.0056	U	0.0084	J	0.0068	U	0.012	J

TABLE 4-16

ANALYTICAL RESULTS
HACKENSACK RIVER SEDIMENT SAMPLES
STANDARD CHLORINE SITE RIVER FRONTAGE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	HRWC-10 07/29/08 0.0-1.0 ft[2] Primary		HRWC-10 07/29/08 2.0-3.0 ft Primary		HRWC-11 04/23/08 0.0-1.0 ft[2] Primary		HRWC-11 04/23/08 2.0-3.0 ft Primary		HRWC-12 04/24/08 0.0-1.0 ft[2] Primary		HRWC-12 04/24/08 2.0-3.0 ft Primary		HRWC-13 04/23/08 0.0-1.0 ft[2] Primary		HRWC-13 04/23/08 2.0-3.0 ft Primary	
Semivolatile Organics																		
1,1'-Biphenyl	mg/Kg	34000	0.81		0.12	U	0.031	U	0.055	U	0.17	J	0.81		0.17	J	0.27	J
2,2'-oxybis(1-chloropropane)	mg/Kg	--	0.041	U	0.14	U	0.033	U	0.06	U	0.026	U	0.04	U	0.035	U	0.04	U
2,4,5-Trichlorophenol	mg/Kg	68000	0.056	U	0.19	U	0.046	U	0.083	U	0.035	U	0.056	U	0.048	U	0.054	U
2,4,6-Trichlorophenol	mg/Kg	74	0.055	U	0.18	U	0.045	U	0.081	U	0.034	U	0.054	U	0.047	U	0.053	U
2,4-Dichlorophenol	mg/Kg	2100	0.02	U	0.067	U	0.017	U	0.03	U	0.013	U	0.02	U	0.017	U	0.02	U
2,4-Dimethylphenol	mg/Kg	14000	0.029	U	10		0.024	U	0.043	U	0.023	J	0.029	U	0.025	U	0.028	U
2,4-Dinitrophenol	mg/Kg	1400	0.81	U	2.7	U	0.66	U	1.2	U	0.5	U	0.8	U	0.69	U	0.78	U
2,4-Dinitrotoluene	mg/Kg	3	0.035	U	0.12	U	0.029	U	0.052	U	0.022	U	0.035	U	0.03	U	0.034	U
2,6-Dinitrotoluene	mg/Kg	3	0.044	U	0.15	U	0.036	U	0.065	U	0.027	U	0.043	U	0.038	U	0.042	U
2-Chloronaphthalene	mg/Kg	--	0.039	U	0.13	U	0.032	U	0.058	U	0.025	U	0.039	U	0.034	U	0.038	U
2-Chlorophenol	mg/Kg	2200	0.034	U	0.11	U	0.028	U	0.05	U	0.021	U	0.034	U	0.029	U	0.033	U
2-Methylnaphthalene	mg/Kg	2400	1.8		0.22	J	0.031	J	0.055	U	0.44		11		0.29	J	3.3	
2-Methylphenol	mg/Kg	3400	0.043	U	37		0.035	U	0.063	U	0.027	U	0.042	U	0.037	U	0.041	U
2-Nitroaniline	mg/Kg	23000	0.041	U	0.14	U	0.033	U	0.06	U	0.026	U	0.041	U	0.035	U	0.04	U
2-Nitrophenol	mg/Kg	--	0.054	U	0.18	U	0.044	U	0.08	U	0.034	U	0.054	U	0.047	U	0.052	U
3,3'-Dichlorobenzidine	mg/Kg	4	0.15	U	0.51	U	0.13	U	0.23	U	0.096	U	0.15	U	0.13	U	0.15	U
3-Nitroaniline	mg/Kg	--	0.058	U	0.19	U	0.048	U	0.086	U	0.037	U	0.058	U	0.05	U	0.057	U
4,6-Dinitro-2-methylphenol	mg/Kg	68	0.48	U	1.6	U	0.39	U	0.71	U	0.3	U	0.48	U	0.41	U	0.47	U
4-Bromophenylphenyl ether	mg/Kg	--	0.031	U	0.1	U	0.025	U	0.045	U	0.019	U	0.03	U	0.026	U	0.03	U
4-Chloro-3-methylphenol	mg/Kg	--	0.042	U	0.14	U	0.034	U	0.061	U	0.026	U	0.041	U	0.036	U	0.04	U
4-Chloroaniline	mg/Kg	--	0.059	U	0.19	U	0.048	U	0.086	U	0.037	U	0.058	U	0.05	U	0.057	U
4-Chlorophenyl phenyl ether	mg/Kg	--	0.034	U	0.11	U	0.028	U	0.05	U	0.021	U	0.033	U	0.029	U	0.033	U
4-Methylphenol	mg/Kg	340	0.16	J	200		0.035	U	0.063	U	0.13	J	0.31	J	0.084	J	0.18	J
4-Nitroaniline	mg/Kg	--	0.029	U	0.095	U	0.023	U	0.042	U	0.018	U	0.028	U	0.025	U	0.028	U
4-Nitrophenol	mg/Kg	--	0.053	U	0.18	U	0.043	U	0.078	U	0.033	U	0.053	U	0.046	U	0.051	U
Acenaphthene	mg/Kg	37000	2.8		0.47	J	0.029	U	0.052	U	2.3		9.8		1.3		4.5	
Acenaphthylene	mg/Kg	300000	10		1.7	J	0.051	J	0.058	J	0.31	J	5.2		3.6		3.1	
Acetophenone	mg/Kg	5	0.041	U	0.14	U	0.034	U	0.061	U	0.026	U	0.041	U	0.036	U	0.04	U
Anthracene	mg/Kg	30000	19		1.9	J	0.044	J	0.057	U	5.7		17		4.5		9.1	
Atrazine	mg/Kg	2400	0.047	U	0.16	U	0.038	U	0.069	U	0.029	U	0.046	U	0.04	U	0.045	U
Benzaldehyde	mg/Kg	68000	0.072	U	0.24	U	0.059	U	0.11	U	0.045	U	0.072	U	0.074	J	0.07	U
Benzo(a)anthracene	mg/Kg	2	**73**		**5.2**		0.039	J	0.078	J	**9.4**		**19**		**14**		**13**	
Benzo(a)pyrene	mg/Kg	0.2	**55**		**4.3**		0.017	U	0.041	J	**8.5**		**15**		**12**		**9.9**	
Benzo(b)fluoranthene	mg/Kg	2	**72**		**4.9**		0.021	U	0.047	J	**11**		**16**		**14**		**12**	
Benzo(ghi)perylene	mg/Kg	30000	20		2.1	J	0.019	U	0.034	U	5.3		7.1		8.1		4.6	
Benzo(k)fluoranthene	mg/Kg	23	0.022	U	0.072	U	0.018	U	0.032	U	0.014	U	0.022	U	6.2		0.021	U
Bis(2-chloroethoxy)methane	mg/Kg	--	0.032	U	0.11	U	0.026	U	0.047	U	0.02	U	0.031	U	0.027	U	0.031	U
Bis(2-chloroethyl)ether	mg/Kg	2	0.015	U	0.051	U	0.013	U	0.023	U	0.0096	U	0.015	U	0.013	U	0.015	U
Bis(2-ethylhexyl)phthalate	mg/Kg	140	0.052	U	0.17	U	0.043	U	0.077	U	0.21	J	0.052	U	1.6		0.37	J
Butyl benzyl phthalate	mg/Kg	14000	0.055	U	0.18	U	0.045	U	0.08	U	0.034	U	0.054	U	0.047	U	0.053	U
Caprolactam	mg/Kg	340000	0.13	U	0.43	U	0.11	U	0.19	U	0.081	U	0.13	U	0.11	U	0.12	U
Carbazole	mg/Kg	96	0.89		0.15	J	0.023	U	0.041	U	1.4		0.4	J	0.68		0.22	J
Chrysene	mg/Kg	230	67		4.8		0.028	J	0.069	J	8.3		17		12		11	
Dibenzo(a,h)anthracene	mg/Kg	0.2	**5.7**		**0.31**	J	0.035	U	0.064	U	**1.3**		**1.5**		**2.5**		**1.3**	
Dibenzofuran	mg/Kg	--	2.5		0.33	J	0.031	U	0.055	U	1.1		1.6		0.82		1.2	
Diethyl phthalate	mg/Kg	550000	0.061	U	0.2	U	0.05	U	0.09	U	0.038	U	0.06	U	0.052	U	0.059	U
Dimethyl phthalate	mg/Kg	--	0.039	U	0.13	U	0.032	U	0.057	U	0.024	U	0.038	U	0.033	U	0.037	U
Di-n-butyl phthalate	mg/Kg	68000	0.11	U	0.37	U	0.092	U	0.17	U	0.071	U	0.11	U	0.097	U	0.11	U
Di-n-octyl phthalate	mg/Kg	27000	0.048	U	0.16	U	0.039	U	0.07	U	0.03	U	0.047	U	0.041	U	0.046	U

TABLE 4-16

ANALYTICAL RESULTS
HACKENSACK RIVER SEDIMENT SAMPLES
STANDARD CHLORINE SITE RIVER FRONTAGE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	HRWC-10 07/29/08 0.0-1.0 ft[2] Primary		HRWC-10 07/29/08 2.0-3.0 ft Primary		HRWC-11 04/23/08 0.0-1.0 ft[2] Primary		HRWC-11 04/23/08 2.0-3.0 ft Primary		HRWC-12 04/24/08 0.0-1.0 ft[2] Primary		HRWC-12 04/24/08 2.0-3.0 ft Primary		HRWC-13 04/23/08 0.0-1.0 ft[2] Primary		HRWC-13 04/23/08 2.0-3.0 ft Primary	
Semivolatile Organics (Continued)																		
Fluoranthene	mg/Kg	24000	150		12		0.06	J	0.15	J	23		31		43		20	
Fluorene	mg/Kg	24000	2.5		0.46	J	0.027	U	0.049	U	2		10		1.7		4.8	
Hexachlorobenzene	mg/Kg	1	0.041	U	0.14	U	0.033	U	0.06	U	0.026	U	0.041	U	0.035	U	0.04	U
Hexachlorobutadiene	mg/Kg	25	0.042	U	0.14	U	0.034	U	0.061	U	0.026	U	0.041	U	0.036	U	0.04	U
Hexachlorocyclopentadiene	mg/Kg	110	0.031	U	0.1	U	0.026	U	0.046	U	0.02	U	0.031	U	0.027	U	0.03	U
Hexachloroethane	mg/Kg	140	0.03	U	0.1	U	0.025	U	0.045	U	0.019	U	0.03	U	0.026	U	0.029	U
Indeno(1,2,3-cd)pyrene	mg/Kg	2	**20**		1.8	J	0.02	U	0.036	U	**4.6**		**5.8**		**8**		**4.2**	
Isophorone	mg/Kg	2000	0.038	U	0.13	U	0.031	U	0.056	U	0.024	U	0.038	U	0.033	U	0.037	U
Naphthalene	mg/Kg	17	7.6		0.86	J	0.11	J	0.088	J	1.1		10		2.4		3.9	
Nitrobenzene	mg/Kg	340	0.017	U	0.056	U	0.014	U	0.025	U	0.011	U	0.017	U	0.015	U	0.016	U
N-Nitrosodiphenylamine	mg/Kg	390	0.037	U	0.12	U	0.03	U	0.054	U	0.023	U	0.037	U	0.032	U	0.036	U
N-Nitrosodipropylamine	mg/Kg	0.3	0.017	U	0.055	U	0.014	U	0.025	U	0.01	U	0.016	U	0.014	U	0.016	U
Pentachlorophenol	mg/Kg	10	0.051	U	0.17	U	0.041	U	0.075	U	0.032	U	0.05	U	0.044	U	0.049	U
Phenanthrene	mg/Kg	300000	15		1.8	J	0.048	J	0.077	J	16		35		11		18	
Phenol	mg/Kg	210000	0.15	J	290		0.034	U	0.061	U	0.04	J	0.041	U	0.14	J	0.08	J
Pyrene	mg/Kg	18000	120		10		0.05	J	0.11	J	16		30		19		17	
Polychlorinated Dioxins and Furans																		
1,2,3,4,6,7,8-HpCDD	ug/Kg	--	0.052	J	0.34	U	0.0011	QJ	0.011	J	0.018	QJ	0.049	J	0.12		0.023	QJ
1,2,3,4,6,7,8-HpCDF	ug/Kg	--	0.65		0.077	J	0.037	B	0.0037	BJ	0.54		0.12		4.7	B	0.11	B
1,2,3,4,7,8,9-HpCDF	ug/Kg	--	0.029	J	0.34	U	0.0013	J	0.015	U	0.024	J	0.0088	J	0.16		0.0041	QJ
1,2,3,4,7,8-HxCDD	ug/Kg	--	0.1	U	0.34	U	0.0084	U	0.015	U	0.064	U	0.1	U	0.088	U	0.099	U
1,2,3,4,7,8-HxCDF	ug/Kg	--	0.22		0.022	QJ	0.013	B	0.0013	BJ	0.17		0.045	J	1.4	QB	0.04	BJ
1,2,3,6,7,8-HxCDD	ug/Kg	--	0.0055	QJ	0.34	U	0.0084	U	0.015	U	0.064	U	0.1	U	0.015	QJ	0.099	U
1,2,3,6,7,8-HxCDF	ug/Kg	--	0.032	J	0.34	U	0.0021	J	0.015	U	0.029	QJ	0.01	QJ	0.22		0.0085	J
1,2,3,7,8,9-HxCDD	ug/Kg	--	0.0047	J	0.34	U	0.0084	U	0.015	U	0.064	U	0.0069	J	0.005	J	0.099	U
1,2,3,7,8,9-HxCDF	ug/Kg	--	0.1	U	0.34	U	0.0084	U	0.015	U	0.064	U	0.1	U	0.088	U	0.099	U
1,2,3,7,8-PCDD	ug/Kg	--	0.1	U	0.34	U	0.0084	U	0.015	U	0.064	U	0.0049	J	0.0036	QJ	0.099	U
1,2,3,7,8-PCDF	ug/Kg	--	0.0063	QJ	0.34	U	0.00022	QJ	0.015	U	0.003	QJ	0.0065	J	0.035	J	0.099	U
2,3,4,6,7,8-HxCDF	ug/Kg	--	0.011	J	0.34	U	0.00027	QJ	0.015	U	0.0086	QJ	0.0059	QJ	0.077	QJ	0.0034	QJ
2,3,4,7,8-PCDF	ug/Kg	--	0.02	QJ	0.34	U	0.001	QJ	0.015	U	0.013	QJ	0.0099	QJ	0.1	Q	0.0032	QJ
2,3,7,8-TCDD	ug/Kg	--	0.021	U	0.068	U	0.0017	U	0.003	U	0.013	U	0.02	U	0.093	Q	0.019	QJ
2,3,7,8-TCDF	ug/Kg	--	0.02	QJ	0.068	U	0.00045	QJ	0.003	U	0.013	U	0.017	J	0.0084	QJ	0.0085	QJ
OCDD	ug/Kg	--	1.7	B	0.34	BJ	0.013	BJ	0.36	B	1.3	B	2.1	B	1.6	B	0.76	B
OCDF	ug/Kg	--	1.1	B	0.13	QBJ	0.075	B	0.0069	BJ	0.79	B	0.19	BJ	6.8	B	0.15	BJ
Total HpCDD	ug/Kg	--	0.14	J	0.021	QJ	0.0026	QJ	0.032		0.045	QJ	0.14	J	0.34		0.051	QJ
Total HpCDF	ug/Kg	--	0.74		0.077	J	0.042	QB	0.0037	BJ	0.63		0.14		5.3	B	0.12	QJ
Total HxCDD	ug/Kg	--	0.06	QJ	0.34	U	0.0084	U	0.0062	QJ	0.021	QJB	0.06	QJ	0.13	QJ	0.014	QJ
Total HxCDF	ug/Kg	--	0.45	Q	0.04	QJ	0.028	QB	0.0023	QJB	0.38	Q	0.1	QJ	3.2	QB	0.077	QJB
Total PeCDD	ug/Kg	--	0.019	QJ	0.34	U	0.002	QJ	0.0013	QJ	0.0049	J	0.019	QJ	0.16	QJ	0.099	U
Total PeCDF	ug/Kg	--	0.2	QJ	0.34	U	0.013	QJ	0.00065	QJ	0.14	QJ	0.079	QJ	1.3	SQ	0.034	QJS
Total TCDD	ug/Kg	--	0.013	J	0.068	U	0.0011	J	0.00023	QJ	0.0048	J	0.011	QJ	0.21	Q	0.019	QJ
Total TCDF	ug/Kg	--	0.12	Q	0.068	U	0.0088	Q	0.003	U	0.068	Q	0.1	Q	1	SQ	0.039	QJ
Polychlorinated Dioxins/Furans (2,3,7,8 Equivalents)																		
1,2,3,4,6,7,8-HpCDD	0.01	--	5.2E-04		--		--		1.1E-04		--		4.9E-04		1.2E-03		--	
1,2,3,4,6,7,8-HpCDF	0.01	--	6.5E-03		7.7E-04		3.7E-04		3.7E-05		5.4E-03		1.2E-03		4.7E-02		1.1E-03	
1,2,3,4,7,8,9-HpCDF	0.01	--	2.9E-04		--		1.3E-05		--		2.4E-04		8.8E-05		1.6E-03		--	
1,2,3,4,7,8-HxCDD	0.10	--	--		--		--		--		--		--		--		--	
1,2,3,4,7,8-HxCDF	0.10	--	2.2E-02		--		1.3E-03		1.3E-04		1.7E-02		4.5E-03		--		4.0E-03	
1,2,3,6,7,8-HxCDD	0.10	--	--		--		--		--		--		--		--		--	

TABLE 4-16

ANALYTICAL RESULTS
HACKENSACK RIVER SEDIMENT SAMPLES
STANDARD CHLORINE SITE RIVER FRONTAGE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	HRWC-10 07/29/08 0.0-1.0 ft[2] Primary		HRWC-10 07/29/08 2.0-3.0 ft Primary		HRWC-11 04/23/08 0.0-1.0 ft[2] Primary		HRWC-11 04/23/08 2.0-3.0 ft Primary		HRWC-12 04/24/08 0.0-1.0 ft[2] Primary		HRWC-12 04/24/08 2.0-3.0 ft Primary		HRWC-13 04/23/08 0.0-1.0 ft[2] Primary		HRWC-13 04/23/08 2.0-3.0 ft Primary	
1,2,3,6,7,8-HxCDF	0.10	--	3.2E-03		--		2.1E-04		--		--		--		2.2E-02		8.5E-04	
Polychlorinated Dioxins/Furans (2,3,7,8 Equivalents) (Continued)																		
1,2,3,7,8,9-HxCDD	0.10	--	4.7E-04		--		--		--		--		6.9E-04		5.0E-04		--	
1,2,3,7,8,9-HxCDF	0.10	--	--		--		--		--		--		--		--		--	
1,2,3,7,8-PCDD	1.00	--	--		--		--		--		--		4.9E-03		--		--	
1,2,3,7,8-PCDF	0.05	--	--		--		--		--		--		3.3E-04		1.8E-03		--	
2,3,4,6,7,8-HxCDF	0.10	--	1.1E-03		--		--		--		--		--		--		--	
2,3,4,7,8-PCDF	0.50	--	--		--		--		--		--		--		--		--	
2,3,7,8-TCDD	1.00	--	--		--		--		--		--		--		--		--	
2,3,7,8-TCDF	0.10	--	--		--		--		--		--		1.7E-03		--		--	
OCDD	0.0001	--	1.7E-04		3.4E-05		1.3E-06		3.6E-05		1.3E-04		2.1E-04		1.6E-04		7.6E-05	
OCDF	0.0001	--	1.1E-04		--		7.5E-06		6.9E-07		7.9E-05		1.9E-05		6.8E-04		1.5E-05	
Total 2,3,7,8-TCDD Equivalents[3]	ug/Kg	1	3.4E-02		8.0E-04		1.9E-03		3.1E-04		2.3E-02		1.4E-02		7.5E-02		6.0E-03	
Polychlorinated Biphenyls (Aroclors)																		
Aroclor 1016	mg/Kg	1	0.0051	U	0.017	U	0.0042	U	0.0075	U	0.0032	U	0.005	U	0.0043	U	0.0049	U
Aroclor 1221	mg/Kg	1	0.0065	U	0.022	U	0.0053	U	0.0096	U	0.0041	U	0.0065	U	0.0056	U	0.0063	U
Aroclor 1232	mg/Kg	1	0.1	PG	0.019	U	0.0048	U	0.0086	U	0.056		0.0058	U	1		0.32	
Aroclor 1242	mg/Kg	1	0.0056	U	0.018	U	0.0046	U	0.0082	U	0.0035	U	0.0055	U	0.0047	U	0.0054	U
Aroclor 1248	mg/Kg	1	0.0032	U	0.011	U	0.0026	U	0.0048	U	0.002	U	0.0032	U	0.0028	U	0.0031	U
Aroclor 1254	mg/Kg	1	0.0049	U	0.016	U	0.004	U	0.0072	U	0.014	J	0.0048	U	0.2		0.056	
Aroclor 1260	mg/Kg	1	0.0049	U	0.016	U	0.004	U	0.0072	U	0.0072	J	0.0048	U	0.1		0.031	J
Aroclor 1262	mg/Kg	1	0.0075	U	0.025	U	0.0061	U	0.011	U	0.0047	U	0.0074	U	0.0064	U	0.0073	U
Aroclor 1268	mg/Kg	1	0.0044	U	0.015	U	0.0036	U	0.0065	U	0.0028	U	0.0044	U	0.0037	U	0.0043	U
Polychlorinated Biphenyls (Congeners/Homoloques)																		
PCB 1	mg/Kg	1	0.00014	B	2.5E-05	QBJ	0.000011	BJ	0.000011	BJ	0.000024	QJ	0.00011	BJ	0.00018	J	0.0008	U
PCB 2 (BZ)	mg/Kg	1	0.00006	QBJ	2.1E-05	BJ	7.5E-06	BJ	0.000014	BJ	0.000064	U	0.000095	BJ	0.00071	U	0.0008	U
PCB 3 (BZ)	mg/Kg	1	0.00013		2.8E-05	J	9.4E-06	J	0.00001	J	0.000064	U	0.00019	J	0.00071	U	0.0008	U
PCB 4	mg/Kg	1	6.8E-05	QBJ	4.5E-05	QBJ	0.000017	QBJ	0.00001	QBJ	0.000095	QBJ	0.000022	QBJ	0.0012	QBJ	0.00013	QBJ
PCB 5 (BZ)	mg/Kg	1	1.8E-05	QJ	5.9E-06	QJ	6.9E-06	QJ	2.2E-06	QJ	0.000064	U	0.0002	U	0.000072	QJ	0.0008	U
PCB 6	mg/Kg	1	5.4E-05	QBJ	3.2E-05	QBJ	0.000015	QBJ	5.7E-06	QBJ	0.000058	QBJ	0.000031	QBJ	0.00056	QBJ	0.0008	U
PCB 7 (BZ)	mg/Kg	1	1.6E-05	QBJ	6.5E-06	QBJ	4.3E-06	QBJ	4.6E-06	QBJ	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 8	mg/Kg	1	0.00012	QBJ	8.7E-05	BJ	0.000037	QB	8.8E-06	QBJ	0.00016	QB	0.00003	QBJ	0.0026	QB	0.00022	QBJ
PCB 9 (BZ)	mg/Kg	1	3.7E-05	QBJ	1.4E-05	QBJ	0.000011	QBJ	5.9E-06	QBJ	0.000035	QJ	0.000019	QBJ	0.00026	QJ	0.0008	U
PCB 10 (BZ)	mg/Kg	1	1.8E-05	QJ	9.2E-06	QJ	0.000004	QJ	5.6E-06	QJ	8.7E-06	QJ	0.00002	QJ	0.00071	U	0.0008	U
PCB 11 (BZ)	mg/Kg	1	0.00017	QBJ	8.3E-05	QBJ	0.000034	QBJ	0.000016	QBJ	0.00016	QB	0.000098	QBJ	0.0019	QB	0.00089	QBJ
PCB 12 (BZ)	mg/Kg	1	0.0001	QBCJ	3.7E-05	QBCJ	0.000025	QBC	7.3E-06	QBCJ	0.000071	QC	0.000057	QBCJ	0.00063	QCJ	0.0008	U
PCB 13 (BZ)	mg/Kg	1	0.0001	QBCJ	3.7E-05	QBCJ	0.000025	QBC	7.3E-06	QBCJ	0.000071	QC	0.000057	QBCJ	0.00063	QCJ	0.0008	U
PCB 14 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	3.5E-06	QJ	4.5E-06	QJ	0.000064	U	0.000018	QJ	0.00071	U	0.0008	U
PCB 15	mg/Kg	1	0.00032	QB	0.00012	QB	0.000048	QB	9.6E-06	QBJ	0.00023	QB	0.0002	QBJ	0.0022	QB	0.00025	QBJ
PCB 16	mg/Kg	1	0.00013	B	8.6E-05	B	0.000034	B	0.000009	QBJ	0.00012	B	0.0002	U	0.0032	B	0.0008	U
PCB 17 (BZ)	mg/Kg	1	0.00013	B	9.9E-05	B	0.000023	B	8.5E-06	QBJ	0.00017	B	0.0002	U	0.0043	B	0.00036	BJ
PCB-18	mg/Kg	1	0.00028	B	0.00023	QB	0.000074	B	0.000017	BJ	0.00041	B	0.000065	QBJ	0.011	B	0.00092	BJ
PCB 19 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	9.3E-06	QJ	0.00003	U	0.000064	U	0.0002	U	0.00062	J	0.0008	U
PCB 20 (BZ)	mg/Kg	1	0.00053	BC	0.00037	BC	0.00012	BC	0.000023	BCJ	0.00072	BC	0.0001	QBCJ	0.015	BC	0.0014	BCJ
PCB 21 (BZ)	mg/Kg	1	0.00014	BC	8.3E-05	QBC	0.000053	BC	8.1E-06	BCJ	0.00016	BC	0.000053	QBCJ	0.0057	BC	0.00043	QBCJ
PCB 22	mg/Kg	1	0.00014	B	8.9E-05	B	0.00005	B	5.5E-06	BJ	0.00017	B	0.000033	QBJ	0.0042	B	0.00031	QBJ
PCB 23 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	2.4E-06	J	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 24 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	5.9E-06	QJ	3.6E-06	QJ	0.000064	U	0.0002	U	0.000071	QJ	0.0008	U
PCB 25 (BZ)	mg/Kg	1	6.5E-05	QBJ	4.1E-05	BJ	0.000015	BJ	0.00003	U	0.000079		0.0002	U	0.00091		0.0008	U

TABLE 4-16

ANALYTICAL RESULTS
HACKENSACK RIVER SEDIMENT SAMPLES
STANDARD CHLORINE SITE RIVER FRONTAGE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	HRWC-10 07/29/08 0.0-1.0 ft[2] Primary		HRWC-10 07/29/08 2.0-3.0 ft Primary		HRWC-11 04/23/08 0.0-1.0 ft[2] Primary		HRWC-11 04/23/08 2.0-3.0 ft Primary		HRWC-12 04/24/08 0.0-1.0 ft[2] Primary		HRWC-12 04/24/08 2.0-3.0 ft Primary		HRWC-13 04/23/08 0.0-1.0 ft[2] Primary		HRWC-13 04/23/08 2.0-3.0 ft Primary	
Polychlorinated Biphenyls (Congeners/Homoloques) (Continued)																		
PCB 26 (BZ)	mg/Kg	1	0.00013	QBC	8.3E-05	BC	0.000029	BC	7.6E-06	QBCJ	0.00014	BC	0.000049	QBCJ	0.0018	BC	0.00018	QBCJ
PCB 27 (BZ)	mg/Kg	1	3.4E-05	QJ	2.1E-05	J	6.4E-06	QJ	0.00003	U	0.000024	QJ	0.0002	U	0.00054	J	0.0008	U
PCB 28	mg/Kg	1	0.00053	BC	0.00037	BC	0.00012	BC	0.000023	BCJ	0.00072	BC	0.0001	QBJ	0.015	BC	0.0014	BCJ
PCB 29 (BZ)	mg/Kg	1	0.00013	QBC	8.3E-05	BC	0.000029	BC	7.6E-06	QBCJ	0.00014	BC	0.000049	QBCJ	0.0018	BC	0.00018	QBCJ
PCB 30 (BZ)	mg/Kg	1	0.00021	U	0.00014	U	2.2E-06	QJ	0.000061	U	0.00013	U	0.00041	U	0.0014	U	0.0016	U
PCB 31	mg/Kg	1	0.00046	B	0.00029	B	0.00014	B	0.000015	BJ	0.00056	B	0.00009	QBJ	0.012	B	0.0013	BJ
PCB 32 (BZ)	mg/Kg	1	0.00011	B	7.4E-05	QB	0.000022	B	6.4E-06	QBJ	0.00012	B	0.0002	U	0.0026	B	0.00021	QBJ
PCB 33	mg/Kg	1	0.00014	BC	8.3E-05	QBC	0.000053	BC	8.1E-06	BCJ	0.00016	BC	0.000053	QBCJ	0.0057	BC	0.00043	QBCJ
PCB 34 (BZ)	mg/Kg	1	1.5E-05	QJ	6.5E-06	QJ	4.3E-06	J	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 35 (BZ)	mg/Kg	1	3.7E-05	QJ	1.7E-05	QJ	9.5E-06	J	0.00003	U	0.000018	J	0.000044	QJ	0.00017	QJ	0.0008	U
PCB 36 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 37	mg/Kg	1	0.00019	B	0.00011	B	0.000063	B	7.9E-06	QBJ	0.0002		0.000061	BJ	0.0029		0.00026	QJ
PCB 38 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 39 (BZ)	mg/Kg	1	1.1E-05	QJ	6.8E-05	U	3.9E-06	QJ	0.000002	QJ	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 40 (BZ)	mg/Kg	1	0.00022	QBC	0.00016	QBC	0.000056	BC	9.3E-06	QBCJ	0.00029	BC	0.000054	BCJ	0.0069	BC	0.00093	QBC
PCB 41	mg/Kg	1	2.8E-05	J	6.8E-05	U	4.4E-06	J	0.00003	U	7.6E-06	QBJ	0.0002	U	0.00067	QBJ	0.0008	U
PCB 42 (BZ)	mg/Kg	1	0.00017	B	0.00011	B	0.000031	QB	0.00003	U	0.0002	B	0.0002	U	0.0046	B	0.00054	BJ
PCB 43 (BZ)	mg/Kg	1	0.00064	C	8.7E-06	CJ	4.4E-06	QCJ	0.00003	U	0.000019	QCJ	0.00015	QCJ	0.00039	QCJ	0.0008	U
PCB 44	mg/Kg	1	0.00052	BC	0.00035	BC	0.00012	BC	0.000021	BCJ	0.00072	BC	0.000089	QBCJ	0.015	BC	0.0019	BC
PCB 45 (BZ)	mg/Kg	1	9.8E-05	BCJ	7.1E-05	BC	0.000027	BC	5.6E-06	QBCJ	0.00012	BC	0.0002	U	0.0025	BC	0.00022	QBCJ
PCB 46 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000009	QJ	0.00003	U	0.00002	QJ	0.0002	U	0.00078		0.0008	U
PCB 47 (BZ)	mg/Kg	1	0.00052	BC	0.00035	BC	0.00012	BC	0.000021	BCJ	0.00072	BC	0.000089	QBCJ	0.015	BC	0.0019	BC
PCB 48 (BZ)	mg/Kg	1	0.0001	BJ	6.4E-05	BJ	0.000018	B	0.00003	U	0.0001		0.0002	U	0.0033		0.00031	QJ
PCB 49	mg/Kg	1	0.00042	B	0.00027	B	0.000083	B	0.000012	QBJ	0.00054	B	0.000083	QBJ	0.011	B	0.0012	QB
PCB 50 (BZ)	mg/Kg	1	6.8E-05	BCJ	4.7E-05	QBCJ	0.000022	BC	4.9E-06	QBCJ	0.00008	QBC	0.0002	U	0.0018	BC	0.0008	U
PCB 51 (BZ)	mg/Kg	1	9.8E-05	BCJ	7.1E-05	BC	0.000027	BC	5.6E-06	QBCJ	0.00012	BC	0.0002	U	0.0025	BC	0.00022	QBCJ
PCB 52	mg/Kg	1	0.0001	U	0.0004	B	0.00014	B	0.000027	BJ	0.00078	B	0.0002	U	0.018	B	0.0026	B
PCB 53 (BZ)	mg/Kg	1	6.8E-05	BCJ	4.7E-05	QBCJ	0.000022	BC	4.9E-06	QBCJ	0.00008	QB	0.0002	U	0.0018	BC	0.0008	U
PCB 54 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 55 (BZ)	mg/Kg	1	0.00061		6.8E-05	U	3.7E-06	J	0.00003	U	0.000015	J	0.0002	U	0.00012	QJ	0.0008	U
PCB 56 (BZ)	mg/Kg	1	0.00028		0.00017		0.000077		6.8E-06	QJ	0.0003	B	0.0002	U	0.0067	B	0.0011	B
PCB 57 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 58 (BZ)	mg/Kg	1	0.0001	U	8E-06	J	5.1E-06	QJ	0.00003	U	0.000064	U	0.0002	U	0.00026	QJ	0.0008	U
PCB 59 (BZ)	mg/Kg	1	5.4E-05	QCJ	3.1E-05	CJ	0.000012	QCJ	0.00003	U	0.000051	QCJ	0.000019	QCJ	0.0012	C	0.00012	QCJ
PCB 60 (BZ)	mg/Kg	1	0.00009	QJ	5.9E-05	QJ	0.000019	Q	3.1E-06	QJ	0.000087	QB	0.0002	U	0.0023	B	0.00054	BJ
PCB 61 (BZ)	mg/Kg	1	0.00021	U	0.00014	U	0.000034	U	0.000061	U	0.00013	U	0.00041	U	0.0014	U	0.0016	U
PCB 62 (BZ)	mg/Kg	1	5.4E-05	QCJ	3.1E-05	CJ	0.000012	QCJ	0.00003	U	0.000051	QCJ	0.000019	QCJ	0.0012	C	0.00012	QCJ
PCB 63 (BZ)	mg/Kg	1	3.1E-05	J	6.8E-05	U	5.8E-06	J	0.00003	U	0.000016	QJ	0.0002	U	0.00051	J	0.0008	U
PCB 64	mg/Kg	1	0.00021	B	0.00013	B	0.000043	B	6.4E-06	QBJ	0.00029	B	0.000041	QBJ	0.0064	B	0.00087	B
PCB 65 (BZ)	mg/Kg	1	0.00052	BC	0.00035	BC	0.00012	BC	0.000021	BCJ	0.00072	BC	0.000089	QBCJ	0.015	BC	0.0019	BC
PCB 66 (BZ)	mg/Kg	1	0.0001	U	0.00034	B	0.00011	B	0.000017	BJ	0.00068	B	0.000086	QBJ	0.015	B	0.0026	B
PCB 67 (BZ)	mg/Kg	1	0.0001	U	0.00001	QJ	3.9E-06	J	0.00003	U	0.000014	QJ	0.0002	U	0.00032	J	0.0008	U
PCB 68 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	2.5E-06	QJ	4.3E-06	QJ	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 69 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 70	mg/Kg	1	0.00088	BC	0.00053	BC	0.00016	BC	0.000025	BCJ	0.001	BC	0.00012	BCJ	0.025	BC	0.0045	BC
PCB 71 (BZ)	mg/Kg	1	0.00022	QBC	0.00016	QBC	0.000056	BC	9.3E-06	QBCJ	0.00029	BC	0.000054	BCJ	0.0069	BC	0.00093	QBC
PCB 72 (BZ)	mg/Kg	1	0.0001	U	8.9E-06	J	4.4E-06	J	0.00003	U	0.000064	U	0.0002	U	0.00011	QJ	0.0008	U
PCB 73 (BZ)	mg/Kg	1	0.00064	C	8.7E-06	CJ	4.4E-06	QCJ	0.00003	U	0.000019	QCJ	0.00015	QCJ	0.00039	QCJ	0.0008	U
PCB 74	mg/Kg	1	0.00088	BC	0.00053	BC	0.00016	BC	0.000025	BCJ	0.001	BC	0.00012	BCJ	0.025	BC	0.0045	BC

TABLE 4-16

ANALYTICAL RESULTS
HACKENSACK RIVER SEDIMENT SAMPLES
STANDARD CHLORINE SITE RIVER FRONTAGE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	HRWC-10 07/29/08 0.0-1.0 ft[2] Primary		HRWC-10 07/29/08 2.0-3.0 ft Primary		HRWC-11 04/23/08 0.0-1.0 ft[2] Primary		HRWC-11 04/23/08 2.0-3.0 ft Primary		HRWC-12 04/24/08 0.0-1.0 ft[2] Primary		HRWC-12 04/24/08 2.0-3.0 ft Primary		HRWC-13 04/23/08 0.0-1.0 ft[2] Primary		HRWC-13 04/23/08 2.0-3.0 ft Primary	
Polychlorinated Biphenyls (Congeners/Homoloques) (Continued)																		
PCB 75	mg/Kg	1	5.4E-05	QCJ	3.1E-05	CJ	0.000012	QCJ	0.00003	U	0.000051	QCJ	0.000019	QCJ	0.0012	C	0.00012	QCJ
PCB 76 (BZ)	mg/Kg	1	0.00088	BC	0.00053	BC	0.00016	BC	0.000025	BCJ	0.001	BC	0.00012	BCJ	0.025	BC	0.0045	BC
PCB 77	mg/Kg	1	0.00011	Q	5.7E-05	J	0.000029		0.00003	U	0.000082		0.000039	QJ	0.0013		0.0002	QJ
PCB 78 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 79 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	4.2E-06	QJ	0.00003	U	0.000064	U	0.0002	U	0.0001	J	0.0008	U
PCB 80 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 81	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 82 (BZ)	mg/Kg	1	0.00011		6.8E-05	Q	0.000032		0.00003	U	0.000072	QB	0.0002	U	0.002	B	0.0008	U
PCB 83 (BZ)	mg/Kg	1	0.00044	C	0.00026	C	0.000099	C	0.000017	CJ	0.00052	BC	0.00007	QCJ	0.0094	BC	0.002	BC
PCB 84	mg/Kg	1	0.00017	Q	0.00011		0.000049		7.8E-06	J	0.00016	B	0.0002	U	0.0043	B	0.00049	QBJ
PCB 85 (BZ)	mg/Kg	1	0.00015	QC	8.3E-05	C	0.00003	QC	5.3E-06	QCJ	0.00012	QBC	0.0002	U	0.0024	BQC	0.00047	QBCJ
PCB 86 (BZ)	mg/Kg	1	0.00042	C	0.00024	C	0.0001	QC	0.000018	QCJ	0.0004	BC	0.0002	U	0.0086	BC	0.0019	BC
PCB 87	mg/Kg	1	0.00042	C	0.00024	C	0.0001	QC	0.000018	QCJ	0.0004	BC	0.0002	U	0.0086	BC	0.0019	BC
PCB 88 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 89 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00017	QJ	0.0008	U
PCB 90 (BZ)	mg/Kg	1	0.00054	BC	0.00036	BC	0.00013	BC	0.000034	BC	0.00065	BC	0.000095	BCJ	0.013	BC	0.0031	BC
PCB 91 (BZ)	mg/Kg	1	0.00012		7.1E-05		0.000034		0.00003	U	0.00009	QB	0.0002	U	0.002	B	0.00034	BJ
PCB 92 (BZ)	mg/Kg	1	0.00012		0.00008		0.000033		7.4E-06	J	0.00011	Q	0.0002	U	0.0021		0.00044	J
PCB 93 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 94 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000005	QJ	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 95 (BZ)	mg/Kg	1	0.00044	C	0.00023	QC	0.00013	C	0.000022	QCJ	0.00052	BC	0.0002	U	0.011	BC	0.0016	BC
PCB 96 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	4.6E-06	QJ	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 97	mg/Kg	1	0.00042	C	0.00024	C	0.0001	QC	0.000018	QCJ	0.0004	BC	0.0002	U	0.0086	BC	0.0019	BC
PCB 98 (BZ)	mg/Kg	1	0.0001	U	2.7E-05	QCJ	0.000013	QCJ	0.00003	U	0.000037	CJ	0.0002	U	0.00051	QCJ	0.0008	U
PCB 99	mg/Kg	1	0.00044	C	0.00026	C	0.000099	C	0.000017	CJ	0.00052	BC	0.00007	QCJ	0.0094	BC	0.002	BC
PCB 100 (BZ)	mg/Kg	1	0.00044	C	0.00023	QC	0.00013	C	0.000022	QCJ	0.00052	BC	0.0002	U	0.011	BC	0.0016	BC
PCB 101	mg/Kg	1	0.00054	BC	0.00036	BC	0.00013	BC	0.000034	B	0.00065	BC	0.000095	BCJ	0.013	BC	0.0031	BC
PCB 102 (BZ)	mg/Kg	1	0.0001	U	2.7E-05	QCJ	0.000013	QCJ	0.00003	U	0.000037	CJ	0.0002	U	0.00051	QCJ	0.0008	U
PCB 103 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 104 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 105	mg/Kg	1	0.00037	Q	0.00017	Q	0.00024	Q	0.00001	J	0.00026	QB	0.000057	QJ	0.0041	QB	0.0011	QB
PCB 106 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 107 (BZ)	mg/Kg	1	4.5E-05	QJ	3.2E-05	J	0.000012	J	0.00003	U	0.000038	J	0.0002	U	0.00093		0.00023	J
PCB 108 (BZ)	mg/Kg	1	2.3E-05	QCJ	1.4E-05	CJ	5.4E-06	CJ	0.00003	U	0.000015	QCJ	0.0002	U	0.00041	CJ	0.0008	U
PCB 109 (BZ)	mg/Kg	1	0.00042	C	0.00024	C	0.0001	QC	0.000018	QCJ	0.0004	BC	0.0002	U	0.0086	BC	0.0019	BC
PCB 110	mg/Kg	1	0.00062	BC	0.0004	BC	0.00019	BC	0.000032	BC	0.00074	BC	0.00012	BCJ	0.015	BC	0.0036	BC
PCB 111 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 112 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 113 (BZ)	mg/Kg	1	0.00054	BC	0.00036	BC	0.00013	BC	0.000034	BC	0.00065	BC	0.000095	BCJ	0.013	BC	0.0031	BC
PCB 114	mg/Kg	1	0.00005	J	0.00001	QJ	0.000012	QJ	0.00003	U	0.000064	U	0.0002	U	0.00018	QJ	0.0008	U
PCB 115	mg/Kg	1	0.00062	BC	0.0004	BC	0.00019	BC	0.000032	BC	0.00074	BC	0.00012	BCJ	0.015	BC	0.0036	BC
PCB 116 (BZ)	mg/Kg	1	0.00015	QC	8.3E-05	C	0.00003	QC	5.3E-06	QCJ	0.00012	QB	0.0002	U	0.0024	QBC	0.00047	QBCJ
PCB 117 (BZ)	mg/Kg	1	0.00015	QC	8.3E-05	C	0.00003	QC	5.3E-06	QCJ	0.00012	QB	0.0002	U	0.0024	QBC	0.00047	QBCJ
PCB 118	mg/Kg	1	0.0005		0.0003		0.000096		0.000023	J	0.00055	B	0.000068	J	0.01	B	0.003	B
PCB 119	mg/Kg	1	0.00042	C	0.00024	C	0.0001	QC	0.000018	QCJ	0.0004	BC	0.0002	U	0.0086	BC	0.0019	BC
PCB 120 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	2.3E-06	J	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 121 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 122 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000002	QJ	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 123	mg/Kg	1	9.4E-06	QJ	1.2E-05	J	2.6E-06	QJ	0.00003	U	9.7E-06	QJ	0.0002	U	0.00012	QJ	0.0008	U

TABLE 4-16

ANALYTICAL RESULTS
HACKENSACK RIVER SEDIMENT SAMPLES
STANDARD CHLORINE SITE RIVER FRONTAGE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	HRWC-10 07/29/08 0.0-1.0 ft[2] Primary		HRWC-10 07/29/08 2.0-3.0 ft Primary		HRWC-11 04/23/08 0.0-1.0 ft[2] Primary		HRWC-11 04/23/08 2.0-3.0 ft Primary		HRWC-12 04/24/08 0.0-1.0 ft[2] Primary		HRWC-12 04/24/08 2.0-3.0 ft Primary		HRWC-13 04/23/08 0.0-1.0 ft[2] Primary		HRWC-13 04/23/08 2.0-3.0 ft Primary	
Polychlorinated Biphenyls (Congeners/Homoloques) (Continued)																		
PCB 124 (BZ)	mg/Kg	1	2.3E-05	QCJ	1.4E-05	CJ	5.4E-06	CJ	0.00003	U	0.000015	QCJ	0.0002	U	0.00041	CJ	0.0008	U
PCB 125 (BZ)	mg/Kg	1	0.00042	C	0.00024	C	0.0001	QC	0.000018	QCJ	0.0004	BC	0.0002	U	0.0086	BC	0.0019	BC
PCB 126	mg/Kg	1	2.6E-05	QJ	6.8E-05	U	4.2E-06	QJ	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 127 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 128	mg/Kg	1	9.7E-05	QJ	7.5E-05		0.000031		0.00003	U	0.00007	Q	0.0002	U	0.0014		0.00033	QJ
PCB 129 (BZ)	mg/Kg	1	0.00057	BC	0.00035	BC	0.00018	BC	0.000044	BC	0.0006	BC	0.000083	QBCJ	0.011	BC	0.0029	BC
PCB 130 (BZ)	mg/Kg	1	4.2E-05	J	2.1E-05	QJ	0.000013	J	0.00003	U	0.000027	J	0.0002	U	0.00048	QJ	0.0008	U
PCB 131 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	4.1E-06	QJ	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 132 (BZ)	mg/Kg	1	0.00021		0.00011		0.000066		0.000013	J	0.00015	B	0.0002	U	0.0034	B	0.00072	QBJ
PCB 133 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	6.3E-06	J	0.00003	U	8.4E-06	QJ	0.0002	U	0.00019	QJ	0.0008	U
PCB 134 (BZ)	mg/Kg	1	5.1E-05	CJ	1.7E-05	QCJ	0.000011	QCJ	0.00003	U	0.000022	CJ	0.0002	U	0.00051	CJ	0.0008	U
PCB 135	mg/Kg	1	0.00022	C	0.00014	C	0.000081	QC	0.000023	QCJ	0.0002	QC	0.0002	U	0.0033	QC	0.0008	U
PCB 136	mg/Kg	1	0.00009	J	5.3E-05	J	0.00003		6.5E-06	QJ	0.000064	J	0.0002	U	0.0014		0.00027	J
PCB 137 (BZ)	mg/Kg	1	2.7E-05	QJ	1.5E-05	J	7.5E-06	QJ	0.00003	U	0.000014	QJ	0.0002	U	0.00037	J	0.0008	U
PCB 138	mg/Kg	1	0.00057	BC	0.00035	BC	0.00018	BC	0.000044	BC	0.0006	BC	0.000083	QBCJ	0.011	BC	0.0029	BC
PCB 139 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	4.1E-06	QCJ	0.00003	U	0.000064	U	0.0002	U	0.00017	QCJ	0.0008	U
PCB 140 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	4.1E-06	QCJ	0.00003	U	0.000064	U	0.0002	U	0.00017	QCJ	0.0008	U
PCB 141	mg/Kg	1	0.00011	Q	7.3E-05		0.000033		9.8E-06	QJ	0.000081	Q	0.0002	U	0.0019	Q	0.00043	QJ
PCB 142 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 143 (BZ)	mg/Kg	1	5.1E-05	CJ	1.7E-05	QJ	0.000011	QCJ	0.00003	U	0.000022	CJ	0.0002	U	0.00051	CJ	0.0008	U
PCB 144 (BZ)	mg/Kg	1	0.00006	QJ	3.4E-05	J	9.8E-06	J	0.00003	U	0.000021	J	0.0002	U	0.00037	J	0.0008	U
PCB 145 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 146 (BZ)	mg/Kg	1	0.00011		6.3E-05	J	0.000032		5.9E-06	QJ	0.000085		0.0002	U	0.0016		0.00035	J
PCB 147 (BZ)	mg/Kg	1	0.00049	BC	0.00026	BC	0.00015	BC	0.00004	BC	0.00051	BC	0.000067	QBCJ	0.0094	BC	0.0015	QBC
PCB 148 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 149	mg/Kg	1	0.00049	BC	0.00026	BC	0.00015	BC	0.00004	BC	0.00051	BC	0.000067	QBCJ	0.0094	BC	0.0015	QBC
PCB 150 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 151	mg/Kg	1	0.00022	C	0.00014	C	0.000081	QC	0.000023	QCJ	0.0002	QC	0.0002	U	0.0033	QC	0.0008	U
PCB 152 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 153	mg/Kg	1	0.00051	BC	0.00029	BC	0.00014	BC	0.000045	BC	0.00057	BC	0.000065	BCJ	0.01	BC	0.0022	BC
PCB 154 (BZ)	mg/Kg	1	0.00022	C	0.00014	C	0.000081	QC	0.000023	QCJ	0.0002	QC	0.0002	U	0.0033	QC	0.0008	U
PCB 155 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 156	mg/Kg	1	9.9E-05	CJ	4.2E-05	QCJ	0.000018	C	0.00003	U	0.000034	QCJ	0.0002	U	0.00087	C	0.00033	QCJ
PCB 157	mg/Kg	1	9.9E-05	CJ	4.2E-05	QCJ	0.000018	C	0.00003	U	0.000034	QCJ	0.0002	U	0.00087	C	0.00033	QCJ
PCB 158	mg/Kg	1	6.8E-05	J	3.8E-05	J	0.000018		4.5E-06	QJ	0.000043	J	0.0002	U	0.00099		0.00021	QJ
PCB 159 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 160 (BZ)	mg/Kg	1	0.00057	BC	0.00035	BC	0.00018	BC	0.000044	BC	0.0006	BC	0.000083	QBCJ	0.011	BC	0.0029	BC
PCB 161 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 162 (BZ)	mg/Kg	1	5.9E-05	QJ	4.4E-05	QJ	0.000082	Q	0.00003	U	9.3E-06	QJ	0.0002	U	0.00074	Q	0.0008	U
PCB 163 (BZ)	mg/Kg	1	0.00057	BC	0.00035	BC	0.00018	BC	0.000044	BC	0.0006	BC	0.000083	QBCJ	0.011	BC	0.0029	BC
PCB 164 (BZ)	mg/Kg	1	0.00004	QJ	2.8E-05	J	0.000018		4.2E-06	J	0.000038	J	0.0002	U	0.00066	J	0.00014	QJ
PCB 165 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 166 (BZ)	mg/Kg	1	2.5E-05	J	6.8E-05	U	4.8E-06	J	0.00003	U	7.3E-06	QJ	0.0002	U	0.00013	QJ	0.0008	U
PCB 167	mg/Kg	1	3.1E-05	QJ	2.1E-05	J	9.2E-06	J	0.00003	U	0.000019	J	0.0002	U	0.00023	J	0.0008	U
PCB 168 (BZ)	mg/Kg	1	0.00051	BC	0.00029	BC	0.00014	BC	0.000045	BC	0.00057	BC	0.000065	BCJ	0.01	BC	0.0022	BC
PCB 169	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 170	mg/Kg	1	0.00021		0.00011	Q	0.000053		0.00002	J	0.00013		0.0002	U	0.0028		0.00041	QJ
PCB 171	mg/Kg	1	6.4E-05	CJ	3.6E-05	QCJ	0.000016	QCJ	5.7E-06	Q	0.000026	QCJ	0.0002	U	0.00065	QCJ	0.0008	U
PCB 172 (BZ)	mg/Kg	1	0.0001	U	2.2E-05	QJ	0.000013	QJ	0.00003	U	0.000019	QJ	0.0002	U	0.00052	QJ	0.0008	U

TABLE 4-16

ANALYTICAL RESULTS
HACKENSACK RIVER SEDIMENT SAMPLES
STANDARD CHLORINE SITE RIVER FRONTAGE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	HRWC-10 07/29/08 0.0-1.0 ft[2] Primary		HRWC-10 07/29/08 2.0-3.0 ft Primary		HRWC-11 04/23/08 0.0-1.0 ft[2] Primary		HRWC-11 04/23/08 2.0-3.0 ft Primary		HRWC-12 04/24/08 0.0-1.0 ft[2] Primary		HRWC-12 04/24/08 2.0-3.0 ft Primary		HRWC-13 04/23/08 0.0-1.0 ft[2] Primary		HRWC-13 04/23/08 2.0-3.0 ft Primary	
Polychlorinated Biphenyls (Congeners/Homoloques) (Continued)																		
PCB 173 (BZ)	mg/Kg	1	6.4E-05	CJ	3.6E-05	QCJ	0.000016	QCJ	5.7E-06	QCJ	0.000026	QCJ	0.0002	U	0.00065	QCJ	0.0008	U
PCB 174	mg/Kg	1	0.00015		0.0001		0.000059		0.000021	J	0.00012		0.0002	U	0.0031		0.0005	QJ
PCB 175 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	3.2E-06	QJ	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 176 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	8.4E-06	J	3.8E-06	J	0.000013	QJ	0.0002	U	0.00037	QJ	0.0008	U
PCB 177 (BZ)	mg/Kg	1	0.0001	QJ	4.8E-05	J	0.000034		9.1E-06	QJ	0.000069		0.0002	U	0.0016		0.00025	QJ
PCB 178 (BZ)	mg/Kg	1	4.7E-05	J	3.3E-05	QJ	0.000015	J	5.5E-06	QJ	0.000029	J	0.0002	U	0.00057	QJ	0.0008	U
PCB 179 (BZ)	mg/Kg	1	7.4E-05	QJ	4.1E-05	QJ	0.000041		0.000012	J	0.000066		0.0002	U	0.0015		0.00021	J
PCB 180	mg/Kg	1	0.0004	C	0.0002	C	0.0001	C	0.000052	QC	0.0003	C	0.0002	U	0.0066	C	0.0014	C
PCB 181 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 182 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 183	mg/Kg	1	0.00012		5.9E-05	QJ	0.000034		0.000018	J	0.00008		0.0002	U	0.002		0.00028	QJ
PCB 184	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 185 (BZ)	mg/Kg	1	0.0001	U	1.6E-05	QJ	9.6E-06	J	0.00003	U	8.5E-06	QJ	0.0002	U	0.00027	QJ	0.0008	U
PCB 186 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 187	mg/Kg	1	0.00026		0.00015	Q	0.000089		0.000031		0.00023		0.0002	U	0.0049		0.00075	J
PCB 188 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 189	mg/Kg	1	0.0001	U	6.8E-05	U	4.2E-06	QJ	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 190 (BZ)	mg/Kg	1	6.7E-05	QJ	3.5E-05	QJ	8.9E-06	QJ	0.00003	U	0.000023	J	0.0002	U	0.00048	J	0.0008	U
PCB 191 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	3.5E-06	J	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 192 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 193 (BZ)	mg/Kg	1	0.0004	C	0.0002	C	0.0001	C	0.000052	QC	0.0003	C	0.0002	U	0.0066	C	0.0014	C
PCB 194	mg/Kg	1	0.00012	Q	6.9E-05	Q	0.000029		0.000018	J	0.000062	QJ	0.000026	QJ	0.0022		0.00044	J
PCB 195	mg/Kg	1	5.6E-05	QJ	3.6E-05	J	0.000012	J	6.1E-06	J	0.000027	QJ	0.0002	U	0.00066	J	0.0008	U
PCB 196 (BZ)	mg/Kg	1	6.9E-05	QJ	3.6E-05	QJ	0.000016	QJ	0.000013	QJ	0.000029	QJ	0.0002	U	0.0011		0.0008	U
PCB 197 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 198 (BZ)	mg/Kg	1	0.00016	C	0.00009	C	0.000047	C	0.000034	C	0.000096	C	0.0002	U	0.0042	C	0.0005	QCJ
PCB 199 (BZ)	mg/Kg	1	0.0001	U	1.8E-05	J	6.7E-06	J	0.00003	U	0.000064	U	0.0002	U	0.00022	J	0.0008	U
PCB 201	mg/Kg	1	0.0001	U	6.8E-05	U	6.3E-06	QJ	3.4E-06	QJ	0.000012	QJ	0.0002	U	0.00029	QJ	0.0008	U
PCB 201 (BZ)	mg/Kg	1	0.00016	C	0.00009	C	0.000047	C	0.000034	C	0.000096	C	0.0002	U	0.0042	C	0.0005	QJ
PCB 202 (BZ)	mg/Kg	1	4.4E-05	J	2.4E-05	QJ	0.000019		0.000017	J	0.000028	J	0.0002	U	0.0018		0.0008	U
PCB 203 (BZ)	mg/Kg	1	9.1E-05	QJ	0.00006	J	0.000028		0.000017	QJ	0.000056	J	0.0002	U	0.002		0.0008	U
PCB 204 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	0.000017	U	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 205 (BZ)	mg/Kg	1	0.0001	U	6.8E-05	U	3.6E-06	J	0.00003	U	0.000064	U	0.0002	U	0.00071	U	0.0008	U
PCB 206	mg/Kg	1	0.0001	QJ	5.4E-05	QJ	0.000029		0.000035		0.00006	QJ	0.000027	J	0.0064		0.00044	QJ
PCB 207	mg/Kg	1	0.0001	U	1.8E-05	QJ	5.8E-06	J	4.7E-06	QJ	0.000012	J	0.0002	U	0.0005	QJ	0.0008	U
PCB 208 (BZ)	mg/Kg	1	4.7E-05	J	2.5E-05	QJ	0.000013	J	0.000022	J	0.000032	J	0.0002	U	0.003		0.0008	U
Monochlorobiphenyl (total)	mg/Kg	1	0.00033	BQ	7.4E-05	QBJ	0.000028	BJ	0.000036	BJ	0.000024	QJ	0.0004	BJ	0.00018	J	0.0008	U
Dichlorobiphenyl (total)	mg/Kg	1	0.00092	QB	0.00044	QB	0.00021	QB	0.000081	QBJ	0.0008	QB	0.00049	QBJ	0.0095	QB	0.0015	QBJ
Trichlorobiphenyl (total)	mg/Kg	1	0.0024	BQ	0.0016	QB	0.00067	QB	0.00011	BJQ	0.0029	BQ	0.00049	QBJ	0.065	BQ	0.0053	BJQ
Tetrachlorobiphenyl (total)	mg/Kg	1	0.0045	BQ	0.0028	QB	0.001	BQ	0.00014	QBJ	0.0054	QB	0.00069	QJB	0.13	BQ	0.018	QB
Pentachlorobiphenyl (total)	mg/Kg	1	0.0041	QB	0.0025	QB	0.0012	Q	0.00018	QB	0.0043	BQ	0.00041	BJQ	0.086	BQ	0.018	BQ
Hexachlorobiphenyl (total)	mg/Kg	1	0.0029	QB	0.0017	BQ	0.00095	QB	0.0002	QB	0.0026	QB	0.00021	QBJ	0.049	QB	0.0095	QB
Heptachlorobiphenyl (total)	mg/Kg	1	0.0015	Q	0.00085	Q	0.0005	Q	0.00018	Q	0.0011	Q	0.0002	U	0.025	Q	0.0038	Q
Octachlorobiphenyl (total)	mg/Kg	1	0.00054	Q	0.00033	Q	0.00017	Q	0.00011	Q	0.00031	Q	0.000026	QJ	0.012	Q	0.00094	QJ
Nonachlorobiphenyl (total)	mg/Kg	1	0.00015	JQ	9.8E-05	QJ	0.000047		0.000062	Q	0.0001	JQ	0.000027	J	0.01	Q	0.00044	QJ
Decachlorobiphenyl	mg/Kg	1	0.00025		0.00011		0.000028		0.000046		0.000087	Q	0.000086	QJ	0.0092		0.0008	U
Pesticides/Herbicides																		
2,4,5-T	mg/Kg	--	0.0065	U	0.021	U	0.0053	U	0.0095	U	0.0041	U	0.0064	U	0.0056	U	0.0063	U
2,4-D	mg/Kg	--	0.042	U	0.14	U	0.034	U	0.061	U	0.026	U	0.041	U	0.036	U	0.04	U

TABLE 4-16

ANALYTICAL RESULTS
HACKENSACK RIVER SEDIMENT SAMPLES
STANDARD CHLORINE SITE RIVER FRONTAGE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	HRWC-10 07/29/08 0.0-1.0 ft[2] Primary		HRWC-10 07/29/08 2.0-3.0 ft Primary		HRWC-11 04/23/08 0.0-1.0 ft[2] Primary		HRWC-11 04/23/08 2.0-3.0 ft Primary		HRWC-12 04/24/08 0.0-1.0 ft[2] Primary		HRWC-12 04/24/08 2.0-3.0 ft Primary		HRWC-13 04/23/08 0.0-1.0 ft[2] Primary		HRWC-13 04/23/08 2.0-3.0 ft Primary	
Pesticides/Herbicides (Continued)																		
2,4-DB	mg/Kg	--	0.037	U	0.12	U	0.03	U	0.054	U	0.023	U	0.036	U	0.032	U	0.036	U
4,4'-DDD	mg/Kg	13	0.0015	U	0.001	U	0.00025	U	0.00045	U	0.00072	JP	0.0015	U	0.011		0.0031	JP
4,4'-DDE	mg/Kg	9	0.001	U	0.00068	U	0.00017	U	0.0003	U	0.00013	U	0.001	U	0.027		0.0043	JP
4,4'-DDT	mg/Kg	8	0.031	P	0.0016	U	0.00038	U	0.00069	U	0.00029	U	0.011	P	0.0004	U	0.0023	U
Aldrin	mg/Kg	0.2	0.0018	U	0.0012	U	0.0003	U	0.00054	U	0.00023	U	0.0018	U	0.00031	U	0.0018	U
alpha-BHC	mg/Kg	0.5	0.0026	U	0.0017	U	0.00043	U	0.00077	U	0.00033	U	0.0026	U	0.00044	U	0.0025	U
alpha-Chlordane	mg/Kg	1	0.0011	U	0.0095	J	0.00017	U	0.00031	U	0.00013	U	0.0011	U	0.00018	U	0.001	U
beta-BHC	mg/Kg	2	0.002	U	0.0013	U	0.00033	U	0.00059	U	0.00025	U	0.002	U	0.00034	U	0.002	U
delta-BHC	mg/Kg	--	0.0018	U	0.0036	JP	0.0003	U	0.00053	U	0.0015	J	0.012	J	0.014		0.0084	
Dieldrin	mg/Kg	0.2	0.0013	U	0.00084	U	0.00021	U	0.00038	U	0.00016	U	0.0039	JP	0.00022	U	0.0012	U
Endosulfan I	mg/Kg	6800	0.0018	U	0.0012	U	0.00029	U	0.00053	U	0.00022	U	0.0018	U	0.0003	U	0.0017	U
Endosulfan II	mg/Kg	6800	0.004	U	0.0026	U	0.00065	U	0.0012	U	0.00074	JP	0.0039	U	0.0038	P	0.0038	U
Endosulfan sulfate	mg/Kg	6800	0.0028	U	0.0018	U	0.00045	U	0.00082	U	0.00035	U	0.0027	U	0.00047	U	0.0027	U
Endrin	mg/Kg	340	0.0014	U	0.00091	U	0.00022	U	0.0004	U	0.00017	U	0.0014	U	0.00023	U	0.0013	U
Endrin aldehyde	mg/Kg	--	0.011	JP	0.0014	U	0.00036	U	0.00064	U	0.00045	JP	0.0032	JP	0.00037	U	0.0021	JP
Endrin ketone	mg/Kg	--	0.002	U	0.0013	U	0.00033	U	0.00059	U	0.00025	U	0.002	U	0.0043	P	0.0019	U
gamma-Chlordane	mg/Kg	1	0.0018	U	0.0012	U	0.00029	U	0.00052	U	0.00022	U	0.0017	U	0.0003	U	0.0017	U
Heptachlor	mg/Kg	0.7	0.0022	U	0.0014	U	0.00036	U	0.00064	U	0.00035	JP	0.0022	U	0.0052	P	0.0021	U
Heptachlor epoxide	mg/Kg	0.3	0.0017	U	0.0011	U	0.00028	U	0.00051	U	0.00036	JP	0.0017	U	0.0051	P	0.0017	U
Lindane	mg/Kg	2	0.027		0.0046	JP	0.00039	U	0.0007	U	0.0025	P	0.016	J	0.034		0.0072	JP
Methoxychlor	mg/Kg	5700	0.11		0.0047	U	0.0012	U	0.0021	U	0.00089	U	0.036		0.0012	U	0.0069	U
Silvex	mg/Kg	--	0.0052	U	0.017	U	0.0042	U	0.0075	U	0.0032	U	0.0051	U	0.0044	U	0.0049	U
Toxaphene	mg/Kg	3	0.12	U	0.079	U	0.019	U	0.035	U	0.015	U	0.12	U	0.02	U	0.12	U
Metals																		
Aluminum	mg/Kg	--	15700	J	9780	J	36200		18900		6700		13600		19800		14600	
Antimony	mg/Kg	450	8.1		2.4	B	8.2	BJ	1.6	BJ	1.6	J	3.4	J	14.9	J	2.5	J
Arsenic	mg/Kg	19	**101**		**22.6**		3.8	U	15.9		6.1		**96.3**		**36**		**91.9**	
Barium	mg/Kg	59000	173		39.5	B	29.5	B	48.5	B	98.2		211		143		176	
Beryllium	mg/Kg	140	0.87		0.73	B	0.1	U	1.2	J	0.55	J	1.1	J	0.59	BJ	1	J
Cadmium	mg/Kg	78	0.94	B	0.32	U	0.16	U	0.14	U	0.06	U	1.2		1.1		1.2	
Calcium	mg/Kg	--	18200		9190		163000		16300		28600		8820		48000		4550	
Chromium[4]	mg/Kg	--	3620	J	499	J	31100	J	2200	J	121	J	393	J	9590	J	471	J
Chromium (Hexavalent)[4]	mg/Kg	20	4.8		0.4	U	**1030**		10.6		0.4	U	0.4	U	15.2		13.7	
Cobalt	mg/Kg	590	22.1		5	B	123	J	21.9	J	5.2	BJ	11.6	J	41.1	J	12.5	J
Copper	mg/Kg	45000	251		40.9		9		19.6		47.8		278		141		261	
Iron	mg/Kg	--	42500	J	38300	J	91900		58100		18800		36300		53500		35600	
Lead	mg/Kg	800	316		56.5		4.4		28.7		158		359		262		298	
Magnesium	mg/Kg	--	12200		5460		105000		11200		6310		7350		15900		6900	
Manganese	mg/Kg	5900	562		260		853		368		433		470		626		426	
Mercury	mg/Kg	65	5		0.66		0.015	B	0.13		0.51		5.8		5.4		6.3	
Nickel	mg/Kg	23000	87.9		22.5	B	395		59.8		31.4		51.6		130		53.9	
Potassium	mg/Kg	--	2490		1950	B	151	B	3440		1090		2340		2130		2560	
Selenium	mg/Kg	5700	3.3		3.4		0.97	U	1.7		0.37	U	2.9		2		2.7	
Silver	mg/Kg	5700	2.1		0.48	B	0.39	B	0.17	B	0.28	B	2.6		1.5		2.2	
Sodium	mg/Kg	--	4210		17400		3090		11200		1420		4280		3410		4580	
Thallium	mg/Kg	79	4.5		5.4	B	10.9		1.7	B	0.41	U	0.95	B	4.3		1.3	B
Vanadium	mg/Kg	1100	106		21.5	B	719		102		17		38.5		155		40.5	
Zinc	mg/Kg	110000	404		73.9		285	J	105	J	73.5	J	437	J	403	J	442	J

TABLE 4-16

ANALYTICAL RESULTS
HACKENSACK RIVER SEDIMENT SAMPLES
STANDARD CHLORINE SITE RIVER FRONTAGE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	HRWC-10 07/29/08 0.0-1.0 ft[2] Primary		HRWC-10 07/29/08 2.0-3.0 ft Primary		HRWC-11 04/23/08 0.0-1.0 ft[2] Primary		HRWC-11 04/23/08 2.0-3.0 ft Primary		HRWC-12 04/24/08 0.0-1.0 ft[2] Primary		HRWC-12 04/24/08 2.0-3.0 ft Primary		HRWC-13 04/23/08 0.0-1.0 ft[2] Primary		HRWC-13 04/23/08 2.0-3.0 ft Primary	
Acid Volatile Sulfide/Simultaneously Extracted Metals																		
Acid Volatile Sulfide	umole	--	2.9		2.5	B	0.26	U	0.75	B	7.4		51.5		25.8		17.4	
Cadmium (SEM)	umol/g	--	0.0096	E	0.002	B	0.0011	B	0.02		0.0077		0.004		0.0081		0.0044	
Copper (SEM)	umol/g	--	2.8	E	0.31		0.0092	B	4.5		1.5		0.73		1.2		0.087	
Lead (SEM)	umol/g	--	1.4		0.23		0.066		1.7		0.92		1.9		1.2		0.0038	
Mercury (SEM)	umol/g	--	4.1E-05	B	4.4E-05	U	0.000011	U	0.000068	BJ	0.000013	BJ	0.000019	BJ	0.00011	J	0.000041	BJ
Nickel (SEM)	umol/g	--	0.86	E	0.29		0.32		1.7		0.26		0.31		1.3		4.6	
Silver (SEM)	umol/g	--	0.0032		0.00092	U	0.00023	U	0.0031	B	0.00068	B	0.0028		0.0029		0.0014	B
Zinc (SEM)	umol/g	--	4.7	E	1.2		0.68	J	7.2	J	3	J	1.8	J	3.6	J	2.6	J
Toxicity Characteristic Leaching Procedure[5]																		
1,1-Dichloroethene	mg/L	0.7	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
1,2-Dichloroethane	mg/L	0.5	0.026	U	0.026	U	0.026	U	0.026	U	0.026	U	0.026	U	0.026	U	0.026	U
1,4-Dichlorobenzene	mg/L	7.5	0.0046	U	0.0046	U	0.0046	U	0.0046	U	0.0046	U	0.0046	U	0.0046	U	0.0046	U
2,4,5-Trichlorophenol	mg/L	400	0.0041	U	0.0041	U	0.0041	U	0.0041	U	0.0041	U	0.0041	U	0.0041	U	0.0041	U
2,4,6-Trichlorophenol	mg/L	2	0.0026	U	0.0026	U	0.0026	U	0.0026	U	0.0026	U	0.0026	U	0.0026	U	0.0026	U
2,4-Dinitrotoluene	mg/L	0.13	0.0028	U	0.0028	U	0.0028	U	0.0028	U	0.0028	U	0.0028	U	0.0028	U	0.0028	U
2-Butanone	mg/L	200	0.029	U	0.029	U	0.029	U	0.029	U	0.029	U	0.029	U	0.029	U	0.029	U
Benzene	mg/L	0.5	0.033	U	0.033	U	0.033	U	0.033	U	0.033	U	0.033	U	0.033	U	0.033	U
Carbon Tetrachloride	mg/L	0.5	0.037	U	0.037	U	0.037	U	0.037	U	0.037	U	0.037	U	0.037	U	0.037	U
Chlorobenzene	mg/L	100	0.028	U	0.028	U	0.028	U	0.028	U	0.028	U	0.028	U	0.028	U	0.028	U
Chloroform	mg/L	6	0.031	U	0.031	U	0.031	U	0.031	U	0.031	U	0.031	U	0.031	U	0.031	U
Cresols	mg/L	200	0.0089	U	1.3		0.0089	U	0.0089	U	0.0089	U	0.0089	U	0.0089	U	0.0089	U
Hexachlorobenzene	mg/L	0.13	0.0049	U	0.0049	U	0.0049	U	0.0049	U	0.0049	U	0.0049	U	0.0049	U	0.0049	U
Hexachlorobutadiene	mg/L	0.5	0.0033	U	0.0033	U	0.0033	U	0.0033	U	0.0033	U	0.0033	U	0.0033	U	0.0033	U
Hexachloroethane	mg/L	3	0.0036	U	0.0036	U	0.0036	U	0.0036	U	0.0036	U	0.0036	U	0.0036	U	0.0036	U
Nitrobenzene	mg/L	2	0.0056	U	0.0056	U	0.0056	U	0.0056	U	0.0056	U	0.0056	U	0.0056	U	0.0056	U
Pentachlorophenol	mg/L	100	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Pyridine	mg/L	5	0.011	U	0.011	U	0.011	U	0.011	U	0.011	U	0.011	U	0.011	U	0.011	U
Tetrachloroethene	mg/L	0.7	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U
Trichloroethene	mg/L	0.5	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
Vinyl chloride	mg/L	0.2	0.038	U	0.038	U	0.038	U	0.038	U	0.038	U	0.038	U	0.038	U	0.038	U
Arsenic	mg/L	5	0.34	B	0.22	B	0.19	B	0.21	B	0.21		0.49		0.17	B	0.35	B
Barium	mg/L	100	0.15	BJ	0.05	BJ	0.034	B	0.063	B	0.36	B	0.42	B	0.37	B	0.47	B
Cadmium	mg/L	1	0.0052	B	0.0012	U	0.0012	U	0.0012	U	0.0012	U	0.0027	B	0.0012	U	0.0049	B
Chromium	mg/L	5	0.023	B	0.0082	B	**14.9**		0.14	B	0.0011	U	0.017	B	0.012	B	0.037	B
Lead	mg/L	5	0.21	B	0.013	U	0.013	U	0.019	B	0.22	B	0.19	B	0.052	B	0.17	B
Mercury	mg/L	0.2	5.5E-05	U	5.5E-05	U	0.000055	U	0.000055	U	0.000055	U	0.000055	U	0.000055	U	0.000055	U
Selenium	mg/L	1	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U
Silver	mg/L	5	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U
RCRA Characteristics and Indicators																		
Corrosivity (pH)	SU	2<pH<12.5	9.02		7.33		4.36		11.92		9.38		7.89		7.77		8.17	
Cyanide (Reactivity)	mg/Kg	23000	0.22	U	0.35	B	0.65	U	0.21	B	0.29	U	0.22	B	1.1		2.2	
Total Sulfide (Reactivity)	mg/Kg	--	27.6	U	216		490		20.6	U	37.1	U	464		1200		946	
Ignitability	none	--	No		No		No		No		No		No		No		No	
Total Organic Carbon	mg/Kg	--	91600		114000		405000		10100		116000		6870		41600		33900	
Oxidation Reduction Potential	mV	--	267		209		349		182		253		250		134		225	
Total Petroleum Hydrocarbons	mg/Kg	--	47.3		1720		1860		12		42.8		286		1040		1200	
Percent Solids	%	--	44.5		48.2		14.7		59.5		33.1		77.7		49.2		56.7	

TABLE 4-16

ANALYTICAL RESULTS
HACKENSACK RIVER SEDIMENT SAMPLES
STANDARD CHLORINE SITE RIVER FRONTAGE
KEARNY, NEW JERSEY

Notes:

1. Criteria are the NJDEP Non-Residential Direct Contact Soil Remediation Standards (online at www.nj.gov/dep/srp/regs/rs/rs appendix1.pdf) unless noted otherwise.
2. The volatile organic fraction sample from the surficial interval was obtained from a depth of 0.5 to 1.0 feet below the sediment bed surface.
3. The 1 ug/kg benchmark for 2,3,7,8-TCDD equivalents is the United States Environmental Protection Agency residential guideline per OSWER Directive 9200.4-26.
4. Nonpromulgated criteria for total (trivalent) and hexavalent chromium determined by chromium workgroup (www.state.nj.us/dep/srp/guidance).
   Criterion for residential exposure to trivalent chromium was used for total chromium.
5. Toxicity Characteristic Leaching Procedure limits as specified in 40 Code of Federal Regulations 261.24 - available at electronic CFR website (ecfr.gpoaccess.gov).

Exceedances are shown in bold, shaded typeface. Data qualifiers are as follows:

B - Organic results. Analyte detected in associated method blank
B - Inorganic results. Result is an estimate. Quantitation between the detection limit and the reporting limit.
C - Presence of coeulting isomer is evident based on appearance of peak shoulder.
E - Organic results. Result is an estimated concentration. Outside linear calibration range.
E - Inorganic results. Serial dilution was outside quality control limits for this analyte.
J - Organic results. Result is an estimate. Quantitated between the detection limit and the reporting limit.
J - Inorganic results. Result is an estimated concentration. Quantitated below the reporting limit.
P - Organic results. Percent difference between initial and confirmation column results is greater than 40%.
Q - One or more quality control criteria for identification not attained. Value is an Estimated Maximum Possible Concentration. Analyte may be present below the quantitation limit indicated.
S - Organic results. Ion suppression.
U - Not detected at the detection limit indicated.
-- - Not analyzed or criteria unavailable.

TABLE 4-17

ANALYTICAL RESULTS
HACKENSACK RIVER SEDIMENT SAMPLES
FORMER DIAMOND SITE RIVER FRONTAGE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	HRWC-1 05/19/08 0.0-1.0 ft Primary		HRWC-1 05/19/08 2.0-3.0 ft Primary		HRWC-2 05/19/08 0.0-1.0 ft Primary		HRWC-2 05/19/08 2.0-3.0 ft Primary		HRWC-3 05/19/08 0.0-1.0 ft Primary		HRWC-3 05/19/08 2.0-3.0 ft Primary		HRWC-4 05/09/08 0.0-1.0 ft Primary		HRWC-4 05/09/08 2.0-3.0 ft Primary	
Volatile Organics																		
1,1,1-Trichloroethane	mg/Kg	4200	0.002	U	0.0034	U	0.0008	U	0.0015	U	0.00071	U	0.00052	U	0.0015	U	0.0013	U
1,1,2,2-Tetrachloroethane	mg/Kg	3	0.003	U	0.0051	U	0.0012	U	0.0022	U	0.0011	U	0.00077	U	0.0017	U	0.0014	U
1,1,2-Trichloroethane	mg/Kg	6	0.0044	U	0.0076	U	0.0018	U	0.0032	U	0.0016	U	0.0012	U	0.0018	U	0.0015	U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg	--	0.0034	U	0.0059	U	0.0014	U	0.0025	U	0.0012	U	0.0009	U	0.0016	U	0.0013	U
1,1-Dichloroethane	mg/Kg	24	0.0024	U	0.0041	U	0.00095	U	0.0017	U	0.00084	U	0.00062	U	0.0014	U	0.0012	U
1,1-Dichloroethene	mg/Kg	150	0.0035	U	0.006	U	0.0014	U	0.0025	U	0.0012	U	0.00091	U	0.0017	U	0.0015	U
1,2,4-Trichlorobenzene	mg/Kg	820	0.0036	U	0.0062	U	0.0015	U	0.0026	U	0.0013	U	0.00095	U	0.0015	U	0.0013	U
1,2-Dibromoethane	mg/Kg	0.04	0.0036	U	0.0061	U	0.0014	U	0.0026	U	0.0013	U	0.00093	U	0.0015	U	0.0013	U
1,2-Dichlorobenzene	mg/Kg	59000	0.0033	U	0.0056	U	0.0013	U	0.0024	U	0.0012	U	0.00086	U	0.0016	U	0.0014	U
1,2-Dichloroethane	mg/Kg	3	0.0025	U	0.0043	U	0.001	U	0.0018	U	0.0009	U	0.00066	U	0.0016	U	0.0014	U
1,2-Dichloropropane	mg/Kg	5	0.0022	U	0.0038	U	0.0009	U	0.0016	U	0.00079	U	0.00059	U	0.0016	U	0.0014	U
1,3-Dichlorobenzene	mg/Kg	59000	0.0027	U	0.0046	U	0.0011	U	0.002	U	0.00096	U	0.00071	U	0.0016	U	0.0013	U
1,4-Dichlorobenzene	mg/Kg	13	0.0026	U	0.0045	U	0.0011	U	0.0019	U	0.00093	U	0.00069	U	0.0016	U	0.0014	U
2-Butanone	mg/Kg	44000	0.0036	U	0.0062	U	0.0015	U	0.0026	U	0.0013	U	0.00095	U	0.0014	U	0.0012	U
2-Hexanone	mg/Kg	--	0.0029	U	0.0049	U	0.0011	U	0.0021	U	0.001	U	0.00074	U	0.0012	U	0.00099	U
4-Methyl-2-pentanone	mg/Kg	--	0.0027	U	0.0046	U	0.0011	U	0.002	U	0.00095	U	0.0007	U	0.0013	U	0.0011	U
Acetone	mg/Kg	--	0.021	U	0.035	U	0.012	J	0.015	U	0.0073	U	0.0054	U	0.12		0.0063	U
Benzene	mg/Kg	5	0.0028	U	0.0048	U	0.0011	U	0.002	U	0.00099	U	0.00073	U	0.0015	U	0.0013	U
Bromodichloromethane	mg/Kg	3	0.0023	U	0.004	U	0.00093	U	0.0017	U	0.00082	U	0.0006	U	0.0014	U	0.0012	U
Bromoform	mg/Kg	280	0.0018	U	0.0031	U	0.00073	U	0.0013	U	0.00065	U	0.00048	U	0.0015	U	0.0013	U
Bromomethane	mg/Kg	59	0.0031	U	0.0052	U	0.0012	U	0.0022	U	0.0011	U	0.0008	U	0.0019	U	0.0016	U
Carbon disulfide	mg/Kg	110000	0.009	J	0.0036	U	0.00084	U	0.0015	U	0.00075	U	0.00055	U	0.0084		0.0015	U
Carbon tetrachloride	mg/Kg	2	0.0018	U	0.0032	U	0.00074	U	0.0013	U	0.00065	U	0.00048	U	0.0013	U	0.0011	U
Chlorobenzene	mg/Kg	7400	0.0031	U	0.0054	U	0.0012	U	0.0023	U	0.0011	U	0.00082	U	0.0016	U	0.0014	U
Chloroethane	mg/Kg	1100	0.0064	U	0.011	U	0.0026	U	0.0046	U	0.0023	U	0.0017	U	0.0021	U	0.0018	U
Chloroform	mg/Kg	2	0.0024	U	0.0041	U	0.00097	U	0.0018	U	0.00086	U	0.00063	U	0.0016	U	0.0013	U
Chloromethane	mg/Kg	12	0.0035	U	0.006	U	0.0014	U	0.0026	U	0.0012	U	0.00092	U	0.0016	U	0.0014	U
cis-1,2-Dichloroethene	mg/Kg	560	0.0029	U	0.005	U	0.0012	U	0.0021	U	0.001	U	0.00076	U	0.0016	U	0.0014	U
cis-1,3-Dichloropropene	mg/Kg	7	0.0028	U	0.0048	U	0.0011	U	0.002	U	0.00099	U	0.00073	U	0.0013	U	0.0011	U
Cyclohexane	mg/Kg	--	0.0015	U	0.0026	U	0.00061	U	0.0011	U	0.00054	U	0.0004	U	0.0015	U	0.0013	U
Dibromochloropropane	mg/Kg	--	0.0031	U	0.0053	U	0.0012	U	0.0022	U	0.0011	U	0.00081	U	0.0012	U	0.0011	U
Dibromochloromethane	mg/Kg	8	0.0029	U	0.005	U	0.0012	U	0.0021	U	0.001	U	0.00076	U	0.0014	U	0.0012	U
Dichlorodifluoromethane	mg/Kg	230000	0.0028	U	0.0047	U	0.0011	U	0.002	U	0.00097	U	0.00072	U	0.0019	U	0.0016	U
Ethylbenzene	mg/Kg	110000	0.0027	U	0.0046	U	0.0022	J	0.0019	U	0.00094	U	0.00069	U	0.0018	U	0.0015	U
Isopropylbenzene	mg/Kg	--	0.0028	U	0.0048	U	0.0019	J	0.002	U	0.00099	U	0.00073	U	0.0016	U	0.0013	U
Methyl acetate	mg/Kg	--	0.0037	U	0.0064	U	0.0015	U	0.0027	U	0.0013	U	0.00097	U	0.0016	U	0.0013	U
Methylcyclohexane	mg/Kg	--	0.003	U	0.0051	U	0.0012	U	0.0022	U	0.0011	U	0.00078	U	0.0017	U	0.0014	U
Methylene chloride	mg/Kg	97	0.0028	U	0.0048	U	0.0011	U	0.0073	J	0.00098	U	0.00072	U	0.0013	J	0.0012	B
Methyltert-butylether	mg/Kg	320	0.0031	U	0.0053	U	0.0012	U	0.0022	U	0.0011	U	0.00081	U	0.0014	U	0.0012	U
Styrene	mg/Kg	260	0.0022	U	0.0038	U	0.00088	U	0.0016	U	0.00078	U	0.00057	U	0.0017	U	0.0014	U
Tetrachloroethene	mg/Kg	5	0.0028	U	0.0048	U	0.0011	U	0.002	U	0.00099	U	0.00073	U	0.0019	U	0.0016	U
Toluene	mg/Kg	91000	0.003	U	0.0052	U	0.0012	U	0.0022	U	0.0011	U	0.00079	U	0.0012	U	0.00099	U
trans-1,2-Dichloroethene	mg/Kg	720	0.0025	U	0.0042	U	0.00098	U	0.0018	U	0.00087	U	0.00064	U	0.0017	U	0.0015	U
trans-1,3-Dichloropropene	mg/Kg	7	0.0025	U	0.0042	U	0.00099	U	0.0018	U	0.00087	U	0.00064	U	0.0013	U	0.0011	U
Trichloroethene	mg/Kg	20	0.0027	U	0.0047	U	0.0011	U	0.002	U	0.00096	U	0.00071	U	0.0017	U	0.0014	U
Trichlorofluoromethane	mg/Kg	340000	0.0038	U	0.0065	U	0.0015	U	0.0028	U	0.0013	U	0.00099	U	0.0024	U	0.002	U
Vinyl chloride	mg/Kg	2	0.0019	U	0.0033	U	0.00077	U	0.0014	U	0.00069	U	0.00051	U	0.0017	U	0.0014	U
Xylene (total)	mg/Kg	170000	0.0093	U	0.016	U	0.0037	U	0.0067	U	0.0033	U	0.0024	U	0.0052	U	0.0044	U
Semivolatile Organics																		
1,1'-Biphenyl	mg/Kg	34000	0.052	U	0.14	U	0.33	U	0.22	U	0.022	U	0.023	U	0.038	J	0.13	J
2,2'-oxybis(1-chloropropane)	mg/Kg	--	0.057	U	0.16	U	0.35	U	0.24	U	0.024	U	0.025	U	0.027	U	0.056	U
2,4,5-Trichlorophenol	mg/Kg	68000	0.078	U	0.22	U	0.49	U	0.34	U	0.034	U	0.034	U	0.037	U	0.077	U
2,4,6-Trichlorophenol	mg/Kg	74	0.076	U	0.21	U	0.48	U	0.33	U	0.033	U	0.033	U	0.036	U	0.075	U
2,4-Dichlorophenol	mg/Kg	2100	0.028	U	0.078	U	0.18	U	0.12	U	0.012	U	0.012	U	0.013	U	0.028	U
2,4-Dimethylphenol	mg/Kg	14000	0.041	U	0.11	U	0.25	U	0.18	U	0.018	U	0.018	U	0.019	U	0.04	U
2,4-Dinitrophenol	mg/Kg	1400	1.1	U	3.1	U	7	U	4.8	U	0.48	U	0.48	U	0.52	U	1.1	U
2,4-Dinitrotoluene	mg/Kg	3	0.049	U	0.14	U	0.31	U	0.21	U	0.021	U	0.021	U	0.023	U	0.048	U
2,6-Dinitrotoluene	mg/Kg	3	0.061	U	0.17	U	0.38	U	0.26	U	0.026	U	0.026	U	0.029	U	0.06	U
2-Chloronaphthalene	mg/Kg	--	0.055	U	0.15	U	0.34	U	0.24	U	0.024	U	0.024	U	0.026	U	0.054	U
2-Chlorophenol	mg/Kg	2200	0.047	U	0.13	U	0.3	U	0.21	U	0.021	U	0.021	U	0.022	U	0.047	U
2-Methylnaphthalene	mg/Kg	2400	0.052	U	0.14	U	0.33	U	0.23	U	0.034	J	0.027	J	0.088	J	0.3	J
2-Methylphenol	mg/Kg	3400	0.059	U	0.16	U	0.37	U	0.26	U	0.026	U	0.026	U	0.028	U	0.058	U
2-Nitroaniline	mg/Kg	23000	0.057	U	0.16	U	0.36	U	0.25	U	0.024	U	0.025	U	0.027	U	0.056	U
2-Nitrophenol	mg/Kg	--	0.075	U	0.21	U	0.47	U	0.32	U	0.032	U	0.033	U	0.035	U	0.074	U
3,3'-Dichlorobenzidine	mg/Kg	4	0.21	U	0.59	U	1.3	U	0.92	U	0.092	U	0.092	U	0.1	U	0.21	U
3-Nitroaniline	mg/Kg	--	0.081	U	0.22	U	0.51	U	0.35	U	0.035	U	0.035	U	0.038	U	0.08	U
4,6-Dinitro-2-methylphenol	mg/Kg	68	0.67	U	1.8	U	4.2	U	2.9	U	0.29	U	0.29	U	0.31	U	0.66	U
4-Bromophenylphenyl ether	mg/Kg	--	0.042	U	0.12	U	0.27	U	0.18	U	0.018	U	0.018	U	0.02	U	0.042	U
4-Chloroaniline	mg/Kg	--	0.081	U	0.23	U	0.51	U	0.35	U	0.035	U	0.035	U	0.038	U	0.08	U
4-Chlorophenyl phenyl ether	mg/Kg	--	0.047	U	0.13	U	0.29	U	0.2	U	0.02	U	0.02	U	0.022	U	0.046	U
4-Chloro-3-methylphenol	mg/Kg	--	0.058	U	0.16	U	0.36	U	0.25	U	0.025	U	0.025	U	0.027	U	0.057	U
4-Methylphenol	mg/Kg	340	0.059	U	0.16	U	0.37	U	0.26	U	0.042	J	0.026	U	0.03	J	0.058	U
4-Nitroaniline	mg/Kg	--	0.04	U	0.11	U	0.25	U	0.17	U	0.017	U	0.017	U	0.019	U	0.039	U
4-Nitrophenol	mg/Kg	--	0.074	U	0.2	U	0.46	U	0.32	U	0.032	U	0.032	U	0.035	U	0.073	U
Acenaphthene	mg/Kg	37000	0.049	U	0.16	J	0.31	U	0.3	J	0.034	J	0.034	J	0.22	J	1.1	
Acenaphthylene	mg/Kg	300000	0.055	U	0.15	U	0.96	J	1.2	J	0.21	J	0.12	J	0.77		1.1	
Acetophenone	mg/Kg	5	0.057	U	0.16	U	0.36	U	0.25	U	0.025	U	0.025	U	0.027	U	0.057	U
Anthracene	mg/Kg	30000	0.054	U	0.15	U	1.8	J	2	J	0.19	J	0.26	J	1.7		3.7	
Atrazine	mg/Kg	2400	0.065	U	0.18	U	0.41	U	0.28	U	0.028	U	0.028	U	0.031	U	0.064	U
Benzaldehyde	mg/Kg	68000	0.1	U	0.28	U	0.63	U	0.43	U	0.043	U	0.043	U	0.047	U	0.099	U
Benzo(a)anthracene	mg/Kg	2	0.092	J	0.1	U	**5.7**	J	**7.5**		0.97		1.2		**5.2**		**7.6**	
Benzo(a)pyrene	mg/Kg	0.2	0.081	J	0.18	J	**5**	J	**5.9**		**1.1**		**1.1**		**4.5**		**5.9**	
Benzo(b)fluoranthene	mg/Kg	2	0.14	J	0.2	J	**6.9**		**7.9**		1.6		1.6		**7.5**		**8.7**	
Benzo(ghi)perylene	mg/Kg	30000	0.032	U	0.089	U	2.4	J	2.8	J	0.5		0.52		2.6		3.4	
Benzo(k)fluoranthene	mg/Kg	23	0.03	U	0.084	U	0.19	U	0.13	U	0.013	U	0.013	U	0.014	U	0.03	U

TABLE 4-17

ANALYTICAL RESULTS
HACKENSACK RIVER SEDIMENT SAMPLES
FORMER DIAMOND SITE RIVER FRONTAGE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	HRWC-1 05/19/08 0.0-1.0 ft Primary		HRWC-1 05/19/08 2.0-3.0 ft Primary		HRWC-2 05/19/08 0.0-1.0 ft Primary		HRWC-2 05/19/08 2.0-3.0 ft Primary		HRWC-3 05/19/08 0.0-1.0 ft Primary		HRWC-3 05/19/08 2.0-3.0 ft Primary		HRWC-4 05/09/08 0.0-1.0 ft Primary		HRWC-4 05/09/08 2.0-3.0 ft Primary	
Semivolatile Organics (Continued)																		
Bis(2-chloroethoxy)methane	mg/Kg	--	0.044	U	0.12	U	0.28	U	0.19	U	0.019	U	0.019	U	0.021	U	0.043	U
Bis(2-chloroethyl)ether	mg/Kg	2	0.021	U	0.059	U	0.13	U	0.092	U	0.0092	U	0.0092	U	0.01	U	0.021	U
Bis(2-ethylhexyl)phthalate	mg/Kg	140	0.072	U	0.2	U	0.45	U	0.31	U	0.29	J	0.031	U	0.034	U	0.071	U
Butyl benzyl phthalate	mg/Kg	14000	0.076	U	0.21	U	0.47	U	0.33	U	0.033	U	0.033	U	0.036	U	0.075	U
Caprolactam	mg/Kg	340000	0.18	U	0.49	U	1.1	U	0.77	U	0.077	U	0.077	U	0.084	U	0.18	U
Carbazole	mg/Kg	96	0.039	U	0.11	U	0.24	U	0.17	U	0.017	U	0.018	J	0.081	J	0.14	J
Chrysene	mg/Kg	230	0.081	J	0.1	U	5	J	6.5		0.79		0.95		4.8		6.4	
Dibenzo(a,h)anthracene	mg/Kg	0.2	0.06	U	0.17	U	**0.7**	J	**0.75**	J	0.15	J	0.15	J	**0.64**		**1.1**	
Dibenzofuran	mg/Kg	--	0.052	U	0.14	U	0.33	U	0.23	U	0.033	J	0.041	J	0.13	J	0.65	J
Diethyl phthalate	mg/Kg	550000	0.084	U	0.23	U	0.53	U	0.36	U	0.036	U	0.036	U	0.04	U	0.083	U
Dimethyl phthalate	mg/Kg	--	0.053	U	0.15	U	0.33	U	0.23	U	0.023	U	0.023	U	0.025	U	0.053	U
Di-n-butyl phthalate	mg/Kg	68000	0.16	U	0.43	U	0.98	U	0.68	U	0.068	U	0.068	U	0.074	U	0.15	U
Di-n-octyl phthalate	mg/Kg	27000	0.066	U	0.18	U	0.41	U	0.28	U	0.028	U	0.028	U	0.031	U	0.065	U
Fluoranthene	mg/Kg	24000	0.15	J	0.22	J	9.1		13		1.9		2.6		14		14	
Fluorene	mg/Kg	24000	0.046	U	0.13	U	0.29	U	0.3	J	0.02	U	0.05	J	0.21	J	0.94	
Hexachlorobenzene	mg/Kg	1	0.057	U	0.16	U	0.36	U	0.25	U	0.025	U	0.025	U	0.027	U	0.056	U
Hexachlorobutadiene	mg/Kg	25	0.058	U	0.16	U	0.36	U	0.25	U	0.025	U	0.025	U	0.027	U	0.057	U
Hexachlorocyclopentadiene	mg/Kg	110	0.043	U	0.12	U	0.27	U	0.19	U	0.019	U	0.019	U	0.02	U	0.043	U
Hexachloroethane	mg/Kg	140	0.042	U	0.12	U	0.26	U	0.18	U	0.018	U	0.018	U	0.02	U	0.042	U
Indeno(1,2,3-cd)pyrene	mg/Kg	2	0.051	J	0.093	U	**2.1**	J	**2.5**	J	0.46		0.46		**2.5**		**3**	
Isophorone	mg/Kg	2000	0.053	U	0.15	U	0.33	U	0.23	U	0.023	U	0.023	U	0.025	U	0.052	U
Naphthalene	mg/Kg	17	0.046	U	0.13	U	2.1	J	1.1	J	0.16	J	0.35	J	0.68		4	
Nitrobenzene	mg/Kg	340	0.023	U	0.065	U	0.15	U	0.1	U	0.01	U	0.01	U	0.011	U	0.023	U
N-Nitrosodiphenylamine	mg/Kg	390	0.051	U	0.14	U	0.32	U	0.22	U	0.022	U	0.022	U	0.024	U	0.05	U
N-Nitrosodipropylamine	mg/Kg	0.3	0.023	U	0.064	U	0.14	U	0.1	U	0.01	U	0.01	U	0.011	U	0.023	U
Pentachlorophenol	mg/Kg	10	0.07	U	0.19	U	0.44	U	0.3	U	0.03	U	0.03	U	0.033	U	0.069	U
Phenanthrene	mg/Kg	300000	0.045	U	0.24	J	0.74	J	0.7	J	0.15	J	0.2	J	1.9		4.7	
Phenol	mg/Kg	210000	0.057	U	0.16	U	0.36	U	0.25	U	0.19	J	0.025	U	0.027	U	0.056	U
Pyrene	mg/Kg	18000	0.18	J	0.21	J	9.6		14		1.8		2.1		12		12	
Polychlorinated Dioxins and Furans																		
1,2,3,4,6,7,8-HpCDD	ug/Kg	--	0.018		0.0027	QJ	0.013	Q	0.0056	J	0.0065		0.004	J	0.029		0.0038	QJ
1,2,3,4,6,7,8-HpCDF	ug/Kg	--	0.59	QB	0.095	B	0.069	B	0.33	B	0.017	B	0.0029	BJ	0.5		0.005	J
1,2,3,4,7,8,9-HpCDF	ug/Kg	--	0.022		0.004	QJ	0.0029	QJ	0.014		0.00079	J	0.00012	QJ	0.02		0.007	U
1,2,3,4,7,8-HxCDD	ug/Kg	--	0.00066	J	0.039	U	0.00072	QJ	0.012	U	0.00014	QJ	0.00014	J	0.0012	QJ	0.007	U
1,2,3,4,7,8-HxCDF	ug/Kg	--	0.21	QB	0.037	BJ	0.031	B	0.13	QB	0.0065	QB	0.00087	QBJ	0.19		0.0018	QJ
1,2,3,6,7,8-HxCDD	ug/Kg	--	0.0029	J	0.039	U	0.0016	QJ	0.00075	J	0.00044	QJ	0.00026	QJ	0.0045	QJ	0.007	U
1,2,3,6,7,8-HxCDF	ug/Kg	--	0.025	B	0.0042	QBJ	0.0041	BJ	0.014	B	0.0012	BJ	0.00048	BJ	0.022		0.007	U
1,2,3,7,8,9-HxCDD	ug/Kg	--	0.0017	J	0.039	U	0.00097	J	0.012	U	0.00026	QJ	0.00031	J	0.0033	J	0.007	U
1,2,3,7,8,9-HxCDF	ug/Kg	--	0.014	U	0.039	U	0.009	U	0.012	U	0.00014	J	0.0062	U	0.0068	U	0.007	U
1,2,3,7,8-PCDD	ug/Kg	--	0.0006	QJ	0.039	U	0.009	U	0.012	U	0.0062	U	0.0062	U	0.0017	QJ	0.007	U
1,2,3,7,8-PCDF	ug/Kg	--	0.0023	QJ	0.039	U	0.0026	J	0.0017	J	0.00076	J	0.00046	J	0.0033	QJ	0.007	U
2,3,4,6,7,8-HxCDF	ug/Kg	--	0.0081	J	0.0012	QJ	0.0019	QJ	0.0043	J	0.00043	J	0.00035	J	0.0072		0.007	U
2,3,4,7,8-PCDF	ug/Kg	--	0.015		0.0025	J	0.0035	J	0.0091	J	0.0011	J	0.0003	QJ	0.018		0.00053	QJ
2,3,7,8-TCDD	ug/Kg	--	0.0033		0.0079	U	0.015		0.0025	U	0.0012	QJ	0.0012	U	0.0051		0.0014	U
2,3,7,8-TCDF	ug/Kg	--	0.0017	J	0.00089	QJ	0.0044		0.0013	QJ	0.0011	QJ	0.0012	QJ	0.0029		0.00083	J
OCDD	ug/Kg	--	0.22	B	0.052	BJ	0.61	B	0.13	B	0.15	B	0.22	B	0.36		0.21	
OCDF	ug/Kg	--	1.1	B	0.26	B	0.15	B	0.79	B	0.026	B	0.0076	BJ	0.83	B	0.011	QBJ
Total HpCDD	ug/Kg	--	0.044	B	0.0079	BQJ	0.038	QB	0.014	BJ	0.017	B	0.011	B	0.067		0.013	Q
Total HpCDF	ug/Kg	--	0.67	QB	0.11	QB	0.082	QB	0.38	QB	0.021	QB	0.0045	QJB	0.6	Q	0.005	J
Total HxCDD	ug/Kg	--	0.022	QJ	0.0035	QJ	0.017	QJ	0.0061	QJ	0.0059	QJ	0.0039	QJ	0.038	Q	0.0046	QJ
Total HxCDF	ug/Kg	--	0.41	QB	0.069	QJB	0.056	QB	0.24	QB	0.017	QB	0.004	QJB	0.38	Q	0.0031	QJ
Total PeCDD	ug/Kg	--	0.016	QJ	0.039	U	0.0045	QJ	0.0021	QJ	0.0037	QJ	0.0012	QJ	0.057	Q	0.0022	QJ
Total PeCDF	ug/Kg	--	0.16	Q	0.024	QJ	0.038	Q	0.083	Q	0.015	QJ	0.004	QJ	0.18	Q	0.0047	QJ
Total TCDD	ug/Kg	--	0.018	Q	0.0028	QJ	0.037	Q	0.0036	QJ	0.0055	Q	0.0019	QJ	0.063	QS	0.0019	QJ
Total TCDF	ug/Kg	--	0.084	Q	0.016	QJ	0.047	Q	0.044	Q	0.019	Q	0.0085	QJ	0.13	QS	0.0029	Q
Polychlorinated Dioxins/Furans (2,3,7,8 Equivalents)																		
1,2,3,4,6,7,8-HpCDD	0.01	--	1.8E-04		--		--		5.6E-05		6.5E-05		4.0E-05		2.9E-04		--	
1,2,3,4,6,7,8-HpCDF	0.01	--	--		9.5E-04		6.9E-04		3.3E-03		1.7E-04		2.9E-05		5.0E-03		5.0E-05	
1,2,3,4,7,8,9-HpCDF	0.01	--	2.9E-05		--		--		7.5E-06		--		--		2.0E-04		--	
1,2,3,4,7,8-HxCDD	0.10	--	2.2E-03		--		--		1.4E-03		7.9E-05		--		--		--	
1,2,3,4,7,8-HxCDF	0.10	--	6.6E-05		--		--		--		--		1.4E-05		1.9E-02		--	
1,2,3,6,7,8-HxCDD	0.10	--	--		3.7E-03		3.1E-03		--		--		--		--		--	
1,2,3,6,7,8-HxCDF	0.10	--	2.5E-03		--		4.1E-04		1.4E-03		1.2E-04		4.8E-05		2.2E-03		--	
1,2,3,7,8,9-HxCDD	0.10	--	1.7E-04		--		9.7E-05		--		--		3.1E-05		3.3E-04		--	
1,2,3,7,8,9-HxCDF	0.10	--	--		--		--		--		1.4E-05		--		--		--	
1,2,3,7,8-PCDD	1.00	--	--		--		--		--		--		--		--		--	
1,2,3,7,8-PCDF	0.05	--	--		--		1.3E-04		8.5E-05		3.8E-05		2.3E-05		--		--	
2,3,4,6,7,8-HxCDF	0.10	--	8.1E-04		--		--		4.3E-04		4.3E-05		3.5E-05		7.2E-04		--	
2,3,4,7,8-PCDF	0.50	--	7.5E-03		1.3E-03		1.8E-03		4.6E-03		5.5E-04		--		9.0E-03		--	
2,3,7,8-TCDD	1.00	--	3.3E-03		--		1.5E-02		--		--		--		5.1E-03		--	
2,3,7,8-TCDF	0.10	--	1.7E-04		--		4.4E-04		--		--		--		2.9E-04		8.3E-05	
OCDD	0.0001	--	2.2E-05		5.2E-06		6.1E-05		1.3E-05		1.5E-05		2.2E-05		3.6E-05		2.1E-05	
OCDF	0.0001	--	1.1E-04		2.6E-05		1.5E-05		7.9E-05		2.6E-06		7.6E-07		8.3E-05		--	
Total 2,3,7,8-TCDD Equivalents[2]	ug/Kg	1	1.7E-02		5.9E-03		2.2E-02		1.1E-02		1.1E-03		2.4E-04		4.2E-02		1.5E-04	
Polychlorinated Biphenyls (Aroclors)																		
Aroclor 1016	mg/Kg	1	0.0071	U	0.02	U	0.0045	U	0.0061	U	0.003	U	0.0031	U	0.0033	U	0.0035	U
Aroclor 1221	mg/Kg	1	0.0091	U	0.025	U	0.0057	U	0.0078	U	0.0039	U	0.0039	U	0.0043	U	0.0045	U
Aroclor 1232	mg/Kg	1	0.0081	U	0.023	U	0.0051	U	0.007	U	0.0035	U	0.0035	U	0.0039	U	0.004	U
Aroclor 1242	mg/Kg	1	0.0077	U	0.021	U	0.0049	U	0.0067	U	0.0033	U	0.0033	U	0.0037	U	0.0038	U
Aroclor 1248	mg/Kg	1	0.0045	U	0.012	U	0.0028	U	0.0039	U	0.0019	U	0.0019	U	0.059		0.0022	U
Aroclor 1254	mg/Kg	1	0.0067	U	0.019	U	0.0043	U	0.0058	U	0.0029	U	0.0029	U	0.0032	U	0.0033	U
Aroclor 1260	mg/Kg	1	0.0067	U	0.019	U	0.0043	U	0.0058	U	0.0029	U	0.0029	U	0.014	J	0.0033	U
Aroclor 1262	mg/Kg	1	0.01	U	0.029	U	0.0066	U	0.009	U	0.0045	U	0.0045	U	0.0049	U	0.0051	U
Aroclor 1268	mg/Kg	1	0.0061	U	0.017	U	0.0038	U	0.0053	U	0.0026	U	0.0026	U	0.0029	U	0.003	U

TABLE 4-17

ANALYTICAL RESULTS
HACKENSACK RIVER SEDIMENT SAMPLES
FORMER DIAMOND SITE RIVER FRONTAGE
KEARNY, NEW JERSEY

Constituent of Interest	Units	Criterion[1]	HRWC-1 05/19/08 0.0-1.0 ft Primary		HRWC-1 05/19/08 2.0-3.0 ft Primary		HRWC-2 05/19/08 0.0-1.0 ft Primary		HRWC-2 05/19/08 2.0-3.0 ft Primary		HRWC-3 05/19/08 0.0-1.0 ft Primary		HRWC-3 05/19/08 2.0-3.0 ft Primary		HRWC-4 05/09/08 0.0-1.0 ft Primary		HRWC-4 05/09/08 2.0-3.0 ft Primary	
Metals																		
Aluminum	mg/Kg	--	10400		2290		8890		10300		2870		2690		2770		4440	
Antimony	mg/Kg	450	0.34	BJ	0.72	U	0.49	BJ	1.6	BJ	1.2	J	1.1	B	1.4		1.8	
Arsenic	mg/Kg	19	18.3		1.8	U	**28.2**		**43.2**		10.4		10.6		6		16.7	
Barium	mg/Kg	59000	38	B	18.2	B	117		143		52		59.3		40.9		112	
Beryllium	mg/Kg	140	0.92	B	0.45	B	0.57	B	0.79	B	0.25	B	0.24	B	0.25	B	0.35	B
Cadmium	mg/Kg	78	0.15	B	0.37	U	0.83	B	1.1	B	0.28	B	0.24	B	0.21	B	0.24	B
Calcium	mg/Kg	--	5810		9370		10300		4570		1420		1830		1780		1920	
Chromium[3]	mg/Kg	120000	505		24		2400		538		1930		711		367	J	425	J
Chromium (Hexavalent)[3]	mg/Kg	20	7.43	U	0.4	U	**47.8**		0.4	U	**159**		17.3		10.3		6.1	
Cobalt	mg/Kg	590	12.1	B	1.2	B	11.1		8.6	B	34		35.5		7.7		29.8	
Copper	mg/Kg	45000	21.3		5.1	B	104		161		39.4		38.7		29.8		66.2	
Iron	mg/Kg	--	30700		7810		27000		27800		14400		19800		8830	J	18200	J
Lead	mg/Kg	800	31.6	J	4.4	J	125	J	176	J	34.8	J	37.1	J	40.3		70	
Magnesium	mg/Kg	--	6100		8490		5160		5790		4670		4180		8430		4030	
Manganese	mg/Kg	5900	242		206		386		424		183		348		138		485	
Mercury	mg/Kg	65	0.61		0.093	B	3		4.1		0.71		1.3		0.67		3.4	
Nickel	mg/Kg	23000	37.6		4.4	B	44.8		35.2		290		357		142		252	
Potassium	mg/Kg	--	2140		1050	B	1650		2090		513	B	488	B	464	B	728	
Selenium	mg/Kg	5700	0.82	U	2.3	U	1.3		1.6		0.46	B	0.42	B	0.39	U	0.91	
Silver	mg/Kg	5700	0.33	BJ	0.49	BJ	0.97	J	1.5	J	0.43	BJ	0.36	BJ	0.53	BJ	0.65	BJ
Sodium	mg/Kg	--	7120		17400		2930		5000		905		1090		1200		1530	
Thallium	mg/Kg	79	0.91	U	2.5	U	1.1	B	0.79	U	0.87	B	0.56	B	0.63	B	2.1	
Vanadium	mg/Kg	1100	70.2		8.7	B	51.5		27.9		22.3		12.5		19		16	
Zinc	mg/Kg	110000	74.3		18		230		307		64.6		60.4		70		122	
Toxicity Characteristic Leaching Procedure[4]																		
1,1-Dichloroethene	mg/L	0.7	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
1,2-Dichloroethane	mg/L	0.5	0.026	U	0.026	U	0.026	U	0.026	U	0.026	U	0.026	U	0.026	U	0.026	U
1,4-Dichlorobenzene	mg/L	7.5	0.0046	U	0.0046	U	0.0046	U	0.0046	U	0.0046	U	0.0046	U	0.0046	U	0.0046	U
2,4,5-Trichlorophenol	mg/L	400	0.0041	U	0.0041	U	0.0041	U	0.0041	U	0.0041	U	0.0041	U	0.0041	U	0.0041	U
2,4,6-Trichlorophenol	mg/L	2	0.0026	U	0.0026	U	0.0026	U	0.0026	U	0.0026	U	0.0026	U	0.0026	U	0.0026	U
2,4-Dinitrotoluene	mg/L	0.13	0.0028	U	0.0028	U	0.0028	U	0.0028	U	0.0028	U	0.0028	U	0.0028	U	0.0028	U
2-Butanone	mg/L	200	0.033	U	0.033	U	0.033	U	0.033	U	0.033	U	0.033	U	0.033	U	0.033	U
Benzene	mg/L	0.5	0.037	U	0.037	U	0.037	U	0.037	U	0.037	U	0.037	U	0.037	U	0.037	B
Carbon Tetrachloride	mg/L	0.5	0.028	U	0.028	U	0.028	U	0.028	U	0.028	U	0.028	U	0.028	U	0.028	B
Chlorobenzene	mg/L	100	0.031	U	0.031	U	0.031	U	0.031	U	0.031	U	0.031	U	0.031	U	0.031	U
Chloroform	mg/L	6	0.029	U	0.029	U	0.029	U	0.029	U	0.029	U	0.029	U	0.029	U	0.029	B
Cresols	mg/L	200	0.0089	U	0.0089	U	0.0089	U	0.0089	U	0.0089	U	0.0089	U	0.0089	U	0.0089	U
Hexachlorobenzene	mg/L	0.13	0.0049	U	0.0049	U	0.0049	U	0.0049	U	0.0049	U	0.0049	U	0.0049	U	0.0049	U
Hexachlorobutadiene	mg/L	0.5	0.0033	U	0.0033	U	0.0033	U	0.0033	U	0.0033	U	0.0033	U	0.0033	U	0.0033	U
Hexachloroethane	mg/L	3	0.0036	U	0.0036	U	0.0036	U	0.0036	U	0.0036	U	0.0036	U	0.0036	U	0.0036	B
Nitrobenzene	mg/L	2	0.0056	U	0.0056	U	0.0056	U	0.0056	U	0.0056	U	0.0056	U	0.0056	U	0.0056	U
Pentachlorophenol	mg/L	100	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Pyridine	mg/L	5	0.011	U	0.011	U	0.011	U	0.011	U	0.011	U	0.011	U	0.011	U	0.011	U
Tetrachloroethene	mg/L	0.7	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U
Trichloroethene	mg/L	0.5	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	B
Vinyl chloride	mg/L	0.2	0.038	U	0.038	U	0.038	U	0.038	U	0.038	U	0.038	U	0.038	U	0.038	U
Arsenic	mg/L	5	0.18	B	0.16	B	0.19	B	0.23	B	0.17	B	0.2	B	0.18	B	0.21	U
Barium	mg/L	100	0.14	B	0.021	B	0.32	B	0.086	B	0.99	B	1.3	B	0.55	B	0.82	U
Cadmium	mg/L	1	0.0012	U	0.0012	U	0.0012	U	0.0012	U	0.0018	B	0.0029	B	0.0042	B	0.0036	U
Chromium	mg/L	5	0.026	B	0.0047	B	0.061	B	0.032	B	0.54		0.19	B	0.063	B	0.03	U
Lead	mg/L	5	0.74		0.013	U	0.059	B	0.014	B	1.6		0.081	B	4.6		0.062	U
Mercury	mg/L	0.2	5.5E-05	U	5.5E-05	U	5.5E-05	U	5.5E-05	U	5.5E-05	U	5.5E-05	U	5.5E-05	U	5.5E-05	U
Selenium	mg/L	1	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U
Silver	mg/L	5	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U
RCRA Characteristics and Indicators																		
Corrosivity (pH)	SU	2<pH<12.5	7.71		7.41		7.8		7.51		7.89		9.01		7.99		8.23	
Cyanide	mg/Kg	23000	0.27	U	0.75	U	2.5		0.84	B	1.1		1.1		0.13	U	0.45	B
Total Sulfide (Reactivity)	mg/Kg	--	433		126	B	1580		158		179		730		540		1190	
Ignitability	none	--	No		No		No		No		No		No		No		No	
Total Organic Carbon	mg/Kg	--	76800		439000		42700		144000		18100		17700		10500		15600	
Oxidation Reduction Potential	mV	--	237		288		310		317		404		306		201		92	
Total Petroleum Hydrocarbons	mg/Kg	--	--		--		--		--		--		--		--		--	
Percent Solids	%	--	35.1		12.7		55.6		40.6		80.6		81.1		74		71.1	

Notes:

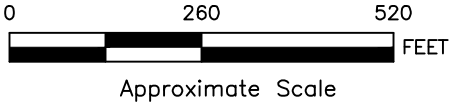
1. Criteria are the NJDEP Non-Residential Direct Contact Soil Remediation Standards (online at www.nj.gov/dep/srp/regs/rs/rs_appendix1.pdf) unless noted otherwise.
2. The 1 ug/kg benchmark for 2,3,7,8-TCDD equivalents is the United States Environmental Protection Agency residential guideline per OSWER Directive 9200.4-26.
3. Nonpromulgated criteria for total (trivalent) and hexavalent chromium determined by chromium workgroup (www.state.nj.us/dep/srp/guidance). Criterion for residential exposure to trivalent chromium was used for total chromium.
4. Toxicity Characteristic Leaching Procedure limits as specified in 40 Code of Federal Regulations 261.24 - available at electronic CFR website (ecfr.gpoaccess.gov).

Exceedances are shown in bold, shaded typeface. Data qualifiers are as follows:

B - Organic results. Analyte detected in associated method blank
B - Inorganic results. Result is an estimate. Quantitation between the detection limit and the reporting limit.
J - Organic results. Result is an estimate. Quantitated between the detection limit and the reporting limit.
J - Inorganic results. Result is an estimated concentration. Quantitated below the reporting limit.
Q - One or more quality control criteria for identification not attained. Value is an Estimated Maximum Possible Concentration. Analyte may be present below the quantitation limit indicated.
U - Not detected at the detection limit indicated.
-- - Not analyzed or criteria unavailable.

APPENDIX A
HISTORIC AERIAL PHOTOGRAPHS

SCCC SITE AFTER INTERIM REMEDIAL MEASURES (2012)

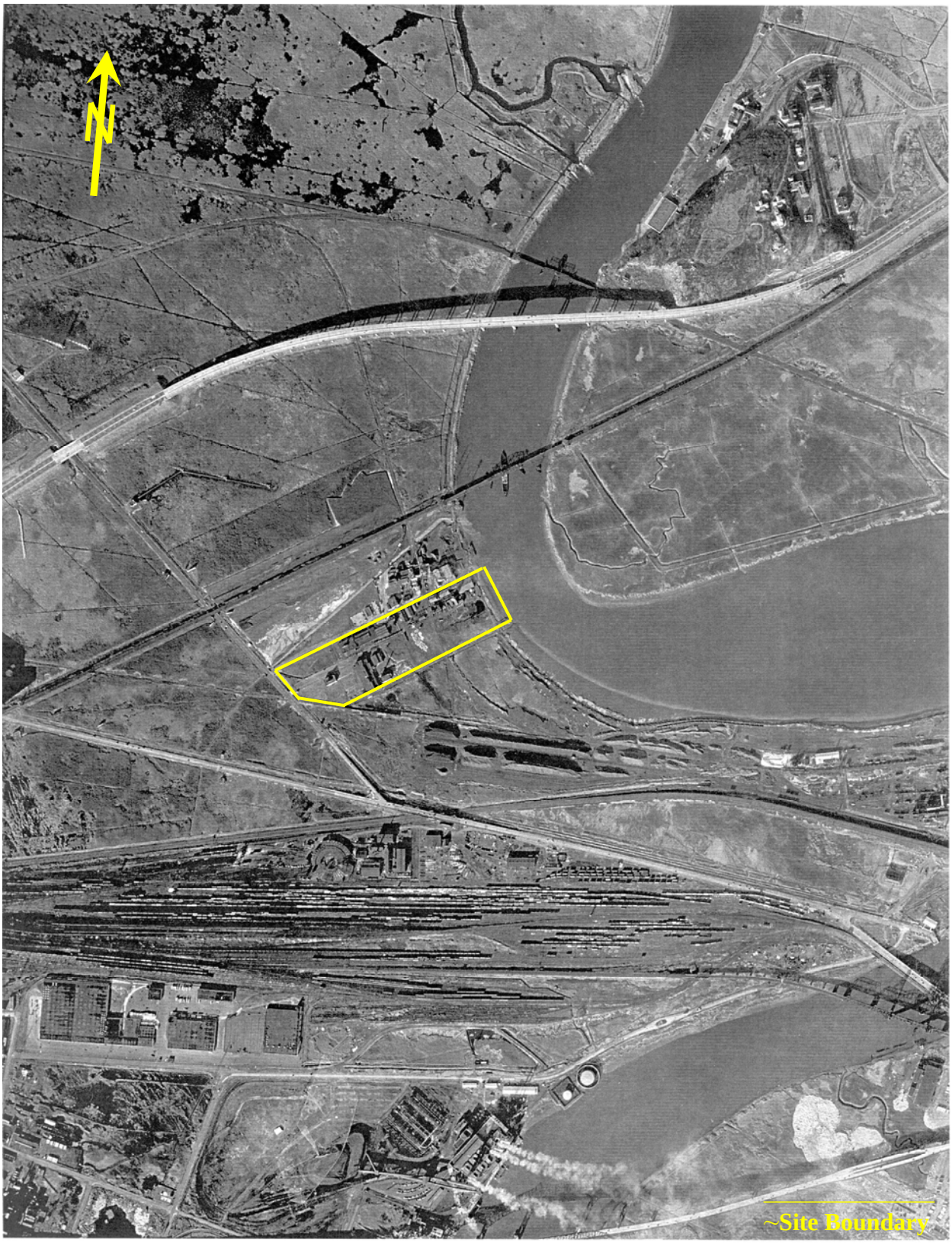


SCCC SITE PRIOR TO INTERIM REMEDIAL MEASURES (1986)

Approximate Scale

SCCC SITE AFTER INTERIM REMEDIAL MEASURES (2006)

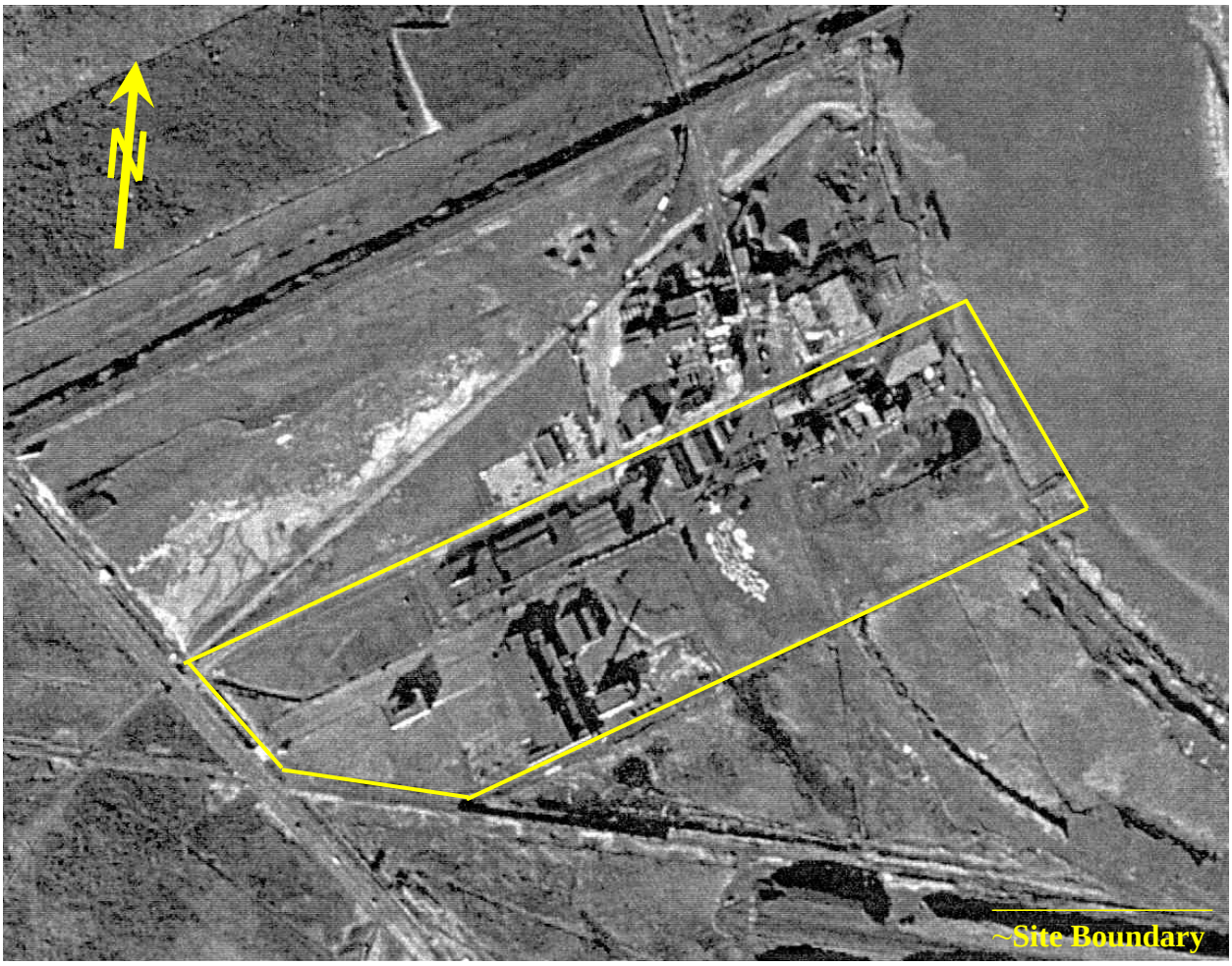
Approximate Scale



SCCC SITE AERIAL PHOTOGRAPH – 1953

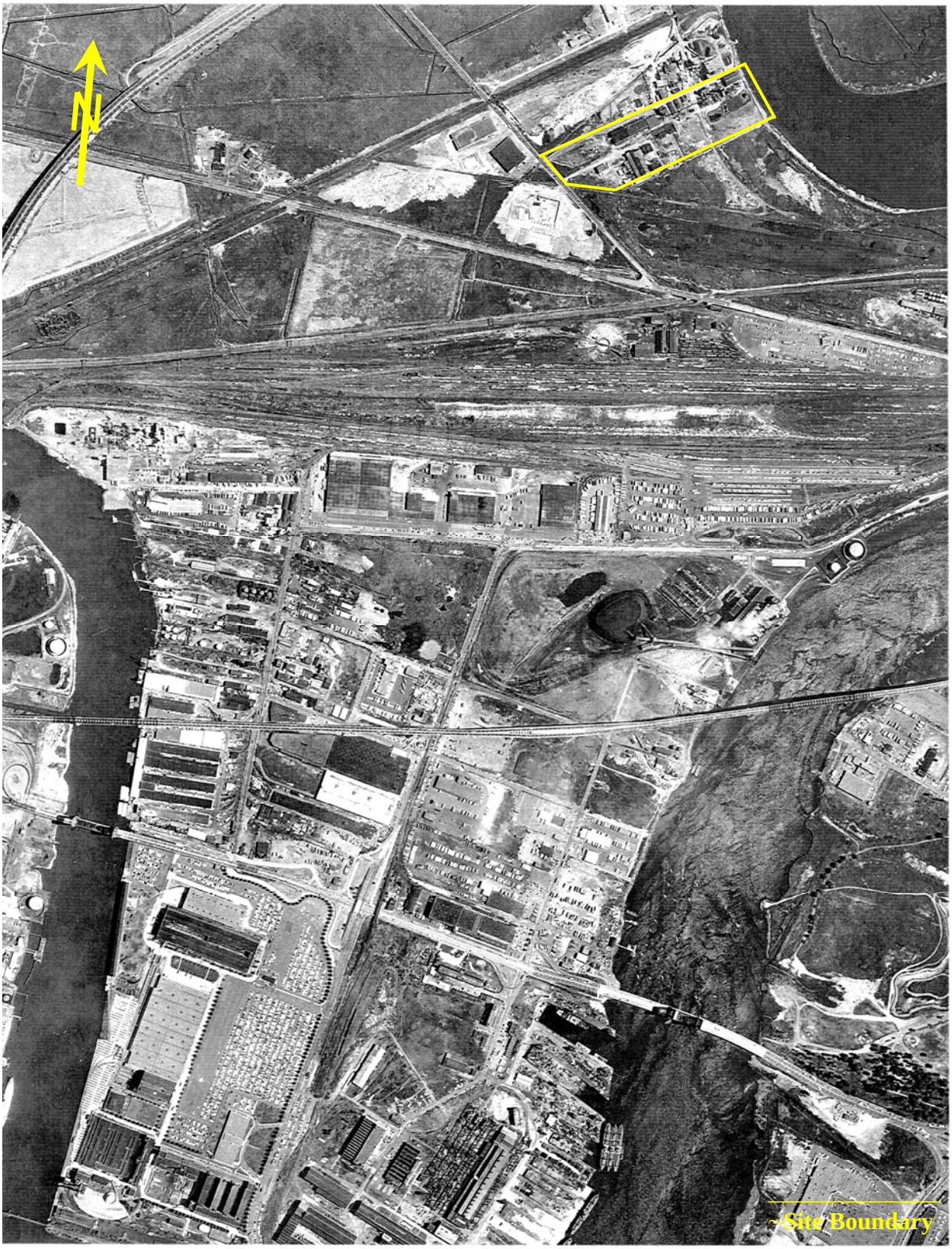
0 1300 2600

Approximate Scale



SCCC SITE AERIAL PHOTOGRAPH – 1953
(ENLARGED PORTION OF ORIGINAL)

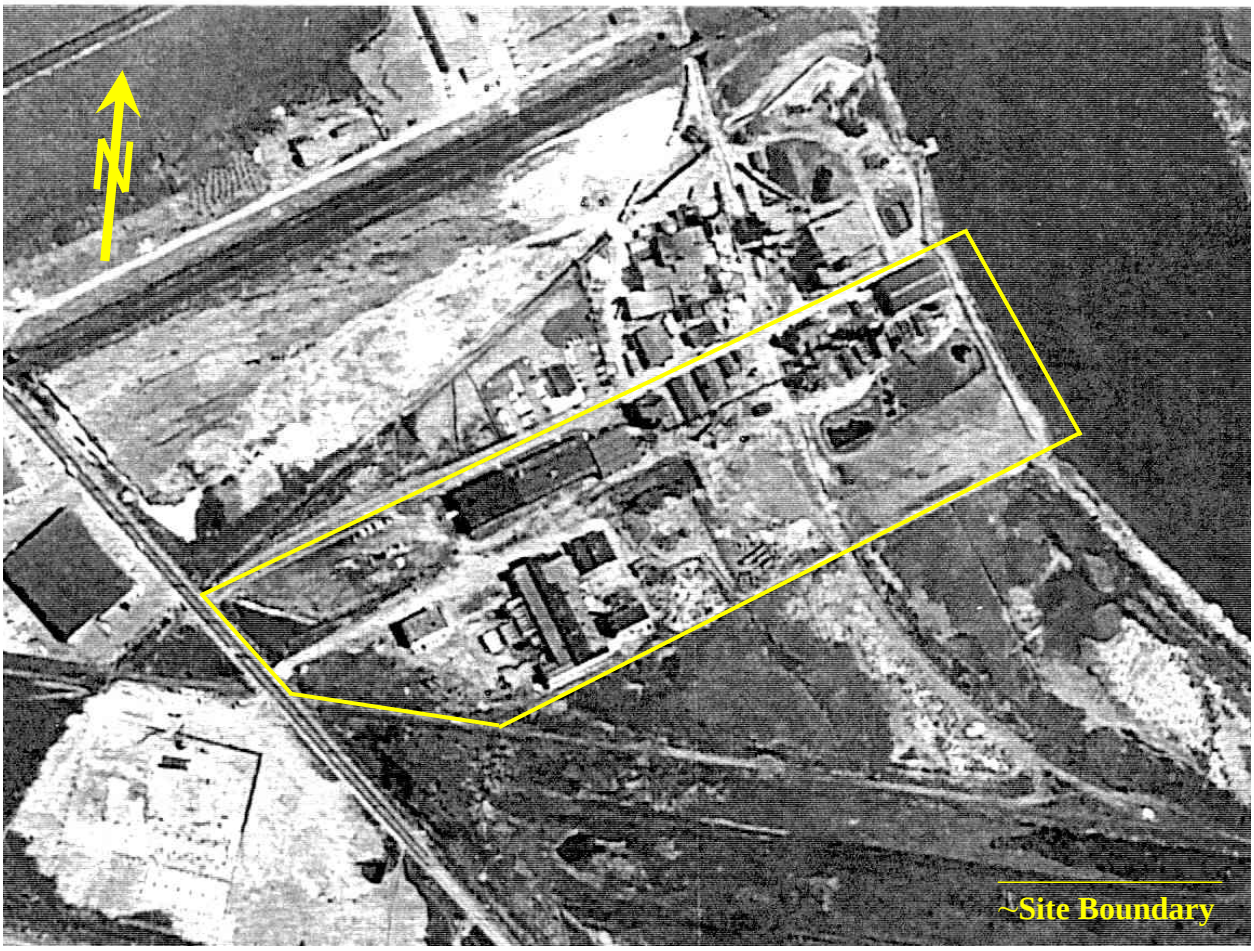
Approximate Scale



SCCC SITE AERIAL PHOTOGRAPH – 1966

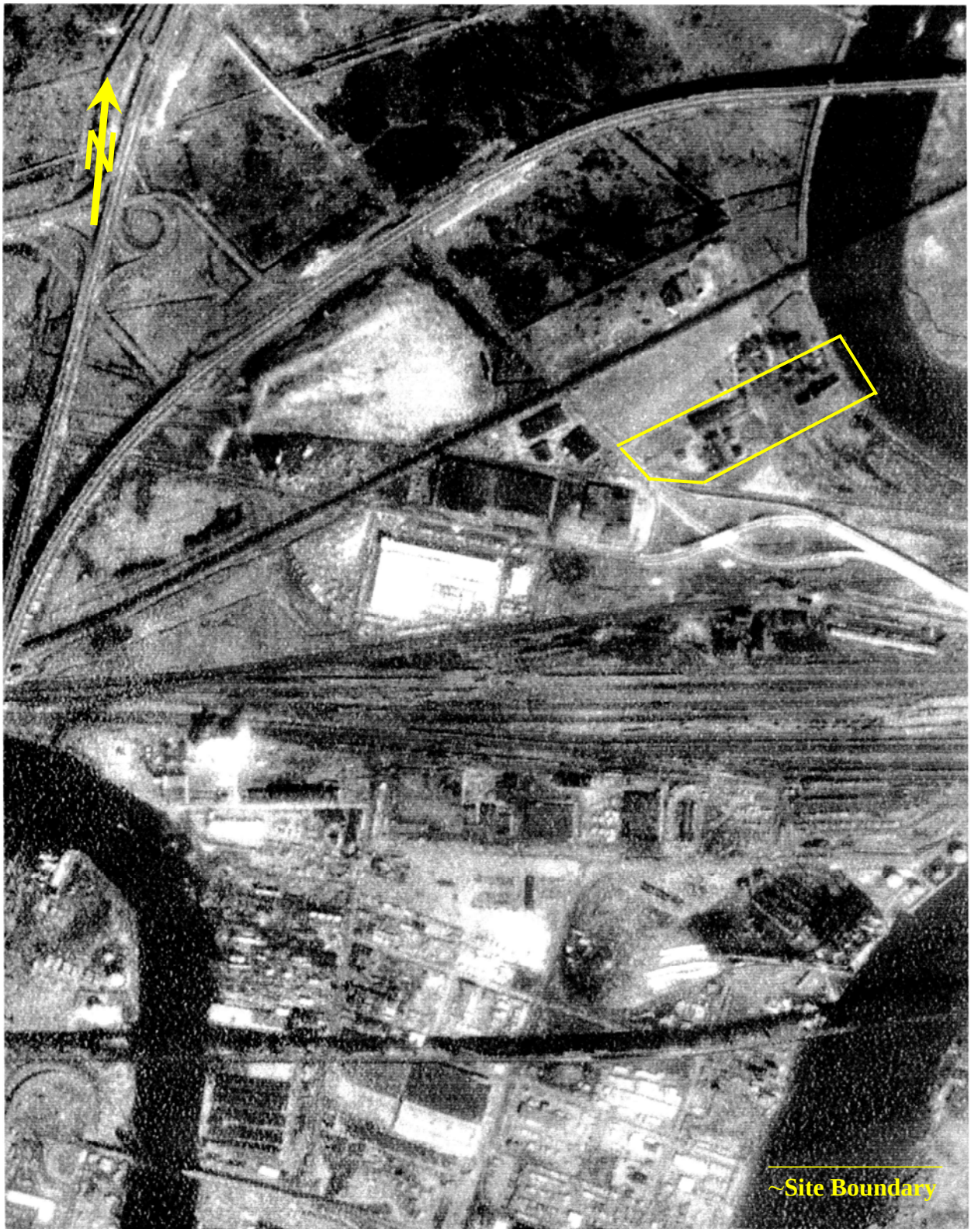
0 1300 2600

Approximate Scale



SCCC SITE AERIAL PHOTOGRAPH – 1966
(ENLARGED PORTION OF ORIGINAL)

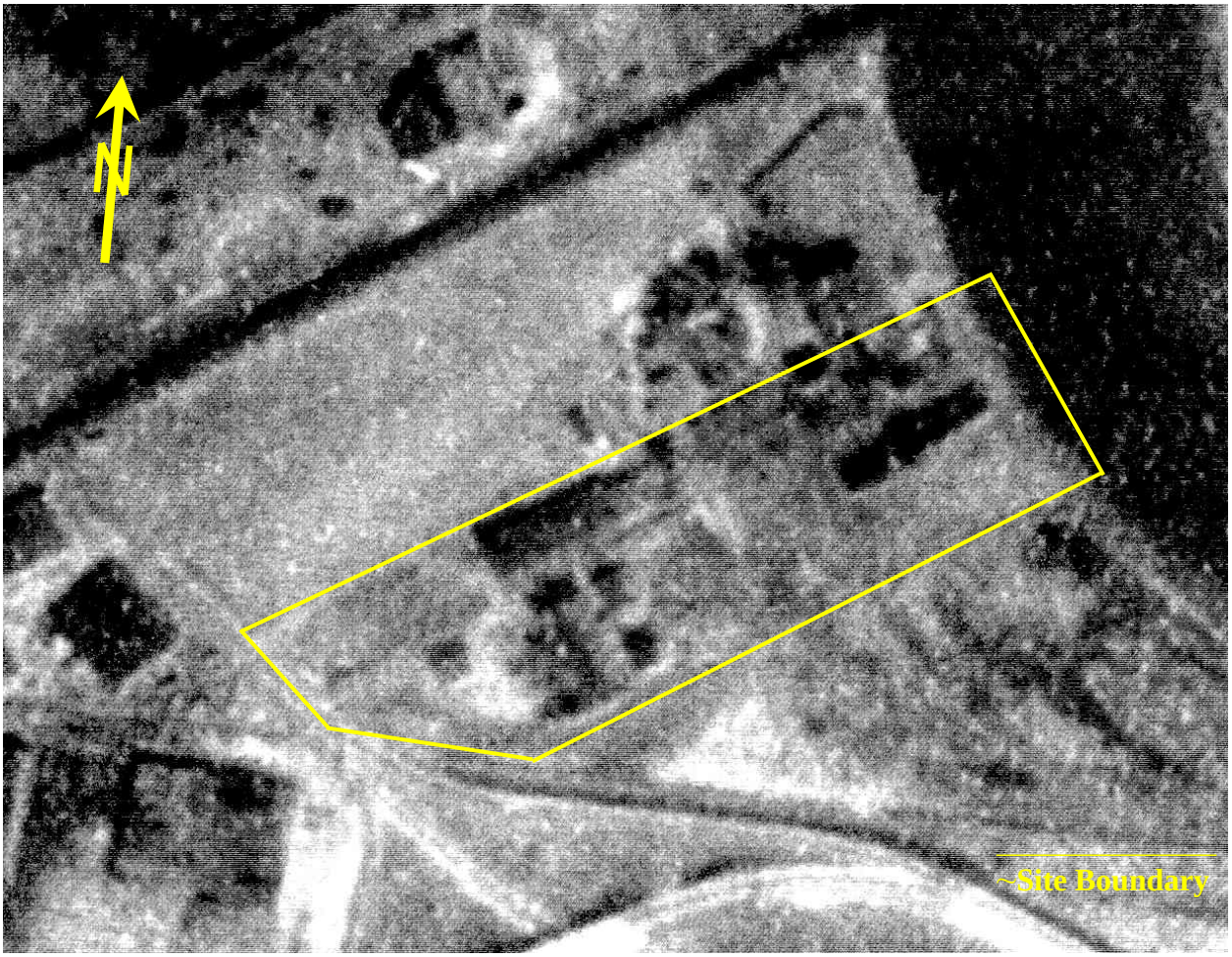
Approximate Scale



SCCC SITE AERIAL PHOTOGRAPH – 1976

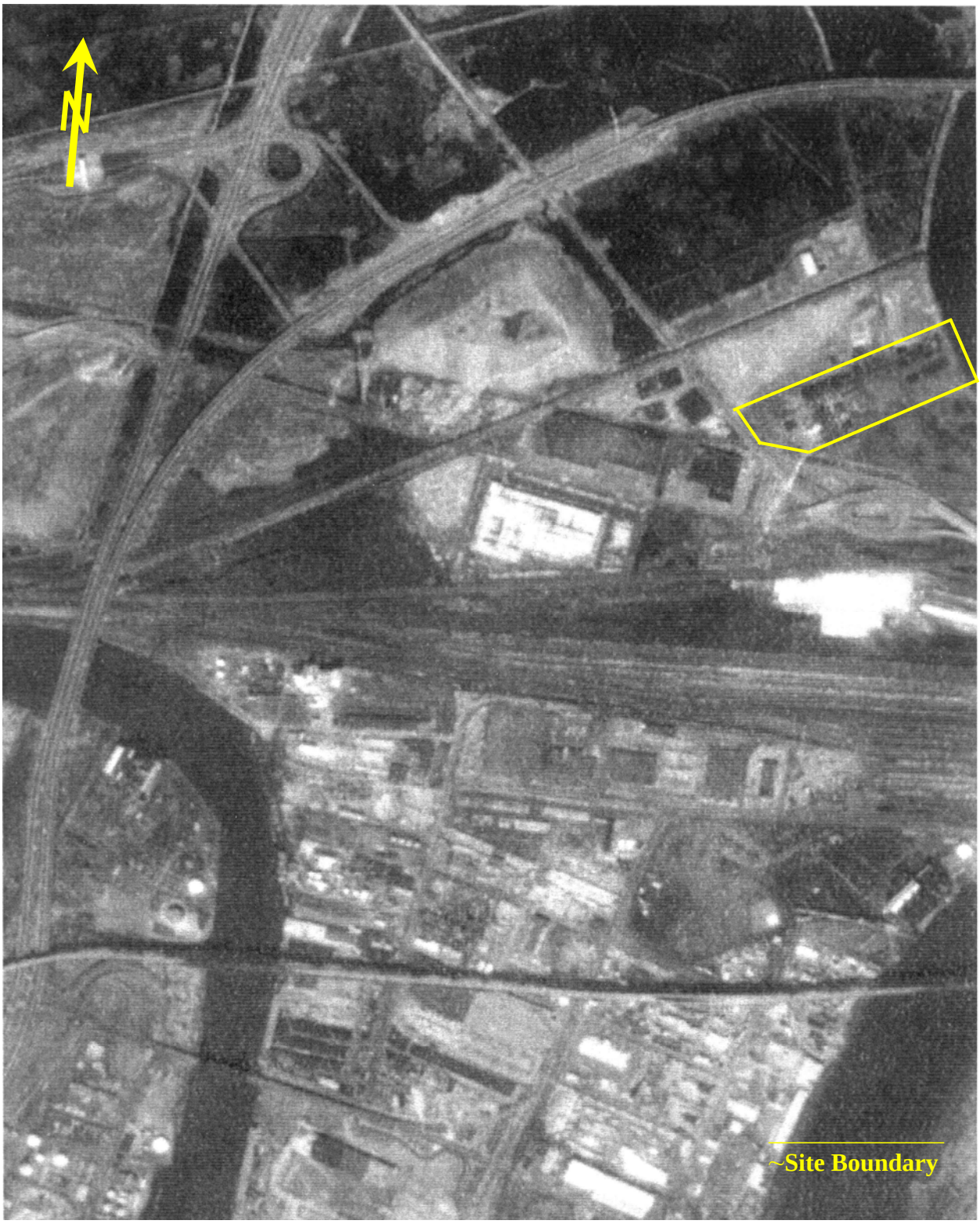
0 1200 2400

Approximate Scale



SCCC SITE AERIAL PHOTOGRAPH – 1976
(ENLARGED PORTION OF ORIGINAL)

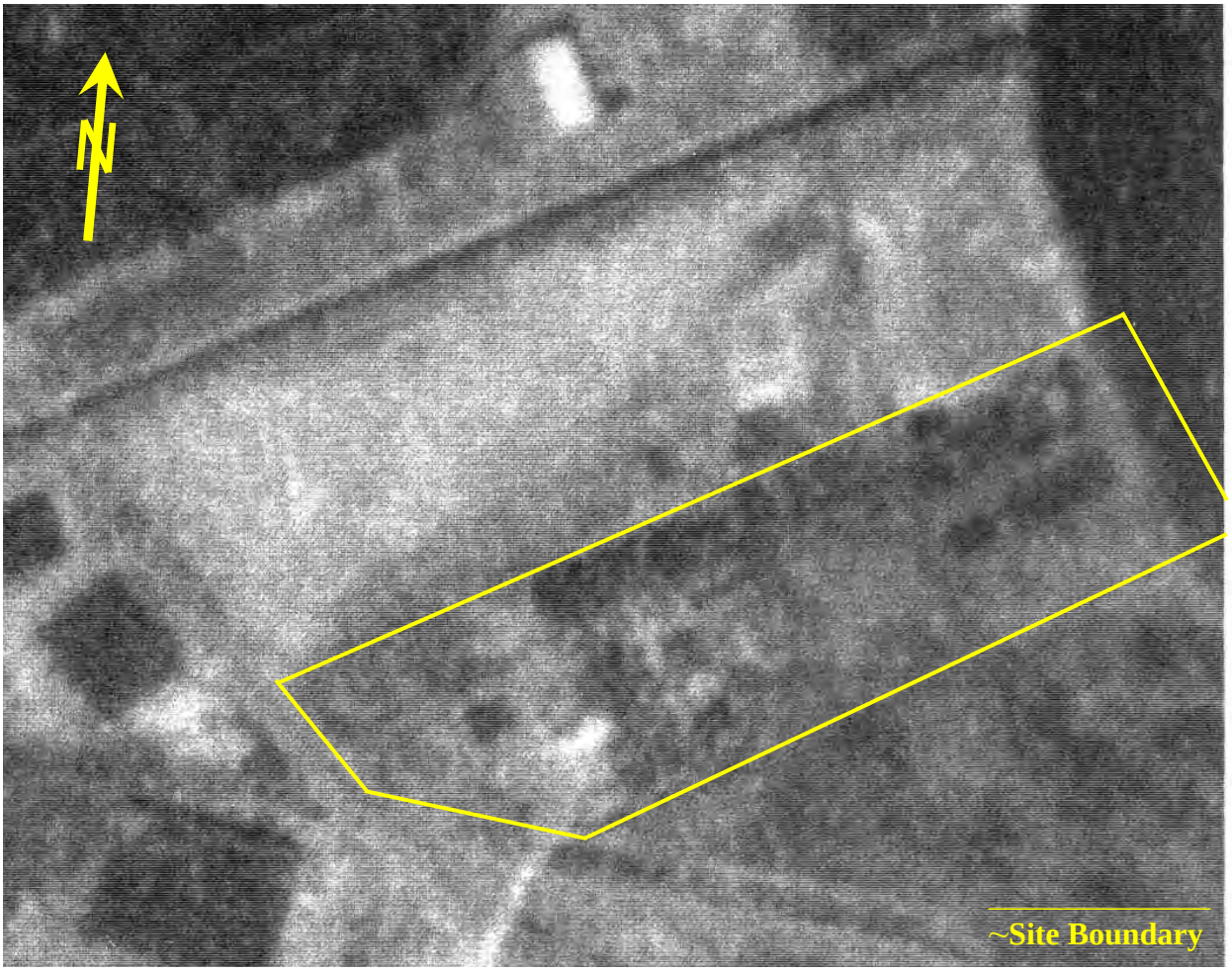
Approximate Scale



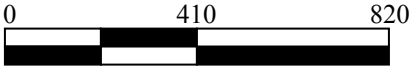
SCCC SITE AERIAL PHOTOGRAPH – 1985

0 1300 2600

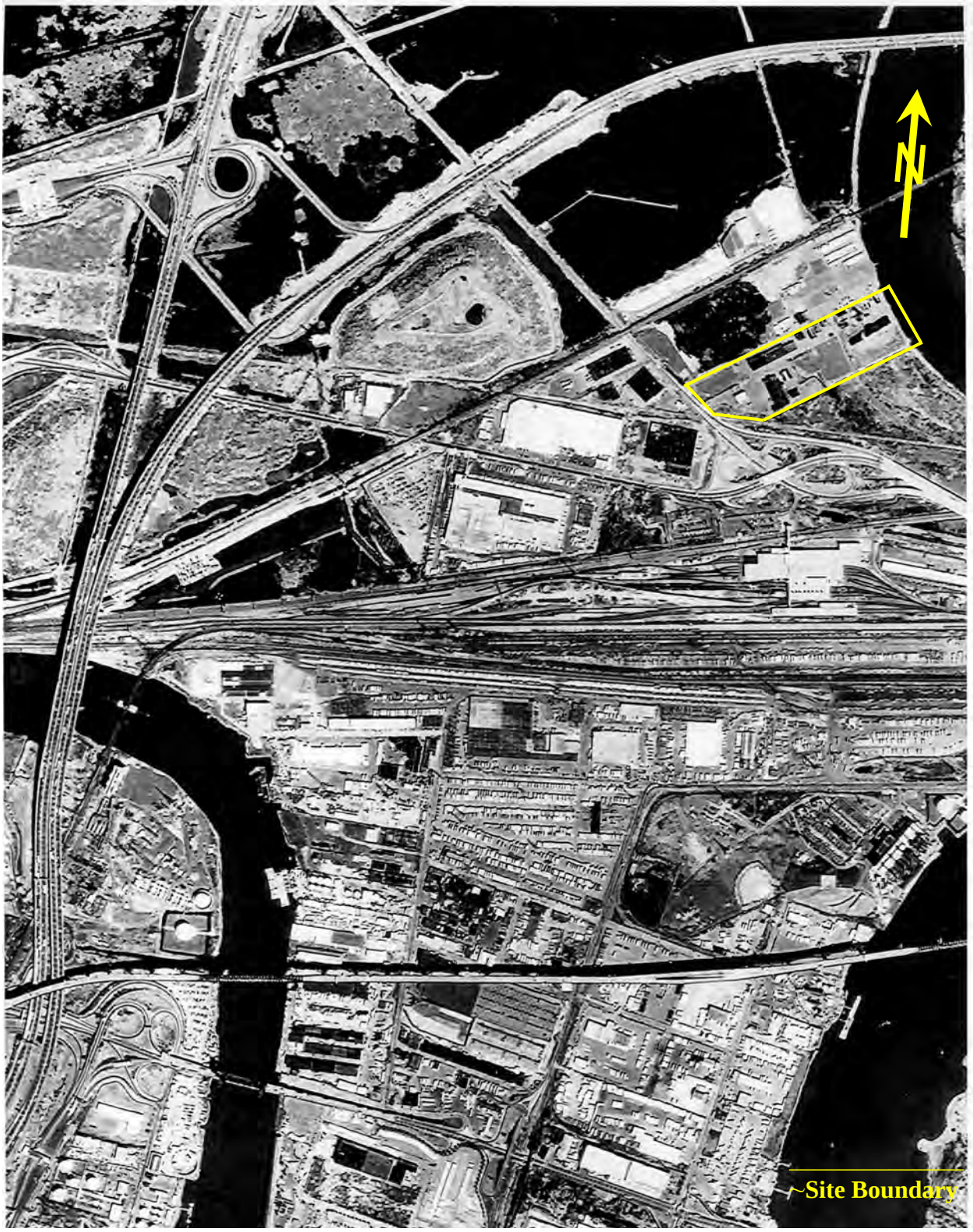
Approximate Scale



SCCC SITE AERIAL PHOTOGRAPH - 1985
(ENLARGED PORTION OF ORIGINAL)



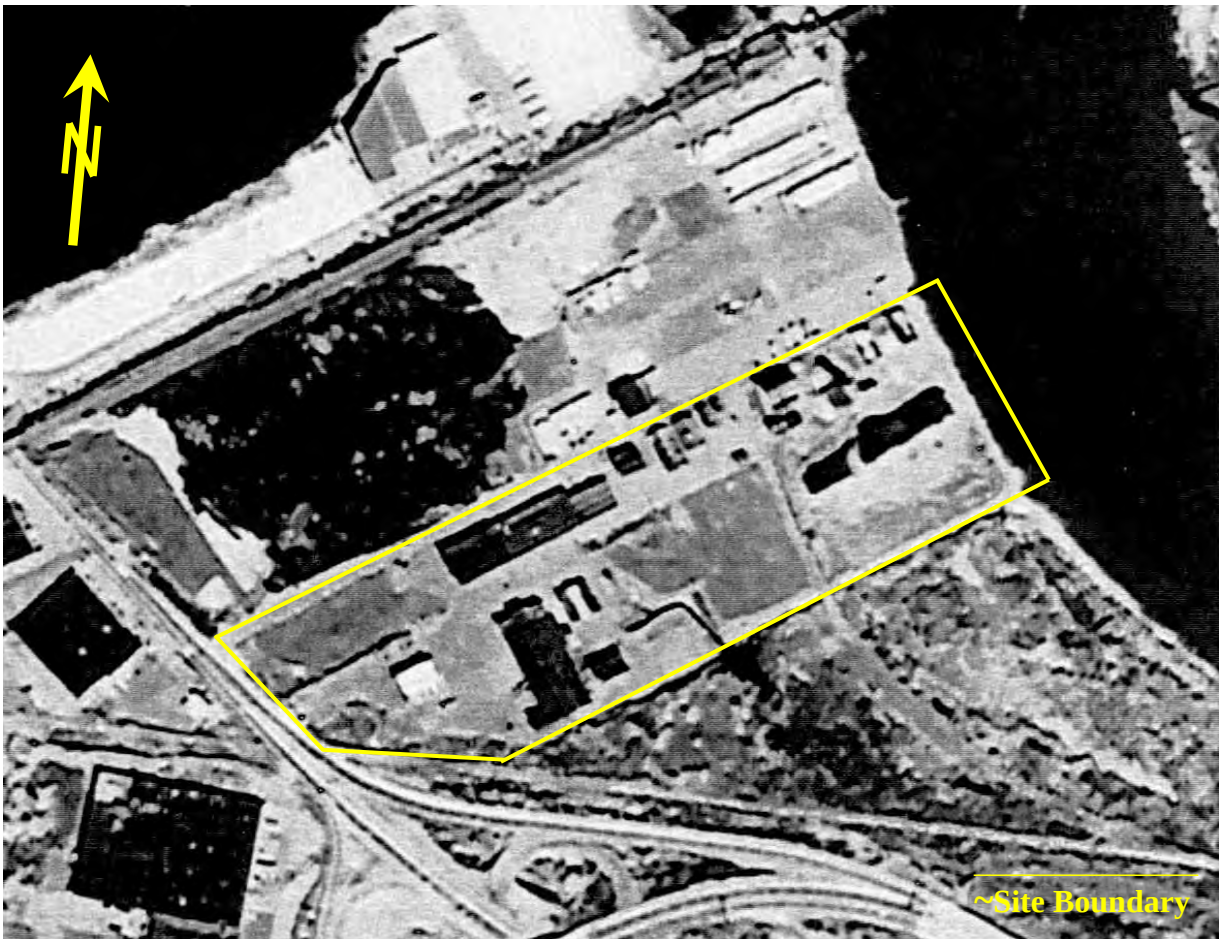
Approximate Scale



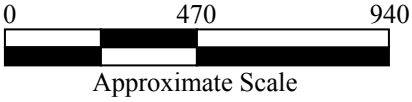
SCCC SITE AERIAL PHOTOGRAPH – 1995

0 1300 2600

Approximate Scale



SCCC SITE AERIAL PHOTOGRAPH – 1995
(ENLARGED PORTION OF ORIGINAL)

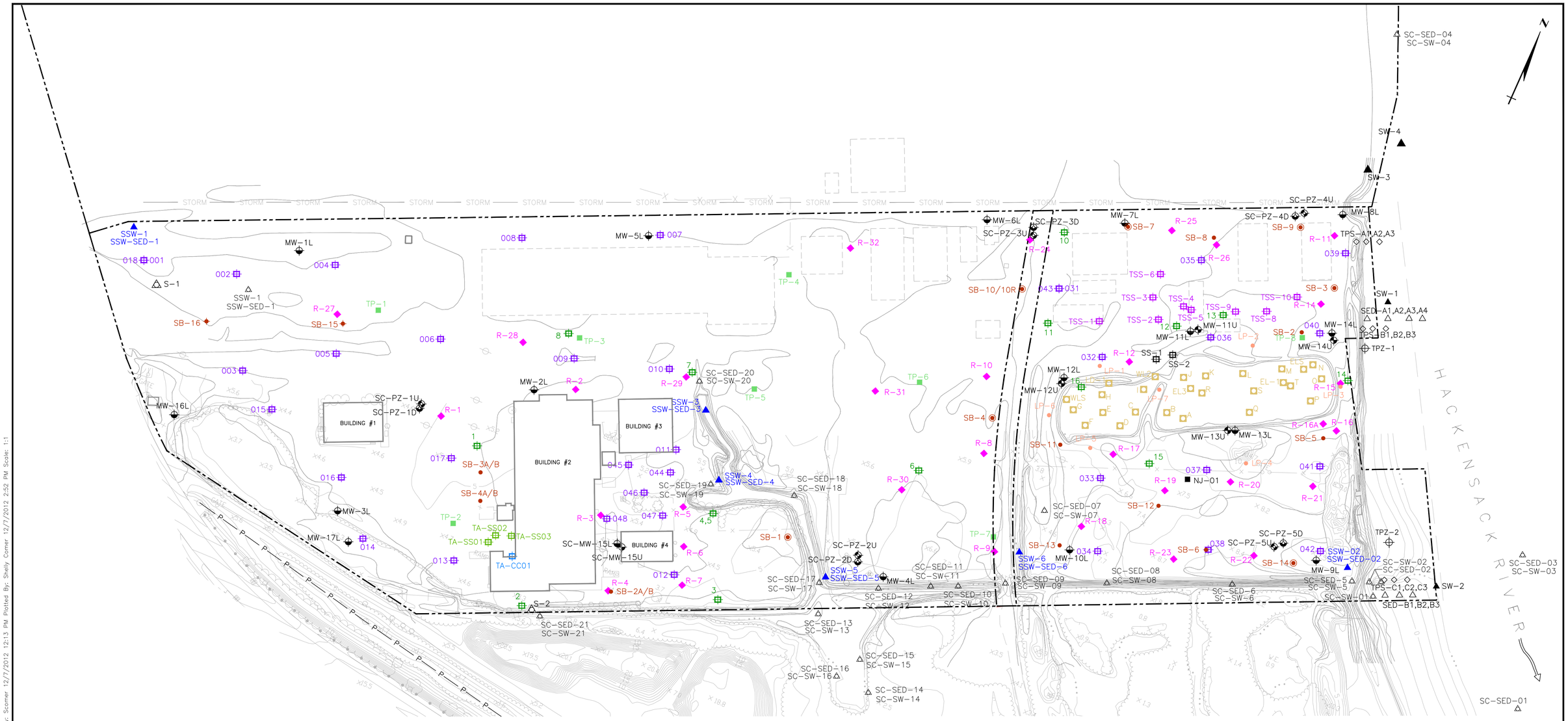


APPENDIX B
HISTORICAL CHEMICAL ANALYTICAL RESULTS

Figure B-1 Sample Location Map

Table B-1 COPR Surface Soil Samples (1991)
Table B-2 Tank Area Surface Soil Samples (1990)
Table B-3 TCDD Characterization Surface Soil Samples (1985)
Table B-4 Transformer Area Concrete Chip and Soil Samples (1998)
Table B-5 DNAPL Delineation Borings (1990 and 1999)
Table B-6 Soil Borings (1990 – 1999)
Table B-7 Test Pit Subsurface Soil Samples (1993)
Table B-8 Groundwater – Fill Unit Monitoring Wells (1991)
Table B-9 Groundwater – Fill Unit Piezometers (1983)
Table B-10 Groundwater – Sand Unit Monitoring Wells (1991 – 1999)
Table B-11 Groundwater – Sand Unit Piezometers (1983)
Table B-12 Surface Water Samples – South Ditch (1991 – 2002)
Table B-13 Surface Water Samples – Hackensack River (1996 - 2002)
Table B-14 Lagoon Solids Samples and Perimeter Soil Boring Samples (1985-1987)
Table B-15 Lagoon Solids Samples (1991)
Table B-16 Sediment Samples – South Ditch (1991 – 2002)
Table B-17 Sediment Samples (1991)
Table B-18 Sediment Samples – Hackensack River (1996 - 2002)

Note: All data qualifiers are as reported in original source documents and reports. No laboratory packages were available for these data, therefore, detection limits are not always available. Where an analyte was reported as “Not Detected”, “ND” or “U”, no value was put in these tables unless a value was presented in the document. Dashes are used when no analyses were conducted.



LEGEND

- SITE BOUNDARY
- FENCELINE
- EXISTING BUILDING/STRUCTURES
- FORMER BUILDING/STRUCTURES
- BUSH/TREELINE
- RIVER/CHANNEL/ LAGOON
- EXISTING GROUND SURFACE ELEVATION
- UTILITY POLE
- GUARD RAIL
- STORM DRAIN
- RAILROAD LINE

- 8 SURFACE SOIL SAMPLE LOCATION (WESTON–1985)
- SS–1 SURFACE SOIL SAMPLE LOCATION (WESTON–1987)
- TSS–1 TANK AREA SURFACE SOIL SAMPLE LOCATION (WESTON–1990)
- TA–SS01 TRANSFORMER AREA SURFACE SOIL SAMPLE LOCATION (KEY–1998)
- TA–CC01 TRANSFORMER AREA CONCRETE CHIP SAMPLE LOCATION (KEY–1998)
- 001 SURFACE SOIL SAMPLE LOCATION (FRENCH AND PARRELLO–1991)
- SB–1 SOIL BORING LOCATION (SAMPLE COLLECTED)(ERM–1996)
- SB–2 SOIL BORING LOCATION (VISUAL/FIELD SCREENING)(ERM–1996)
- SB–2A/B SOIL BORING LOCATION (WESTON–1992)
- SB–15 SOIL BORING LOCATION (KEY–1998)
- LP–5 LAGOON PERIMETER SOIL BORING LOCATION (WESTON–1985)
- R–25 ROST BORING LOCATION (KEY–1998)
- B, LD–1, WL2, ELS LAGOON SAMPLES (WESTON–1985, 1987, 1991)
- TP–1 TEST PIT SUBSURFACE SOIL SAMPLE LOCATION (WESTON–1993)

- SC–PZ–1U SHALLOW (FILL) ZONE PIEZOMETER LOCATION (WESTON–1983)
- SC–PZ–1D SAND ZONE PIEZOMETER LOCATION (WESTON–1983)
- TPZ–1 TEMPORARY PIEZOMETER LOCATION (WESTON–1992)
- MW–11U SHALLOW (FILL) ZONE MONITORING WELL LOCATION (WESTON–1990)
- MW–11L SAND ZONE MONITORING WELL LOCATION (WESTON–1990; KEY–1998)
- SW–1 SURFACE WATER SAMPLE LOCATION (ERM–1996)
- SSW–1 / SSW–SED–1 SURFACE WATER AND SEDIMENT SAMPLE LOCATION (WESTON–1991)
- SC–SED–04 / SC–SW–04 SURFACE WATER AND SEDIMENT SAMPLE LOCATION (USEPA–2002)
- S–1 SEDIMENT SAMPLE LOCATION (WESTON–1991)
- SED–A1,A2,A3,A4 SEDIMENT SAMPLE LOCATION (ERM–1996)
- TPS–A1,A2,A3 SEDIMENT SAMPLE LOCATION (ESI–2000)

0 150 300 FEET

COOPERATING PARTIES GROUP

DRWN: SCC	DATE: 11/13/12	KEY ENVIRONMENTAL INCORPORATED
CHKD: RJH	DATE: 11/13/12	
APPD: JSZ	DATE: 11/13/12	
SCALE: AS SHOWN		

SITE CHARACTERIZATION SUMMARY REPORT
STANDARD CHLORINE CHEMICAL CO., INC. SITE
KEARNY, HUDSON COUNTY NEW JERSEY

REV #	DATE	DESCRIPTION	APPD
3			
2			
1			

REFERENCE:

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

SAMPLE LOCATION MAP
(PRE–IRA DATA COLLECTION)

PROJECT NO: 2012–14

FIGURE B–1

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TABLE B-1
HISTORICAL ANALYTICAL RESULTS
COPR SURFACE SOIL SAMPLES (1991)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	001 08/01/91 0-0.5 Primary		002 08/01/91 0-0.5 Primary		003 08/01/91 0-0.5 Primary		004 08/01/91 0-0.5 Primary		005 08/01/91 0-0.5 Primary		006 08/01/91 0-0.5 Primary	
Metals													
Chromium	mg/Kg	722		17.5		1990		21.4		733		2000	
Chromium (Hexavalent)	mg/Kg	2.7	U	3	U	270		3	U	8.2		16	

Constituent of Interest	Units	007 08/01/91 0-0.5 Primary		008 08/01/91 0-0.5 Primary		009 08/01/91 0-0.5 Primary		010 08/01/91 0-0.5 Primary		011 08/01/91 0-0.5 Primary		012 08/01/91 0-0.5 Primary	
Metals													
Chromium	mg/Kg	2520		1490		2540		529		579		129	
Chromium (Hexavalent)	mg/Kg	13		15		110		8.6		30	U	3.6	U

Constituent of Interest	Units	013 08/01/91 0-0.5 Primary		014 08/01/91 0-0.5 Primary		015 08/01/91 0-0.5 Primary		016 08/01/91 0-0.5 Primary		017 08/01/91 0-0.5 Primary		018 08/01/91 0-0.5 Primary	
Metals													
Chromium	mg/Kg	1100		2240		520		769		511		224	
Chromium (Hexavalent)	mg/Kg	7.3		13		3.4		12		3.8		3	

Constituent of Interest	Units	031 08/01/91 0-0.5 Primary		032 08/01/91 0-0.5 Primary		033 08/01/91 0-0.5 Primary		034 08/01/91 0-0.5 Primary		035 08/01/91 0-0.5 Primary		036 08/01/91 0-0.5 Primary	
Metals													
Chromium	mg/Kg	9900		5330		9900		18000		11000		6460	
Chromium (Hexavalent)	mg/Kg	14	U	0.65		244		0.11	U	0.39		0.26	U

Constituent of Interest	Units	037 08/01/91 0-0.5 Primary		038 08/01/91 0-0.5 Primary		039 08/01/91 0-0.5 Primary		040 08/01/91 0-0.5 Primary		041 08/01/91 0-0.5 Primary		042 08/01/91 0-0.5 Primary	
Metals													
Chromium	mg/Kg	5120		18800		11500		7050		9390		11900	
Chromium (Hexavalent)	mg/Kg	54		0.23	U	195		0.24	U	0.15		0.12	U

Constituent of Interest	Units	043 08/01/91 0-0.5 Primary		044 08/01/91 0-0.5 Primary		045 08/01/91 0-0.5 Primary		046 08/01/91 0-0.5 Primary		047 08/01/91 0-0.5 Primary		048 08/01/91 0-0.5 Primary	
Metals													
Chromium	mg/Kg	8570		579		95.7		59.7		142		188	
Chromium (Hexavalent)	mg/Kg	0.15	U	0.26	U	0.13	U	0.14	U	0.14	U	0.28	U

TABLE B-2
HISTORICAL ANALYTICAL RESULTS
TANK AREA SURFACE SOIL SAMPLES (1990)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	TSS-1 12/01/90 0-0.5 Primary		TSS-2 12/01/90 0-0.5 Primary		TSS-3 12/01/90 0-0.5 Primary		TSS-4 12/01/90 0-0.5 Primary		TSS-5 12/01/90 0-0.5 Primary		TSS-6 12/01/90 0-0.5 Primary		TSS-7 12/01/90 0-0.5 Primary		TSS-8 12/01/90 0-0.5 Primary		TSS-9 12/01/90 0-0.5 Primary		TSS-9D 12/01/90 0-0.5 Duplicate		TSS-10 12/01/90 0-0.5 Primary	
Volatile Organics																							
1,2-Dichloroethene	mg/Kg	10	U	2.3	U	0.0026	U	1.2	U	0.0765		0.028	U	0.0205		0.0024	U	3	U	2.4	U	0.0025	U
Benzene	mg/Kg	27	U	6.4	U	0.0072	U	3.3	U	0.11	U	0.076	U	0.0075	U	0.0067	U	8.1	U	6.6	U	0.0069	U
Chlorobenzene	mg/Kg	99.6		8.7	U	0.0098	U	5.94		0.3		0.1	U	0.01	U	0.0091	U	33.5		68.4		0.0891	
Methylene chloride	mg/Kg	18	U	5.69		0.0046	U	2.1	U	0.114		0.0708		0.00657		0.0042	U	7.02		5.98		0.0044	U
Tetrachloroethene	mg/Kg	26	U	5.9	U	0.0067	U	3.1	U	2.31		0.071	U	0.0125		0.0062	U	7.6	U	6.1	U	0.00991	
Trichloroethene	mg/Kg	12	U	2.8	U	0.0031	U	1.4	U	0.866		0.033	U	0.0292		0.0029	U	3.5	U	2.8	U	0.003	U
Semivolatile Organics																							
1,2,4-Trichlorobenzene	mg/Kg	75000		3040		6.36		14100		68200		30.1		25.4		28.3		100000		200000		62.8	
1,2-Dichlorobenzene	mg/Kg	3850		4680		12.1		34.4		522		10.8		3.78		2.9	U	4340		6470		6.53	
1,3-Dichlorobenzene	mg/Kg	1210		738		14.5		9.59		394		9.5		6.4		2.9	U	1270		1550		66.2	
1,4-Dichlorobenzene	mg/Kg	2230		4840		54.6		15		52.2		15.7		7.4	U	6.6	U	876		1200		41.7	
Acenaphthene	mg/Kg	92		219		3.1	U	2.9	U	11.8		3.3	U	3.2	U	2.9	U	3.5	U	2.8	U	3.81	
Acenaphthylene	mg/Kg	24.1		5.1	U	5.7	U	5.3	U	9	U	6	U	5.9	U	5.3	U	6.5	U	5.2	U	5.5	U
Anthracene	mg/Kg	46.2		7.29		3.1	U	2.9	U	4.9	U	3.3	U	3.2	U	2.9	U	3.83		4.27		8.05	
Benzo(a)anthracene	mg/Kg	49	U	11	U	13	U	12	U	20	U	13	U	13	U	12	U	14	U	12	U	12	U
Benzo(a)pyrene	mg/Kg	16	U	3.84		34.1		6.58		6.4	U	4.91		4.95		3.8	U	4.6	U	3.7	U	3.9	U
Benzo(b)fluoranthene	mg/Kg	30	U	6.9	U	65.8		16.7		14		11.6		8.7		7.2	U	33.1		7.1	U	7.5	U
Benzo(ghi)perylene	mg/Kg	26	U	5.9	U	31.4		7.94		11	U	9.05		10.5		6.2	U	9		6.81		6.4	U
Bis(2-ethylhexyl)phthalate	mg/Kg	63	U	14	U	16	U	15	U	30		34.5		44.5		15	U	19	U	15	U	16	U
Chrysene	mg/Kg	41.9		7.42		14.6		12		12.5		6.67		4.83		3.8	U	21.5		17.2		10.9	
Dibenzo(a,h)anthracene	mg/Kg	16	U	3.6	U	7.28		3.8	U	6.4	U	4.3	U	4.2	U	3.8	U	4.6	U	3.7	U	3.9	U
Di-n-butyl phthalate	mg/Kg	63	U	14	U	16	U	15	U	26	U	17	U	17	U	15	U	19	U	15	U	16	U
Fluoranthene	mg/Kg	121		12.3		7.28		8.99		12.3		5.33		3.7	U	3.3	U	33.8		23.4		18.9	
Fluorene	mg/Kg	213		45.6		3.1	U	2.9	U	4.9	U	3.3	U	3.2	U	2.9	U	3.5	U	2.8	U	24.4	
Hexachlorobenzene	mg/Kg	45		137		3.1	U	30.4		359		56.9		21.1		2.9	U	34.8		23.8		3	U
Hexachlorobutadiene	mg/Kg	5.6	U	8.52		1.5	U	1.4	U	2.3	U	1.5	U	1.5	U	1.4	U	1.7	U	1.3	U	1.4	U
Indeno(1,2,3-cd)pyrene	mg/Kg	23	U	5.4	U	35.9		10.5		9.5	U	10.1		11.3		5.6	U	11.1		7.66		5.8	U
Naphthalene[1]	mg/Kg	2370000		167		191		5.02		4.1	U	51.8		7.31		16.7		3	U	2.4	U	448	
Phenanthrene	mg/Kg	428		35.3		8.9	U	10.9		19.3		9.3	U	9.1	U	8.1	U	59.7		59.9		179	
Pyrene	mg/Kg	70.5		8.02		6.69		5.8		7.69		4.31		3.2	U	2.9	U	17.1		11.9		21.5	

1. Naphthalene results as reported by Weston exceed pure product concentration.
   Likely as quantitated by the laboratory by instruments outside linear calibration range.

TABLE B-3
HISTORICAL ANALYTICAL RESULTS
TCDD CHARACTERIZATION SURFACE SOIL SAMPLES (1985)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	1 05/07/85 0-0.5 Primary		2 05/07/85 0-0.5 Primary		3 05/07/85 0-0.5 Primary		4 05/07/85 0-0.5 Primary		5 05/07/85 0-0.5 Duplicate	
Polychlorinated Dioxins and Furans											
2,3,7,8-TCDD	ug/Kg	0.15	U	0.6	U	0.037	U	0.62	U	0.62	U

Constituent of Interest	Units	6 05/07/85 0-0.5 Primary		7 05/07/85 0-0.5 Primary		8 05/07/85 0-0.5 Primary		10 05/07/85 0-0.5 Primary		11 05/07/85 0-0.5 Primary	
Polychlorinated Dioxins and Furans											
2,3,7,8-TCDD	ug/Kg	0.54	U	0.67	U	0.23	U	0.29	U	0.16	U

Constituent of Interest	Units	12_5-85 05/07/85 0-0.5 Primary		12_8-85 08/01/85 1.5-2 Primary		13_5-85 05/07/85 0-0.5 Primary		13_8-85 08/01/85 1.5-2 Primary		14 05/07/85 0-0.5 Primary	
Polychlorinated Dioxins and Furans											
2,3,7,8-TCDD	ug/Kg	0.52		0.23	U	0.7	U	0.13	U	0.62	U

Constituent of Interest	Units	15 05/07/85 0-0.5 Primary		16 05/07/85 0-0.5 Primary		NJ-01 08/01/85 0-0.5 Primary		SS-1 03/01/87 0-0.5 Primary		SS-2 03/01/87 0-0.5 Primary	
Polychlorinated Dioxins and Furans											
2,3,7,8-TCDD	ug/Kg	0.29	U	59.5		0.16	U	1.1	U	1.4	U

Note: Sample 9 was an equipment blank.

TABLE B-4
HISTORICAL ANALYTICAL RESULTS
TRANSFORMER AREA CONCRETE CHIP AND SURFACE SOIL SAMPLES (1998)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	TA-CC01 10/09/98 0-0.5 Primary		TA-SS01 10/09/98 0-0.5 Primary		TA-SS02 10/09/98 0-0.5 Primary		TA-SS03 10/09/98 0-0.5 Primary	
Polychlorinated Biphenyls (Aroclors)									
Aroclor 1254	mg/Kg	22	U	0.034	U	0.034		0.036	U
Aroclor 1260	mg/Kg	9300		0.15		0.29		0.022	
Total PCBs	mg/Kg	9300		0.15		0.29		0.022	

TABLE B-5
HISTORICAL ANALYTICAL RESULTS - DNAPL DELINEATION BORINGS (1990 and 1999)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SC-MW-2L 12/01/90 0-0.5 Primary		SC-MW-16L 01/13/99 0-2 Primary		SC-MW-16L 01/13/99 8-10 Primary		SC-MW-17L 01/13/99 0-2 Primary		SC-MW-17L 01/13/99 10-12 Primary	
Volatile Organics											
1,1,1-Trichloroethane	mg/Kg	0.4	U	--		--		--		--	
Benzene	mg/Kg	0.47	U	--		--		--		--	
Carbon tetrachloride	mg/Kg	0.3	U	--		--		--		--	
Chlorobenzene	mg/Kg	0.64	U	--		--		--		--	
Chloromethane	mg/Kg	1.1	U	--		--		--		--	
Tetrachloroethene	mg/Kg	0.44	U	--		--		--		--	
Toluene	mg/Kg	0.64	U	--		--		--		--	
Semivolatile Organics											
1,2,4-Trichlorobenzene	mg/Kg	0.46	U	0.12	U	0.14	U	0.13	U	0.22	U
1,2-Dichlorobenzene	mg/Kg	1.14		0.076		0.19		0.13	U	0.22	U
1,3-Dichlorobenzene	mg/Kg	0.833		0.075		0.54		0.052		0.094	
1,4-Dichlorobenzene	mg/Kg	1.29		0.12	U	2		0.13		0.2	
2,4-Dimethylphenol	mg/Kg	0.66	U	0.38	U	0.44	U	0.22		0.73	U
2-Chlorophenol	mg/Kg	--		0.38	U	0.44	U	0.43	U	0.73	U
2-Methylnaphthalene	mg/Kg	--		0.12	U	0.14	U	0.13	U	0.22	U
2-Methylphenol	mg/Kg	--		0.38	U	0.44	U	0.23		0.73	U
4-Methylphenol	mg/Kg	--		0.38	U	0.44	U	0.43	U	0.73	U
Acenaphthene	mg/Kg	1.1		0.12	U	0.14	U	0.13	U	0.52	
Acenaphthylene	mg/Kg	--		0.062		0.14	U	0.13	U	0.069	
Anthracene	mg/Kg	0.587		0.091		0.14	U	0.058		0.28	
Benzo(a)anthracene	mg/Kg	1.9	U	0.28		0.14	U	0.24		0.47	
Benzo(a)pyrene	mg/Kg	0.61	U	0.36		0.14	U	0.38		0.42	
Benzo(b)fluoranthene	mg/Kg	1.8		0.45		0.041		0.48		0.68	
Benzo(ghi)perylene	mg/Kg	1	U	0.048		0.14	U	0.21		0.16	
Benzo(k)fluoranthene	mg/Kg	--		0.19		0.14	U	0.17		0.095	
Bis(2-ethylhexyl)phthalate	mg/Kg	9.92		0.1		0.14	U	0.075		0.22	U
Butyl benzyl phthalate	mg/Kg	--		0.12	U	0.14	U	0.13	U	0.22	U
Carbazole	mg/Kg	--		0.039		0.14	U	0.13	U	0.1	
Chrysene	mg/Kg	0.629		0.28		0.14	U	0.26		0.48	
Dibenzo(a,h)anthracene	mg/Kg	--		0.12	U	0.14	U	0.13	U	0.22	U
Dibenzofuran	mg/Kg	--		0.12	U	0.14	U	0.13	U	0.067	
Diethyl phthalate	mg/Kg	--		0.12	U	0.14	U	0.13	U	0.22	U
Dimethyl phthalate	mg/Kg	--		0.12	U	0.14	U	0.13	U	0.22	U
Di-n-butyl phthalate	mg/Kg	3.06		0.12	U	0.14	U	0.13	U	0.22	U
Di-n-octyl phthalate	mg/Kg	--		0.12	U	0.14	U	0.13	U	0.22	U
Fluoranthene	mg/Kg	3.14		0.46		0.05		0.38		1.2	
Fluorene	mg/Kg	1.36		0.12	U	0.14	U	0.13	U	0.17	
Hexachlorobenzene	mg/Kg	--		0.12	U	0.14	U	0.13	U	0.22	U
Hexachlorobutadiene	mg/Kg	--		0.12	U	0.14	U	0.13	U	0.22	U
Indeno(1,2,3-cd)pyrene	mg/Kg	0.9	U	0.19		0.14	U	0.13	U	0.22	U
Naphthalene	mg/Kg	3.22		0.12	U	0.14	U	0.04		0.092	
N-Nitrosodiphenylamine	mg/Kg	--		0.12	U	0.14	U	0.15		0.22	U
Pentachlorophenol	mg/Kg	--		2	U	2.3	U	2.2	U	3.8	U
Phenanthrene	mg/Kg	3.66		0.21		0.14	U	0.17		0.82	
Phenol	mg/Kg	--		0.38	U	0.44	U	0.5		0.73	U
Pyrene	mg/Kg	1.89		0.41		0.044		0.34		1.2	
Metals											
Antimony	mg/Kg	13	U	--		--		--		--	
Arsenic	mg/Kg	2.1	U	--		--		--		--	
Beryllium	mg/Kg	0.21	U	--		--		--		--	
Cadmium	mg/Kg	0.93		--		--		--		--	
Chromium	mg/Kg	593		--		--		--		--	
Copper	mg/Kg	26		--		--		--		--	
Lead	mg/Kg	640		--		--		--		--	
Mercury	mg/Kg	0.17	U	--		--		--		--	
Nickel	mg/Kg	45		--		--		--		--	
Silver	mg/Kg	2.1	U	--		--		--		--	
Zinc	mg/Kg	55		--		--		--		--	
RCRA Characteristics and Indicators											
Cyanide (Reactivity)	mg/Kg	1.2		--		--					

TABLE B-6
HISTORICAL ANALYTICAL RESULTS - SOIL BORINGS (1990 - 1999)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SB-01 08/16/96 15.5-16 Primary	SB-03 08/05/96 14.5-15 Primary	SB-04 08/12/96 15-15.5 Primary	SB-07 08/16/96 15.5-16 Primary	SB-09 08/12/96 1.5-2 Primary	SB-09 08/12/96 15-15.5 Primary	SB-10R 08/16/96 16-16.5 Primary
Volatile Organics								
1,1,1-Trichloroethane	mg/Kg	--	--	--	--	--	--	--
1,2,3-Trichlorobenzene	mg/Kg	ND	1770	1000	ND	0.0326	345	2140
1,2,4-Trichlorobenzene	mg/Kg	0.002	6540	1870	ND	0.0203	1180	2290
1,2,4-Trimethylbenzene	mg/Kg	ND	ND	ND	65.5	ND	ND	60.8
1,2-Dichlorobenzene	mg/Kg	0.115	1080	1310	ND	0.00598	506	2320
1,2-Dichloroethene	mg/Kg	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	mg/Kg	ND	--	--	23.9	--	--	ND
1,3-Dichlorobenzene	mg/Kg	0.043	1700	433	ND	0.00329	210	557
1,4-Dichlorobenzene	mg/Kg	0.089	1630	677	ND	0.00559	257	1160
2-Butanone	mg/Kg	--	--	--	--	--		--
Acetone	mg/Kg	--	ND	ND	--	ND	ND	--
Benzene	mg/Kg	--	--	--	--	--	--	--
Carbon tetrachloride	mg/Kg	--	--	--	--	--	--	--
Chlorobenzene	mg/Kg	--	ND	ND	--	ND	42.6	--
Chloromethane	mg/Kg	--	--	--	--	--	--	--
n-Butylbenzene	mg/Kg	--	ND	57.8	--	ND	ND	--
Styrene	mg/Kg	--	--	--	--		--	--
Tetrachloroethene	mg/Kg	--	ND	ND	--	ND	56.9	--
Toluene	mg/Kg	--	--	--	--	--	--	--
Trichloroethene	mg/Kg	--	ND	ND	--	0.0056	ND	--
Xylene (total)	mg/Kg	ND	--	--	62.6	--	--	ND
Semivolatile Organics								
2,4-Dimethylphenol	mg/Kg	--	--	--	--	--	--	--
2-Chlorophenol	mg/Kg	--	--	--	--	--	--	--
2-Methylnaphthalene	mg/Kg	--	--	--	--	--	--	--
2-Methylphenol	mg/Kg	--	--	--	--	--	--	--
4-Methylphenol	mg/Kg	--	--	--	--	--	--	--
Acenaphthene	mg/Kg	--	--	--	--	--	--	--
Acenaphthylene	mg/Kg	--	--	--	--	--	--	--
Anthracene	mg/Kg	--	--	--	--	--	--	--
Benzo(a)anthracene	mg/Kg	--	--	--	--	--	--	--
Benzo(a)pyrene	mg/Kg	--	--	--	--	--	--	--
Benzo(b)fluoranthene	mg/Kg	--	--	--	--	--	--	--
Benzo(ghi)perylene	mg/Kg	--	--	--	--	--	--	--
Benzo(k)fluoranthene	mg/Kg	--	--	--	--	--	--	--
Bis(2-ethylhexyl)phthalate	mg/Kg	--	--	--	--	--	--	--
Butyl benzyl phthalate	mg/Kg	--	--	--	--	--	--	--
Carbazole	mg/Kg	--	--	--	--	--	--	--
Chrysene	mg/Kg	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	mg/Kg	--	--	--	--	--	--	--
Dibenzofuran	mg/Kg	--	--	--	--	--	--	--
Diethyl phthalate	mg/Kg	--	--	--	--	--	--	--
Dimethyl phthalate	mg/Kg	--	--	--	--	--	--	--
Di-n-butyl phthalate	mg/Kg	--	--	--	--	--	--	--
Di-n-octyl phthalate	mg/Kg	--	--	--	--	--	--	--
Fluoranthene	mg/Kg	--	--	--	--	--	--	--
Fluorene	mg/Kg	--	--	--	--	--	--	--
Hexachlorobenzene	mg/Kg	--	--	--	--	--	--	--
Hexachlorobutadiene	mg/Kg	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	mg/Kg	--	--	--	--	--	--	--
Naphthalene	mg/Kg	0.026	1010	2400	1820	0.191	181	5750
N-Nitrosodiphenylamine	mg/Kg	--	--	--	--	--	--	--
Pentachlorophenol	mg/Kg	--	--	--	--	--	--	--
Phenanthrene	mg/Kg	--	--	--	--	--	--	--
Phenol	mg/Kg	--	--	--	--	--	--	--
Pyrene	mg/Kg	--	--	--	--	--	--	--

TABLE B-6
HISTORICAL ANALYTICAL RESULTS - SOIL BORINGS (1990 - 1999)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SB-01 08/16/96 15.5-16 Primary		SB-03 08/05/96 14.5-15 Primary		SB-04 08/12/96 15-15.5 Primary		SB-07 08/16/96 15.5-16 Primary		SB-09 08/12/96 1.5-2 Primary		SB-09 08/12/96 15-15.5 Primary		SB-10R 08/16/96 16-16.5 Primary	
Polychlorinated Biphenyls															
Aroclor 1248	mg/Kg	--		--		--		--		--		--		--	
Aroclor 1254	mg/Kg	--		--		--		--		--		--		--	
Aroclor 1260	mg/Kg	--		--		--		--		--		--		--	
Metals															
Antimony	mg/Kg	--		--		--		--		--		--		--	
Arsenic	mg/Kg	--		--		--		--		--		--		--	
Beryllium	mg/Kg	--		--		--		--		--		--		--	
Cadmium	mg/Kg	--		--		--		--		--		--		--	
Chromium	mg/Kg	--		--		--		--		--		--		--	
Copper	mg/Kg	--		--		--		--		--		--		--	
Lead	mg/Kg	--		--		--		--		--		--		--	
Mercury	mg/Kg	--		--		--		--		--		--		--	
Nickel	mg/Kg	--		--		--		--		--		--		--	
Selenium	mg/Kg	--		--		--		--		--		--		--	
Silver	mg/Kg	--		--		--		--		--		--		--	
Thallium	mg/Kg	--		--		--		--		--		--		--	
Zinc	mg/Kg	--		--		--		--		--		--		--	
RCRA Characteristics															
Cyanide (Reactivity)	mg/Kg	--		--		--		--		--		--		--	

TABLE B-6
HISTORICAL ANALYTICAL RESULTS - SOIL BORINGS (1990 - 1999)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SB-14 08/07/96 18.5-19 Primary		SC-SB-15 01/14/99 0-2 Primary		SC-SB-15 01/14/99 8-10 Primary		SC-SB-15 01/14/99 16-18 Primary		SC-SB-16 01/14/99 0-2 Primary		SC-SB-16 01/14/99 10-12 Primary		SC-SB-16 01/14/99 16-18 Primary	
Volatile Organics															
1,1,1-Trichloroethane	mg/Kg	--		--		--		--		--		--		--	
1,2,3-Trichlorobenzene	mg/Kg	0.0919		--		--		--		--		--		--	
1,2,4-Trichlorobenzene	mg/Kg	0.35		0.12	U	0.4	U	0.15	U	0.47	U	0.14	U	0.12	U
1,2,4-Trimethylbenzene	mg/Kg	0.00215		--		--		--		--		--		--	
1,2-Dichlorobenzene	mg/Kg	0.0702		0.12	U	0.4	U	0.15	U	0.47	U	0.14	U	0.12	U
1,2-Dichloroethene	mg/Kg	--		--		--		--		--		--		--	
1,3,5-Trimethylbenzene	mg/Kg	--		--		--		--		--		--		--	
1,3-Dichlorobenzene	mg/Kg	0.0509		0.12	U	0.4	U	0.15	U	0.47	U	0.14	U	0.12	U
1,4-Dichlorobenzene	mg/Kg	0.0535		0.12	U	0.4	U	0.15	U	0.47	U	0.14	U	0.12	U
2-Butanone	mg/Kg	--		--		--		--		--		--		--	
Acetone	mg/Kg	0.135		--		--		--		--		--		--	
Benzene	mg/Kg	--		--		--		--		--		--		--	
Carbon tetrachloride	mg/Kg	--		--		--		--		--		--		--	
Chlorobenzene	mg/Kg	0.00349		--		--		--		--		--		--	
Chloromethane	mg/Kg	--		--		--		--		--		--		--	
n-Butylbenzene	mg/Kg	ND		--		--		--		--		--		--	
Styrene	mg/Kg	--		--		--		--		--		--		--	
Tetrachloroethene	mg/Kg	ND		--		--		--		--		--		--	
Toluene	mg/Kg			--		--		--		--		--		--	
Trichloroethene	mg/Kg	ND		--		--		--		--		--		--	
Xylene (total)	mg/Kg	--		--		--		--		--		--		--	
Semivolatile Organics															
2,4-Dimethylphenol	mg/Kg	--		0.41	U	1.3	U	0.5	U	0.36		0.46	U	0.41	U
2-Chlorophenol	mg/Kg	--		0.41	U	1.3	U	0.5	U	1.6	U	0.46	U	0.41	U
2-Methylnaphthalene	mg/Kg	--		0.11		0.4	U	0.15	U	0.47	U	0.14	U	0.12	U
2-Methylphenol	mg/Kg	--		0.41	U	1.3	U	0.5	U	1.6	U	0.46	U	0.41	U
4-Methylphenol	mg/Kg	--		0.41	U	1.3	U	0.5	U	0.32		0.46	U	0.41	U
Acenaphthene	mg/Kg	--		0.24		0.4	U	0.15	U	0.47	U	0.14	U	0.12	U
Acenaphthylene	mg/Kg	--		0.13		0.4	U	0.15	U	0.47	U	0.14	U	0.12	U
Anthracene	mg/Kg	--		0.57		0.4	U	0.15	U	0.47	U	0.14	U	0.12	U
Benzo(a)anthracene	mg/Kg	--		1.5		0.2		0.15	U	0.47	U	0.14	U	0.12	U
Benzo(a)pyrene	mg/Kg	--		0.12	U	0.21		0.15	U	0.47	U	0.14	U	0.12	U
Benzo(b)fluoranthene	mg/Kg	--		2.2		0.3		0.15	U	0.47	U	0.14	U	0.12	U
Benzo(ghi)perylene	mg/Kg	--		0.2		0.4	U	0.15	U	0.47	U	0.14	U	0.12	U
Benzo(k)fluoranthene	mg/Kg	--		2.2		0.4	U	0.15	U	0.47	U	0.14	U	0.12	U
Bis(2-ethylhexyl)phthalate	mg/Kg	--		120		0.29		0.071		0.47	U	0.14	U	0.12	U
Butyl benzyl phthalate	mg/Kg	--		0.12	U	0.4	U	0.15	U	0.47	U	0.14	U	0.12	U
Carbazole	mg/Kg	--		0.36		0.4	U	0.15	U	0.47	U	0.14	U	0.12	U
Chrysene	mg/Kg	--		6.4		0.2		0.15	U	0.47	U	0.14	U	0.12	U
Dibenzo(a,h)anthracene	mg/Kg	--		0.45		0.4	U	0.15	U	0.47	U	0.14	U	0.12	U
Dibenzofuran	mg/Kg	--		0.16		0.4	U	0.15	U	0.47	U	0.14	U	0.12	U
Diethyl phthalate	mg/Kg	--		0.12	U	0.4	U	0.15	U	0.47	U	0.14	U	0.12	U
Dimethyl phthalate	mg/Kg	--		0.12	U	0.4	U	0.15	U	0.62		0.14	U	0.12	U
Di-n-butyl phthalate	mg/Kg	--		0.12	U	0.4	U	0.15	U	0.47	U	0.14	U	0.12	U
Di-n-octyl phthalate	mg/Kg	--		190		0.4	U	0.15	U	0.47	U	0.14	U	0.12	U
Fluoranthene	mg/Kg	--		3.1		0.4		0.15	U	0.47	U	0.14	U	0.12	U
Fluorene	mg/Kg	--		0.24		0.4	U	0.15	U	0.47	U	0.14	U	0.12	U
Hexachlorobenzene	mg/Kg	--		0.12	U	0.4	U	0.15	U	0.47	U	0.14	U	0.12	U
Hexachlorobutadiene	mg/Kg	--		0.12	U	0.4	U	0.15	U	0.47	U	0.14	U	0.12	U
Indeno(1,2,3-cd)pyrene	mg/Kg	--		0.86		0.4	U	0.15	U	0.47	U	0.14	U	0.12	U
Naphthalene	mg/Kg	0.0572		0.21		0.4	U	0.07		0.24		0.14	U	0.12	U
N-Nitrosodiphenylamine	mg/Kg	--		0.12	U	0.4	U	0.15	U	0.47	U	0.14	U	0.12	U
Pentachlorophenol	mg/Kg	--		2.1	U	6.8	U	2.6	U	8.1	U	2.3	U	2.1	U
Phenanthrene	mg/Kg	--		2		0.23		0.15	U	0.47	U	0.14	U	0.12	U
Phenol	mg/Kg	--		0.41	U	1.3	U	0.5	U	1.6	U	0.46	U	0.41	U
Pyrene	mg/Kg	--		6.9		0.32		0.15	U	0.47	U	0.14	U	0.12	U

TABLE B-6
HISTORICAL ANALYTICAL RESULTS - SOIL BORINGS (1990 - 1999)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SB-14 08/07/96 18.5-19 Primary		SC-SB-15 01/14/99 0-2 Primary		SC-SB-15 01/14/99 8-10 Primary		SC-SB-15 01/14/99 16-18 Primary		SC-SB-16 01/14/99 0-2 Primary		SC-SB-16 01/14/99 10-12 Primary		SC-SB-16 01/14/99 16-18 Primary	
Polychlorinated Biphenyls															
Aroclor 1248	mg/Kg	--		--		--		--		--		--		--	
Aroclor 1254	mg/Kg	--		--		--		--		--		--		--	
Aroclor 1260	mg/Kg	--		--		--		--		--		--		--	
Metals															
Antimony	mg/Kg	--		--		--		--		--		--		--	
Arsenic	mg/Kg	--		--		--		--		--		--		--	
Beryllium	mg/Kg	--		--		--		--		--		--		--	
Cadmium	mg/Kg	--		--		--		--		--		--		--	
Chromium	mg/Kg	--		--		--		--		--		--		--	
Copper	mg/Kg	--		--		--		--		--		--		--	
Lead	mg/Kg	--		--		--		--		--		--		--	
Mercury	mg/Kg	--		--		--		--		--		--		--	
Nickel	mg/Kg	--		--		--		--		--		--		--	
Selenium	mg/Kg	--		--		--		--		--		--		--	
Silver	mg/Kg	--		--		--		--		--		--		--	
Thallium	mg/Kg	--		--		--		--		--		--		--	
Zinc	mg/Kg	--		--		--		--		--		--		--	
RCRA Characteristics															
Cyanide (Reactivity)	mg/Kg	--		--		--		--		--		--			

TABLE B-6
HISTORICAL ANALYTICAL RESULTS - SOIL BORINGS (1990 - 1999)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SB-2A 1992 Fill Primary		SB-2B 1992 Sand Primary		SB-3A 1992 Fill Primary		SB-3B 1992 Sand Primary		SB-4A 1992 Fill Primary		SB-4B 1992 Sand Primary	
Volatile Organics													
1,1,1-Trichloroethane	mg/Kg	0.013	U	71	U	0.36		1.5	U	0.5		0.46	
1,2,3-Trichlorobenzene	mg/Kg	--		--		--		--		--		--	
1,2,4-Trichlorobenzene	mg/Kg	6		71	U	34		260	U	12	U	12	U
1,2,4-Trimethylbenzene	mg/Kg	--		--		--		--		--		--	
1,2-Dichlorobenzene	mg/Kg	6.8		9200		400		260	U	98		12	U
1,2-Dichloroethene	mg/Kg	0.013	U	71	U	1.4	U	0.79	J	1.5	U	2	U
1,3,5-Trimethylbenzene	mg/Kg	--		--		--		--		--		--	
1,3-Dichlorobenzene	mg/Kg	3.5		1300		410		260	U	12		12	U
1,4-Dichlorobenzene	mg/Kg	3.4		1300		430		260	U	7		12	U
2-Butanone	mg/Kg	0.013	U	71	U	0.45		0.17	U	0.56		2	U
Acetone	mg/Kg	0.016		4.3		1.4	U	1.5	U	0.35		0.41	
Benzene	mg/Kg	0.013	U	48		0.32		0.11	J	0.15		0.6	
Carbon tetrachloride	mg/Kg	0.013	U	71	U	1.4	U	1.5	U	0.089		2	U
Chlorobenzene	mg/Kg	0.013	U	220		15		0.091	J	5.1		27	
Chloromethane	mg/Kg	0.013	U	71	U	1.4	U	0.35	J	0.18		2	J
n-Butylbenzene	mg/Kg	--		--		--		--		--		--	
Styrene	mg/Kg	0.013	U	71	U	1.4	U	1.5	U	0.12		2	U
Tetrachloroethene	mg/Kg	0.003		71	U	1.4	U	16		0.15		2	U
Toluene	mg/Kg	0.001		0.96		0.16		1.5	U	0.21		0.16	
Trichloroethene	mg/Kg	--		--		--		--		--		--	
Xylene (total)	mg/Kg	0.013	U	71	U	1.4	U	1.5	U	0.15		2	U
Semivolatile Organics													
2,4-Dimethylphenol	mg/Kg	13	U	120	U	12	U	260	U	12	U	12	U
2-Chlorophenol	mg/Kg	--		--		--		--		--		--	
2-Methylnaphthalene	mg/Kg	6.6		120	U	12	U	260	U	12	U	12	U
2-Methylphenol	mg/Kg	--		--		--		--		--		--	
4-Methylphenol	mg/Kg	--		--		--		--		--		--	
Acenaphthene	mg/Kg	25		120	U	12	U	260	U	12	U	12	U
Acenaphthylene	mg/Kg	--		--		--		--		--		--	
Anthracene	mg/Kg	90		120	U	12	U	260	U	12	U	12	U
Benzo(a)anthracene	mg/Kg	87		120	U	12	U	260	U	12	U	12	U
Benzo(a)pyrene	mg/Kg	82		120	U	12	U	260	U	12	U	12	U
Benzo(b)fluoranthene	mg/Kg	58		120	U	12	U	260	U	12	U	12	U
Benzo(ghi)perylene	mg/Kg	53		120	U	12	U	260	U	12	U	12	U
Benzo(k)fluoranthene	mg/Kg	--		--		--		--		--		--	
Bis(2-ethylhexyl)phthalate	mg/Kg	13	U	120	U	12	U	260	U	12	U	12	U
Butyl benzyl phthalate	mg/Kg	--		--		--		--		--		--	
Carbazole	mg/Kg	10		120	U	12	U	260	U	12	U	12	U
Chrysene	mg/Kg	79		120	U	12	U	260	U	12	U	12	U
Dibenzo(a,h)anthracene	mg/Kg	--		--		--		--		--		--	
Dibenzofuran	mg/Kg	15		120	U	12	U	260	U	12	U	12	U
Diethyl phthalate	mg/Kg	--		--		--		--		--		--	
Dimethyl phthalate	mg/Kg	--		--		--		--		--		--	
Di-n-butyl phthalate	mg/Kg	13	U	120	U	12	U	260	U	12	U	12	U
Di-n-octyl phthalate	mg/Kg	--		--		--		--		--		--	
Fluoranthene	mg/Kg	200		120	U	12	U	260	U	12	U	12	U
Fluorene	mg/Kg	33		120	U	12	U	260	U	12	U	12	U
Hexachlorobenzene	mg/Kg	--		--		--		--		--		--	
Hexachlorobutadiene	mg/Kg	--		--		--		--		--		--	
Indeno(1,2,3-cd)pyrene	mg/Kg	54		120	U	12	U	260	U	12	U	12	U
Naphthalene	mg/Kg	5.3		120	U	12	U	260	U	12	U	12	U
N-Nitrosodiphenylamine	mg/Kg	--		--		--		--		--		--	
Pentachlorophenol	mg/Kg	--		--		--		--		--		--	
Phenanthrene	mg/Kg	200		120	U	12	U	260	U	12	U	12	U
Phenol	mg/Kg	--		--		--		--		--		--	
Pyrene	mg/Kg	190		120	U	12	U	260	U	12	U	12	U

TABLE B-6
HISTORICAL ANALYTICAL RESULTS - SOIL BORINGS (1990 - 1999)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SB-2A 1992 Fill Primary		SB-2B 1992 Sand Primary		SB-3A 1992 Fill Primary		SB-3B 1992 Sand Primary		SB-4A 1992 Fill Primary		SB-4B 1992 Sand Primary	
Polychlorinated Biphenyls													
Aroclor 1248	mg/Kg	1.3	U	0.039	U	0.038	U	0.042	U	0.041	U	0.066	
Aroclor 1254	mg/Kg	1.3	U	0.039	U	0.038	U	0.042	U	0.041	U	0.041	U
Aroclor 1260	mg/Kg	1.3	U	0.039	U	0.038	U	0.3	J	0.061		0.041	U
Metals													
Antimony	mg/Kg	24	U	24	U	24	U	24	U	47.5		20.1	
Arsenic	mg/Kg	4.21		4	U	2.53		2.71		41.9		13.2	
Beryllium	mg/Kg	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
Cadmium	mg/Kg	0.8	U	0.8	U	0.8	U	0.8	U	4.16		1.9	
Chromium	mg/Kg	36.7		4.45		685		0.39		428		130	
Copper	mg/Kg	23.6		4	U	109		23.2		335		124	
Lead	mg/Kg	270		4.82		53		19.9		647		241	
Mercury	mg/Kg	0.55		0.32	U	0.32	U	0.32	U	0.32	U	0.32	U
Nickel	mg/Kg	9.4		8.1	U	14.6		9.73		51.8		25.5	
Selenium	mg/Kg	2	U	2	U	2	U	2	U	2	U	2	U
Silver	mg/Kg	4	U	4	U	4	U	4	U	4	U	4	U
Thallium	mg/Kg	4	U	4	U	4	U	4	U	4	U	4	U
Zinc	mg/Kg	99.3		14.2		90.6		42.3		3710		1520	
RCRA Characteristics													
Cyanide (Reactivity)	mg/Kg	0.6	U	0.6	U	2.1		0.6	U	0.6	U	0.6	U

TABLE B-7
HISTORICAL ANALYTICAL RESULTS
TEST PIT SUBSURFACE SOIL SAMPLES (1993)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	TP-1 05/01/93 4 Primary		TP-2 05/01/93 1.5 Primary		TP-3 05/01/93 2 Primary		TP-4 05/01/93 2 Primary		TP-5 05/01/93 6 Primary		TP-6 05/01/93 2.5 Primary		TP-7 05/01/93 2 Primary		TP-8 05/01/93 3 Primary	
Metals																	
Chromium	mg/Kg	31900		1740		26300		34900		33100		30400		32100		32600	

TABLE B-8
HISTORICAL ANALYTICAL RESULTS
GROUNDWATER - FILL UNIT MONITORING WELLS (1991)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SC-MW-11U 01/12/91 Primary		SC-MW-12U 01/12/91 Primary		SC-MW-13U 01/12/91 Primary		SC-MW-14U 01/12/91 Primary		SC-MW-15U 01/12/91 Primary	
Volatile Organics											
1,2-Dichloroethene	ug/L	174		100	U	1.6	U	1.6	U	1.6	U
Benzene	ug/L	353		100	U	4.4	U	4.59		4.4	U
Chlorobenzene	ug/L	796		100	U	6	U	6	U	6	U
Chloromethane	ug/L	200	U	200	U	10	U	10	U	10	U
Dichlorodifluoromethane	ug/L	200	U	200	U	10	U	10	U	10	U
Ethylbenzene	ug/L	140	U	100	U	7.2	U	51.1		7.2	U
Methylene chloride	ug/L	56	U	101		2.8	U	2.8	U	2.8	U
Tetrachloroethylene	ug/L	96.7		100	U	4.1	U	4.1	U	4.1	U
Toluene	ug/L	120	U	100	U	6	U	20.7		6	U
Trichloroethylene	ug/L	96		100	U	1.9	U	1.9	U	1.9	U
Vinyl chloride	ug/L	200	U	200	U	10	U	10	U	10	U
Semivolatile Organics											
1,2,4-Trichlorobenzene	ug/L	5400		128		166		41.8		2.1	U
1,2-Dichlorobenzene	ug/L	5250		145		74.2		5.2		140	
1,3-Dichlorobenzene	ug/L	892		65.9		25.4		4.1		78.6	
1,4-Dichlorobenzene	ug/L	1910		141		51.7		9.56		109	
2,4,6-Trichlorophenol	ug/L	2.9	U	15.5		3	U	3	U	3	U
2,4-Dichlorophenol	ug/L	2.9	U	3	U	3	U	3	U	3	U
2,4-Dimethylphenol	ug/L	1830		33.7		808		53.3		3	U
2-Chlorophenol	ug/L	3.6	U	3.7	U	3.7	U	3.7	U	3.6	U
Acenaphthene	ug/L	22.4		117		25.5		238		2.1	U
Acenaphthylene	ug/L	3.8	U	8.7		3.9	U	6.88		3.8	U
Anthracene	ug/L	9.66		3.63		2.1	U	4.2		2.1	U
Bis(2-chloromethyl)ether	ug/L	200	U	200	U	10	U	--		10	U
Bis(2-ethylhexyl)phthalate	ug/L	11	U	11	U	11	U	11	U	588	
Fluoranthene	ug/L	2.4	U	4.26		2.5	U	2.4	U	2.4	U
Fluorene	ug/L	19.3		39.7		2.9		57.8		2.1	U
Hexachlorobenzene	ug/L	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
Naphthalene	ug/L	9660		426		5020		6540		1.8	U
Phenanthrene	ug/L	15.9		41.1		6.1	U	27		5.9	U
Phenol	ug/L	445		6.62		19300		1.7	U	1.6	U
Pyrene	ug/L	2.1	U	2.1		2.1	U	2.1	U	2.1	U
Metals											
Antimony	ug/L	390		60	U	62		180		110	
Arsenic	ug/L	130		10	U	10	U	35		24	
Beryllium	ug/L	2.6		1	U	1	U	1.9		3.1	
Cadmium	ug/L	14		5.5		2	U	7.6		8.1	
Chromium (Total)	ug/L	6640		2300		7150		20300		4200	
Chromium (Hexavalent)	ug/L	50	U	81		7380		3320		88	
Copper	ug/L	900		77		22		230		260	
Cyanide	ug/L	197		25	U	25		31		25	U
Lead	ug/L	12500		600		75	U	2600		44900	
Mercury	ug/L	142		1.4		0.33		34.7		0.87	
Nickel	ug/L	480		220		29		360		130	
Selenium	ug/L	25	U	5	U	5	U	25	U	25	U
Silver	ug/L	10	U	10	U	10	U	10	U	10	U
Thallium	ug/L	10	U	10	U	10	U	10	U	10	U
Zinc	ug/L	550		220		28		640		620	

TABLE B-9
HISTORICAL ANALYTICAL RESULTS
GROUNDWATER - FILL UNIT PIEZOMETERS (1983)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SC-PZ-1U 01/01/83 Primary		SC-PZ-2U 01/01/83 Primary		SC-PZ-3U 01/01/83 Primary		SC-PZ-4U 01/01/83 Primary		SC-PZ-5U 01/01/83 Primary	
Volatile Organics											
1,1,2-Trichloroethane	ug/L	10	U	10	U	10	U	10	U	5	U
1,1-Dichloroethene	ug/L	10	U	10	U	10	U	10	U	5	U
1,2-Dichloroethene	ug/L	10	U	10	U	10	U	10	U	5	U
Benzene	ug/L	10	U	10	U	65		10	U	190	
Chlorobenzene	ug/L	10	U	1500		55		93000		450	
Ethylbenzene	ug/L	10	U	10	U	10	U	10	U	5	U
Tetrachloroethylene	ug/L	10	U	10	U	25		10	U	5	U
Toluene	ug/L	10	U	10	U	10	U	10	U	5	U
Trichloroethylene	ug/L	10	U	10	U	35		10	U	5	U
Xylene (total)	ug/L	10	U	10	U	55		10	U	5	U
Semivolatile Organics											
1,2,4-Trichlorobenzene	ug/L	10	U	10	U	10	U	10	U	10	
1,2-Dichlorobenzene	ug/L	10	U	10	U	10	U	10	U	10	U
1,2-Diphenylhydrazine	ug/L	10	U	10	U	10	U	10	U	10	U
1,3-Dichlorobenzene	ug/L	10	U	10	U	10	U	10	U	10	U
1,4-Dichlorobenzene	ug/L	10	U	10	U	10	U	10		10	U
Acenaphthene	ug/L	10	U	10	U	540		10		10	U
Anthracene	ug/L	10	U	10	U	630		10		10	U
Bis(2-ethylhexyl)phthalate	ug/L	10	U	10	U	10	U	22		12	
Dimethyl phthalate	ug/L	10	U	10	U	10		10	U	10	U
Di-n-butyl phthalate	ug/L	10	U	10	U	10	U	10	U	10	U
Fluoranthene	ug/L	10	U	10	U	86		10	U	10	U
Fluorene	ug/L	10	U	10	U	570		10	U	10	U
Naphthalene	ug/L	10	U	10	U	10	U	510		10	U
Phenanthrene	ug/L	10	U	10	U	170		10	U	10	U
Metals											
Chromium (Total)	ug/L	0.05	U	7.7		0.29		101.7		--	
Chromium (Hexavalent)	ug/L	0.1	U	0.1	U	0.1	U	97		--	
Indicator Parameters											
pH	SU	8.4		9.3		8.8		11.4		11.4	
Specific Conductance	umhos	1050		5000		2450		5000		5000	

TABLE B-10
HISTORICAL ANALYTICAL RESULTS
GROUNDWATER - SAND UNIT MONITORING WELLS (1991 - 1999)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SC-MW-10L 01/12/91 Primary		SC-MW-10L 09/30/92 Primary		SC-MW-11L 01/12/91 Primary		SC-MW-12L 01/12/91 Primary		SC-MW-12L 09/30/92 Primary		SC-MW-13L 01/12/91 Primary		SC-MW-14L 01/12/91 Primary		SC-MW-14L 09/30/92 Primary		SC-MW-15L 01/12/91 Primary		SC-MW-15L 09/30/92 Primary		SC-MW-16L 02/02/99 Primary		SC-MW-17L 02/02/99 Primary		SC-MW-1L 01/12/91 Primary		SC-MW-2L 01/12/91 Primary	
Volatile Organics																													
1,2-Dichloroethene	ug/L	16	U	25	U	32	U	40	U	100	U	32	U	1.6	U	20	U	160	U	250	U	--		--		1.6	U	40	U
Acetone	ug/L	--		310		--		--		100	U	--		--		20	U	--		250	U	--		--		--		--	
Benzene	ug/L	108		160		467		337		260		118		131		140		3010		1700		--		--		4.4	U	190	
Carbon disulfide	ug/L	--		25	U	--		--		100	U	--		--		25		--		250	U	--		--		--		--	
Chlorobenzene	ug/L	111		140		1110		743		400		200		134		48		1830		1200		--		--		6	U	882	
Chloromethane	ug/L	100	U	--		200	U	250	U	--		267		10	U	--		1000	U	--		--		--		10	U	250	U
Dichlorodifluoromethane	ug/L	100	U	--		200	U	250	U	--		200	U	10	U	--		1000	U	--		--		--		10	U	250	U
Ethylbenzene	ug/L	72	U	73		140	U	240		100		140	U	21.1		55		720	U	250	U	--		--		7.2	U	180	U
Methylene chloride	ug/L	38.9	B	28		73.3		70	U	46	J	56	U	2.8	U	27	B	289	U	190	J	--		--		2.8	U	81.4	
Styrene	ug/L	--		25	U	--		--		92	J	--		--		--		--		--		--		--		--		--	
Tetrachloroethylene	ug/L	41	U	25	U	82	U	100	U	16	J	82	U	74.1		24		410	U	250	U	--		--		4.1	U	100	U
Toluene	ug/L	108		150		120	U	1290		770		120	U	115		200		600	U	250	U	--		--		6	U	150	U
Trichloroethylene	ug/L	19	U	25	U	173		108		52	J	79		121		71		190	U	250	U	--		--		1.9	U	48	U
Vinyl chloride	ug/L	100	U	25	U	200	U	250	U	100	U	200	U	10	U	20	U	1000	U	250	U	--		--		10	U	250	U
Xylene (total)	ug/L	--		400		--		--		600		--		--		200		--		250	U	--		--		--		--	
Semivolatile Organics																													
1,2,4-Trichlorobenzene	ug/L	21	U	620	U	6070		1520		5600		3520		14000		26000		81.2		190	J	50	U	17		2.1	U	89.6	
1,2-Dichlorobenzene	ug/L	156		640		6650		5290		12000		771		2780		2100		20600		33000		330		12000		2.58		19600	
1,3-Dichlorobenzene	ug/L	60.4		620	U	1570		1130		2800		239		2650		1900		15200		21000		460		7400		2.1	U	18500	
1,4-Dichlorobenzene	ug/L	110		380	J	2310		2560		5400		497		4610		2700		19500		33000		540		11000		4.8	U	21900	
2,4,5-Trichlorophenol	ug/L	--		--		--		--		--		--		--		--		--		--		250	U	50	U	--		--	
2,4,6-Trichlorophenol	ug/L	30	U	620	U	59	U	150	U	2600	U	32	U	150	U	560	U	3	U	560	U	50	U	10	U	2.9	U	3.3	U
2,4-Dichlorophenol	ug/L	30	U	620	U	59	U	150	U	2600	U	32	U	150	U	560	U	321		350	J	50	U	6	J	2.9	U	99	
2,4-Dimethylphenol	ug/L	25900		31000	J	1180		20900		38000		22800		17500		18000		3	U	560	U	50	U	10	U	2.9	U	3.82	
2,4-Dinitrophenol	ug/L	--		--		--		--		--		--		--		--		--		--		250	U	50	U	--		--	
2,4-Dinitrotoluene	ug/L	--		--		--		--		--		--		--		--		--		--		50	U	10	U	--		--	
2,6-Dinitrotoluene	ug/L	--		--		--		--		--		--		--		--		--		--		50	U	10	U	--		--	
2-Chloronaphthalene	ug/L	--		--		--		--		--		--		--		--		--		--		50	U	10	U	--		--	
2-Chlorophenol	ug/L	36	U	620	U	73	U	180	U	2600	U	39	U	190	U	560	U	63.3		58	J	50	U	25		3.6	U	4	U
2-Methylnaphthalene	ug/L	--		960		--		--		1500	J	--		--		770		--		560	U	50	U	10	U	--		--	
2-Methylphenol	ug/L	--		58000		--		--		38000		--		--		14000		--		560	U	50	U	10	U	--		--	
2-Nitroaniline	ug/L	--		--		--		--		--		--		--		--		--		--		250	U	50	U	--		--	
2-Nitrophenol	ug/L	--		--		--		--		--		--		--		--		--		--		50	U	10	U	--		--	
3,3-Dichlorobenzidine	ug/L	--		--		--		--		--		--		--		--		--		--		50	U	10	U	--		--	
3-Nitroaniline	ug/L	--		--		--		--		--		--		--		--		--		--		250	U	50	U	--		--	
4,6-Dinitro-2-methylphenol	ug/L	--		--		--		--		--		--		--		--		--		--		250	U	50	U	--		--	
4-Bromophenylphenyl ether	ug/L	--		--		--		--		--		--		--		--		--		--		50	U	10	U	--		--	
4-Chloroaniline	ug/L	--		--		--		--		--		--		--		--		--		--		50	U	10	U	--		--	
4-Chlorophenyl phenyl ether	ug/L	--		--		--		--		--		--		--		--		--		--		50	U	10	U	--		--	
4-Chloro-3-methylphenol	ug/L	--		--		--		--		--		--		--		--		--		--		50	U	10	U	--		--	
4-Methylphenol	ug/L	--		200000		--		--		140000		--		--		48000		--		560	U	50	U	10	U	--		--	
4-Nitroaniline	ug/L	--		--		--		--		--		--		--		--		--		--		250	U	50	U	--		--	
4-Nitrophenol	ug/L	--		--		--		--		--		--		--		--		--		--		250	U	50	U	--		--	
Acenaphthene	ug/L	33.7		620	U	42	U	104		2600	U	308		110	U	180		2.1	U	560	U	50	U	10	U	2.1	U	6.43	
Acenaphthylene	ug/L	38	U	620	U	77	U	190	U	2600	U	41	U	200	U	560	U	3.9	U	560	U	50	U	10	U	3.8	U	4.2	U
Anthracene	ug/L	21	U	620	U	42	U	100	U	2600	U	22	U	110	U	560	U	2.1	U	560	U	50	U	10	U	2.1	U	2.3	U
Benzo(a)anthracene	ug/L	--		--		--		--		--		--		--		--		--		--		50	U	10	U	--		--	
Benzo(a)pyrene	ug/L	--		--		--		--		--		--		--		--		--		--		50	U	10	U	--		--	
Benzo(b)fluoranthene	ug/L	--		--		--		--		--		--		--		--		--		--		50	U	10	U	--		--	
Benzo(ghi)perylene	ug/L	--		--		--		--		--		--		--		--		--		--		50	U	10	U	--		--	
Benzo(k)fluoranthene	ug/L	--		--		--		--		--		--		--		--		--		--		50	U	10	U	--		--	

TABLE B-10
HISTORICAL ANALYTICAL RESULTS
GROUNDWATER - SAND UNIT MONITORING WELLS (1991 - 1999)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SC-MW-10L 01/12/91 Primary		SC-MW-10L 09/30/92 Primary		SC-MW-11L 01/12/91 Primary		SC-MW-12L 01/12/91 Primary		SC-MW-12L 09/30/92 Primary		SC-MW-13L 01/12/91 Primary		SC-MW-14L 01/12/91 Primary		SC-MW-14L 09/30/92 Primary		SC-MW-15L 01/12/91 Primary		SC-MW-15L 09/30/92 Primary		SC-MW-16L 02/02/99 Primary		SC-MW-17L 02/02/99 Primary		SC-MW-1L 01/12/91 Primary		SC-MW-2L 01/12/91 Primary	
Semivolatile Organics (Cont'd)																													
Bis(2-chloroethoxy)methane	ug/L	--		--		--		--		--		--		--		--		--		--		50	U	10	U	--		--	
Bis(2-chloroethyl)ether	ug/L	--		--		--		--		--		--		--		--		--		--		50	U	10	U	--		--	
Bis(2-chloromethyl)ether	ug/L	100	U	--		200	U	250	U	--		200	U	10	U	--		1000	U	--		50	U	10	U	10	U	250	U
Bis(2-ethylhexyl)phthalate	ug/L	110	U	620	U	220	U	540	U	2600	U	120	U	560	U	560	U	11	U	560	U	50	U	10	U	11	U	12	U
Butyl benzyl phthalate	ug/L	--		--		--		--		--		--		--		--				--		50	U	10	U	--		--	
Carbazole	ug/L	--		--		--		--		--		--		--		--				--		50	U	10	U	--		--	
Chrysene	ug/L	--		--		--		--		--		--		--		--				--		50	U	10	U	--		--	
Dibenzo(a,h)anthracene	ug/L	--		--		--		--		--		--		--		--				--		50	U	10	U	--		--	
Dibenzofuran	ug/L	--		620	U	--		--		2600	U	--		--		69	J			560	U	50	U	10	U	--		--	
Diethyl phthalate	ug/L	--		--		--		--		--		--		--		--				--		50	U	10	U	--		--	
Dimethyl phthalate	ug/L	--		--		--		--		--		--		--		--				--		50	U	10	U	--		--	
Di-n-butyl phthalate	ug/L	--		--		--		--		--		--		--		--				--		50	U	10	U	--		--	
Di-n-octyl phthalate	ug/L	--		--		--		--		--		--		--		--				--		50	U	10	U	--		--	
Fluoranthene	ug/L	24	U	620	U	48	U	120	U	2600	U	26	U	120	U	560	U	2.4	U	560	U	50	U	10	U	2.4	U	2.7	U
Fluorene	ug/L	21	U	620	U	42	U	100	U	2600	U	22	U	110	U	32	J	2.1	U	560	U	50	U	10	U	2.1	U	5.51	
Hexachlorobenzene	ug/L	21	U	620	U	42	U	100	U	2600	U	22	U	110	U	560	U	2.1	U	560	U	50	U	10	U	2.1	U	2.3	U
Hexachlorobutadiene	ug/L	--		--		--		--		--		--		--		--		--		--		50	U	10	U	--		--	
Hexachlorocyclopentadiene	ug/L	--		--		--		--		--		--		--		--		--		--		50	U	10	U	--		--	
Hexachloroethane	ug/L	--		--		--		--		--		--		--		--		--		--		50	U	10	U	--		--	
Indeno(1,2,3-cd)pyrene	ug/L	--		--		--		--		--		--		--		--		--		--		50	U	10	U	--		--	
Isophorone	ug/L	--		--		--		--		--		--		--		--		--		--		50	U	10	U	--		--	
Naphthalene	ug/L	4990		2400		7150		11700		19000		16400		5020		6400		20.4		560	U	6	J	12		1.7	U	111	
Nitrobenzene	ug/L	--		--		--		--		--		--		--		--		--		--		50	U	10	U	--		--	
N-Nitrosodiphenylamine	ug/L	--		--		--		--		--		--		--		--		--		--		50	U	10	U	--		--	
N-Nitrosodipropylamine	ug/L	--		--		--		--		--		--		--		--		--		--		50	U	10	U	--		--	
Phenanthrene	ug/L	59	U	620	U	120	U	290	U	2600	U	64	U	300	U	560	U	6	U	560	U	50	U	10	U	5.9	U	6.5	U
Phenol	ug/L	16	U	230000		19100		42600		91000		210000		33500		31000		783		280	J	50	U	10	U	1.6	U	73.5	
Pyrene	ug/L	21	U	620	U	42	U	100	U	2600	U	22	U	110	U	560	U	2.1	U	560	U	50	U	10	U	2.1	U	2.3	U
Metals																													
Antimony	ug/L	60	U	--		60	U	60	U	--		190		60	U	--		60	U	--		--		--		60	U	60	U
Arsenic	ug/L	50	U	--		66		50	U	--		100	U	50	U	--		10	U	--		--		--		50	U	47	
Beryllium	ug/L	17		--		3		2.8		--		33		5.4		--		1	U	--		--		--		1.4		1	U
Cadmium	ug/L	4	U	--		13		10		--		170		21		--		10		--		--		--		2	U	2	U
Chromium (Total)	ug/L	4900		1290		1160		170		118		67300		900		272		23		18.1		--		--		1870		39	
Chromium (Hexavalent)	ug/L	50	U	--		10	U	10	U	--		50	U	10	U	--		10	U	--		--		--		50	U	50	U
Copper	ug/L	51		--		37		19		--		350		58		--		21		--		--		--		26		15	
Cyanide	ug/L	67		--		55		70		--		25	U	73		--		25	U	--		--		--		34		25	U
Lead	ug/L	140		3.79		340		75	U	8.52		350		110		21.2		820		848		--		--		75	U	75	U
Mercury	ug/L	0.2	U	--		0.41		0.23		--		0.2	U	0.23		--		0.2	U	--		--		--		0.2	U	0.2	U
Nickel	ug/L	930		--		460		300		--		2950		510		--		20	U	--		--		--		27		20	U
Selenium	ug/L	25	U	--		5	U	50	U	--		25	U	5	U	--		25	U	--		--		--		25	U	5	U
Silver	ug/L	10	U	--		10	U	10	U	--		10	U	10	U	--		10	U	--		--		--		10	U	10	U
Thallium	ug/L	10	U	--		10	U	10	U	--		10	U	10	U	--		10	U	--		--		--		10	U	10	U
Zinc	ug/L	1300		--		540		310		--		2530		490		--		54		--		--		--		37		20	U

TABLE B-10
HISTORICAL ANALYTICAL RESULTS
GROUNDWATER - SAND UNIT MONITORING WELLS (1991 - 1999)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SC-MW-2L 09/30/92 Primary		SC-MW-3L 01/12/91 Primary		SC-MW-3L 09/30/92 Primary		SC-MW-4L 01/12/91 Primary		SC-MW-4L 09/30/92 Primary		SC-MW-5L 01/12/91 Primary		SC-MW-5L 09/30/92 Primary		SC-MW-6L 01/12/91 Primary		SC-MW-7L 01/12/91 Primary		SC-MW-8L 01/12/91 Primary		SC-MW-8L 09/30/92 Primary		SC-MW-9L 01/12/91 Primary		SC-MW-9L 09/30/92 Primary	
Volatile Organics																											
1,2-Dichloroethene	ug/L	50	U	1.6	U	100	U	160	U	250	U	40	U	50	U	16	U	40	U	244		190	J	3.2	U	82	J
Acetone	ug/L	50	U	--		100	U	--		250	U	--		50	U	--		--		--		500	U	--		500	
Benzene	ug/L	55		4.4	U	56	J	519		250	J	110	U	23	J	534		501		388		430	J	31.1		85	J
Carbon disulfide	ug/L	50	U	--		100	U	--		250	U	--		50	U	--		--		--		500	U	--		50	J
Chlorobenzene	ug/L	380		65.1		1100		1230		300		414		310		60	U	150	U	3060		5200		12	U	50	J
Chloromethane	ug/L	--		10	U	--		1000	U	--		250	U	--		100	U	250	U	500	U	--		20	U	--	
Dichlorodifluoromethane	ug/L	--		10.6		--		1000	U	--		250	U	--		100	U	250	U	500	U	--		20	U	--	
Ethylbenzene	ug/L	50	U	7.2	U	100	U	720	U	52	J	180	U	--	U	309		243		360	U	500	U	14	U	50	J
Methylene chloride	ug/L	25	J	2.8	U	65	J	415		180	J	70	U	56	B	38.8	B	79.8		223	B	420	J	5.6	U	32	J
Styrene	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
Tetrachloroethylene	ug/L	50	U	4.1	U	100	U	410	U	250	U	100	U	50	U	41	U	100	U	1590		2000		8.2	U	40	J
Toluene	ug/L	6	J	6	U	23	J	600	U	210	J	150	U	50	U	912		1190		300	U	500	U	14.6		50	U
Trichloroethylene	ug/L	50	U	1.9	U	100	U	190	U	40	J	48	U	50	U	19	U	48	U	5270		5600		3.8	U	50	U
Vinyl chloride	ug/L	50	U	10	U	100	U	1000	U	250	U	250	U	50	U	100	U	250	U	669		350	J	20	U	50	U
Xylene (total)	ug/L	50	U	--		100	U	--		95	J	--		50	U	--		--		--		120	J	--		47	J
Semivolatile Organics																											
1,2,4-Trichlorobenzene	ug/L	140	J	127		62	J	107		120	J	21	U	62	U	10	U	22	U	14400		12000		110	U	5600	U
1,2-Dichlorobenzene	ug/L	13000		30300		11000		28100		9600		9650		5100		10	U	1570		13800		16000		110	U	5600	U
1,3-Dichlorobenzene	ug/L	9800		24600		7500		26900		8000		6030		3000		10	U	152		12500		15000		110	U	5600	U
1,4-Dichlorobenzene	ug/L	14000		29500		11000		29200		11000		10400		4900		24	U	279		12300		18000		250	U	5600	U
2,4,5-Trichlorophenol	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
2,4,6-Trichlorophenol	ug/L	560	U	3.2	U	530	U	16	U	530	U	29	U	62	U	15	U	31	U	66	U	670	U	160	U	5600	U
2,4-Dichlorophenol	ug/L	180	J	145		120	J	77.3		530	U	142		190		15	U	31	U	66	U	670	U	160	U	5600	U
2,4-Dimethylphenol	ug/L	560	U	3.2	U	530	U	5400		3200		29	U	62	U	28500		83200		581		920		7930		6800	
2,4-Dinitrophenol	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
2,4-Dinitrotoluene	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
2,6-Dinitrotoluene	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
2-Chloronaphthalene	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
2-Chlorophenol	ug/L	58	J	3.9	U	530	U	20	U	530	U	36	U	25	J	18	U	38	U	80	U	670	U	190	U	5600	U
2-Methylnaphthalene	ug/L	560	U	--		530	U	--		530	U	--		62	U	--		--		--		150	J	--		5600	U
2-Methylphenol	ug/L	670		--		530	U	--		570		--		62	U	--		--		--		450	J	--		18000	
2-Nitroaniline	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
2-Nitrophenol	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
3,3-Dichlorobenzidine	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
3-Nitroaniline	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
4,6-Dinitro-2-methylphenol	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
4-Bromophenylphenyl ether	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
4-Chloroaniline	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
4-Chlorophenyl phenyl ether	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
4-Chloro-3-methylphenol	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
4-Methylphenol	ug/L	560	U	--		530	U	--		710		--		62	U	--		--		--		1700		--		170000	
4-Nitroaniline	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
4-Nitrophenol	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
Acenaphthene	ug/L	560	U	2.2	U	530	U	11	U	530	U	21	U	62	U	264		548		46	U	670	U	2910		5600	U
Acenaphthylene	ug/L	560	U	4.1	U	530	U	21	U	530	U	38	U	62	U	52.9		96.3		85	U	670	U	200	U	5600	U
Anthracene	ug/L	560	U	2.2	U	530	U	11	U	530	U	21	U	62	U	23.4		69.3		46	U	670	U	110	U	5600	U
Benzo(a)anthracene	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
Benzo(a)pyrene	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
Benzo(b)fluoranthene	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
Benzo(ghi)perylene	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
Benzo(k)fluoranthene	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	

TABLE B-10
HISTORICAL ANALYTICAL RESULTS
GROUNDWATER - SAND UNIT MONITORING WELLS (1991 - 1999)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SC-MW-2L 09/30/92 Primary		SC-MW-3L 01/12/91 Primary		SC-MW-3L 09/30/92 Primary		SC-MW-4L 01/12/91 Primary		SC-MW-4L 09/30/92 Primary		SC-MW-5L 01/12/91 Primary		SC-MW-5L 09/30/92 Primary		SC-MW-6L 01/12/91 Primary		SC-MW-7L 01/12/91 Primary		SC-MW-8L 01/12/91 Primary		SC-MW-8L 09/30/92 Primary		SC-MW-9L 01/12/91 Primary		SC-MW-9L 09/30/92 Primary	
Semivolatile Organics (Cont'd)																											
Bis(2-chloroethoxy)methane	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
Bis(2-chloroethyl)ether	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
Bis(2-chloromethyl)ether	ug/L	--		10	U	--		1000	U	--		250	U	--		100	U	250	U	500	U	--		20	U	--	
Bis(2-ethylhexyl)phthalate	ug/L	560	U	12	U	530	U	60	U	530	U	110	U	62	U	11100		110	U	240	U	670	U	570	U	5600	U
Butyl benzyl phthalate	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
Carbazole	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
Chrysene	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
Dibenzo(a,h)anthracene	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
Dibenzofuran	ug/L	560	U	--		530	U	--		530	U	--		62	U	--		--		--		670	U	--		5600	U
Diethyl phthalate	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
Dimethyl phthalate	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
Di-n-butyl phthalate	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
Di-n-octyl phthalate	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
Fluoranthene	ug/L	560	U	2.6	U	530	U	13	U	530	U	24	U	62	U	12	U	29.7		54	U	670	U	130	U	5600	U
Fluorene	ug/L	560	U	2.2	U	530	U	11	U	530	U	21	U	62	U	136		303		46	U	670	U	110	U	5600	U
Hexachlorobenzene	ug/L	560	U	2.2	U	530	U	11	U	530	U	21	U	62	U	10	U	22	U	46	U	670	U	110	U	5600	U
Hexachlorobutadiene	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
Hexachlorocyclopentadiene	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
Hexachloroethane	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
Indeno(1,2,3-cd)pyrene	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
Isophorone	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
Naphthalene	ug/L	560	U	55.8		530	U	70.8		68	J	19.6		62	U	12700		23700		4970		7200		58200		5600	U
Nitrobenzene	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
N-Nitrosodiphenylamine	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
N-Nitrosodipropylamine	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--	
Phenanthrene	ug/L	560	U	6.4	U	530	U	32	U	530	U	59	U	62	U	68.8		216		130	U	670	U	310	U	5600	U
Phenol	ug/L	560	U	1.8	U	530	U	1320		150	J	16	U	31	J	888		53700		3600		2100		68700		360000	
Pyrene	ug/L	560	U	2.2	U	530	U	11	U	530	U	21	U	62	U	10	U	22	U	46	U	670	U	110	U	5600	U
Metals																											
Antimony	ug/L	--		60	U	--		60	U	--		60	U	--		60	U	60	U	60	U	--		60	U	--	
Arsenic	ug/L	--		130		--		20		--		100		--		42		50	U	20	U	--		250	U	--	
Beryllium	ug/L	--		1	U	--		2.2		--		2.9		--		1	U	2.8		2.1		--		145		--	
Cadmium	ug/L	--		2	U	--		2	U	--		2.3		--		2	U	2	U	2	U	--		10	U	--	
Chromium (Total)	ug/L	7.74		14		27.8		1400		1210		1890		5100		180		870		710		1440		15800		9560	
Chromium (Hexavalent)	ug/L	--		50	U	--		50	U	--		10	U	--		10	U	500	U	50	U	--		500	U	--	
Copper	ug/L	--		11		--		15		--		46		--		14		18		64		--		570		--	
Cyanide	ug/L	--		35		--		25	U	--		80		--		58		92		37		--		28		--	
Lead	ug/L	22.6		75	U	6.62		75	U	1.78		75	U	1	U	75	U	75	U	7	U	41.6		610		1	U
Mercury	ug/L	--		0.2	U	--		0.2	U	--		0.2	U	--		0.2	U	0.2	U	0.2	U	--		0.2	U	--	
Nickel	ug/L	--		20	U	--		45		--		23		--		23		67		26		--		6740		--	
Selenium	ug/L	--		5	U	--		10	U	--		25	U	--		5	U	5	U	5	U	--		25	U	--	
Silver	ug/L	--		10	U	--		10	U	--		10	U	--		10	U	10	U	10	U	--		10	U	--	
Thallium	ug/L	--		10	U	--		10	U	--		10	U	--		10	U	10	U	10	U	--		10	U	--	
Zinc	ug/L	--		20	U	--		50		--		68		--		74		39		46		--		11900		--	

TABLE B-11
HISTORICAL ANALYTICAL RESULTS
GROUNDWATER - SAND UNIT PIEZOMETERS (1983)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SC-PZ-1D 08/01/83 Primary		SC-PZ-2D 08/01/83 Primary		SC-PZ-3D 08/01/83 Primary		SC-PZ-4D 01/01/83 Primary		SC-PZ-5D 08/01/83 Primary	
Volatile Organics											
1,1,2-Trichloroethane	ug/L	10	U	5	U	10	U	30		5	U
1,1-Dichloroethene	ug/L	10	U	5	U	10	U	20		5	U
1,2-Dichloroethene	ug/L	10	U	30		10	U	10	U	5	U
Benzene	ug/L	125		1000		670		220		50	
Chlorobenzene	ug/L	1850		660		10	U	13900		5	U
Ethylbenzene	ug/L	10	U	300		310		10	U	5	U
Tetrachloroethylene	ug/L	10	U	5	U	10	U	5350		5	U
Toluene	ug/L	10	U	435		640		10	U	5	U
Trichloroethylene	ug/L	10	U	20		10	U	13960		5	U
Xylene (total)	ug/L	10	U	745		1550		10	U	5	U
Semivolatile Organics											
1,2,4-Trichlorobenzene	ug/L	10		10	U	10	U	10	U	10	U
1,2-Dichlorobenzene	ug/L	1500		2700		10	U	4900		10	U
1,2-Diphenylhydrazine	ug/L	10	U	10	U	10	U	10	U	37	
1,3-Dichlorobenzene	ug/L	1300		1400		10	U	10	U	10	U
1,4-Dichlorobenzene	ug/L	4100		3700		10	U	10	U	10	U
Acenaphthene	ug/L	10	U	10	U	28		10	U	10	U
Anthracene	ug/L	10	U	10	U	64		10	U	120	
Bis(2-ethylhexyl)phthalate	ug/L	10	U	10	U	10	U	31		10	U
Dimethyl phthalate	ug/L	10	U	10	U	10	U	10	U	10	U
Di-n-butyl phthalate	ug/L	10		19		10	U	32		10	U
Fluoranthene	ug/L	10	U	10	U	10	U	10	U	10	U
Fluorene	ug/L	10	U	10	U	10	U	10	U	10	U
Naphthalene	ug/L	10		10	U	53		10	U	10	U
Phenanthrene	ug/L	10	U	10	U	10	U	10	U	10	U
Metals											
Chromium (Total)	ug/L	0.05	U	0.3		0.06		0.44		44.3	
Chromium (Hexavalent)	ug/L	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Indicator Parameters											
pH	SU	6.3		5.6		5.3		4.8		2	
Specific Conductance	umhos	2150		5000		2400		5000		5000	

TABLE B-12
HISTORICAL ANALYTICAL RESULTS
SURFACE WATER SAMPLES - SOUTH DITCH (1991 - 2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SSW-1 01/01/91 Primary		SSW-2 01/01/91 Primary		SSW-3 01/01/91 Primary		SSW-4 01/01/91 Primary		SSW-5 01/01/91 Primary		SSW-6 01/01/91 Primary		SC-SW-05 01/02/02 Primary		SC-SW-06 01/02/02 Primary		SC-SW-07 01/02/02 Primary		SC-SW-08 01/02/02 Primary		SC-SW-09 01/03/02 Primary		SC-SW-10 01/03/02 Primary		SC-SW-11 01/03/02 Primary		SC-SW-12 01/03/02 Primary		SC-SW-13 01/03/02 Primary		SC-SW-14 01/03/02 Primary	
Volatile Organics																																	
1,1,1-Trichloroethane	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,1,2,2-Tetrachloroethane	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,1,2-Trichloroethane	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,1-Dichloroethane	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,1-Dichloroethene	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
1-Methylethyl-benzene	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,2-Dibromoethane	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,2-Dichloroethane	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,2-Dichloroethene	ug/L	8	U	1.6	U	8	U	21		21		10	U	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,2-Dichloropropane	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
2-Butanone	ug/L	--		--		--		--		--		--		ND		5	J	3	J	3	J	2	J	ND		ND		4	J	ND		ND	
2-Hexanone	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
4-Methyl-2-pentanone	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Acetone	ug/L	--		--		--		--		--		--		3	J	27	J	ND		16	J	9	J	6	J	9	J	22	J	5	J	5	J
Benzene	ug/L	22	U	9.7		22	U	39.8		39.8		10	U	ND		8	J	39		9	J	ND		ND		ND		8	J	ND		ND	
Bromodichloromethane	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Bromoform	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Bromomethane	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		2	J	ND		ND	
Carbon disulfide	ug/L	--		--		--		--		--		--		5	J	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Carbon tetrachloride	ug/L	--		--		--		--		--		--		ND	U	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chlorobenzene	ug/L	414		86		332		329		329		10	U	ND		51		260	J	68	J	3	J	2	J	3	J	31		3	J	3	J
Chloroethane	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chloroform	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chloromethane	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
cis-1,2-Dichloroethene	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
cis-1,3-Dichloropropene	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Cyclohexane	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dibromochloropropane	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dibromochloromethane	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dichlorodifluoromethane	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Ethylbenzene	ug/L	36	U	7.2	U	36	U	36	U	36	U	10	U	ND		3	J	7	J	2	J	ND		ND		ND		4	J	ND		ND	
Methyl Acetate	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Methylcyclohexane	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Methylene chloride	ug/L	14	U	2.8	U	14	U	14	U	14	U	3	J	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Methyltert-butylether	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Styrene	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Tetrachloroethylene	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Toluene	ug/L	30	U	6.2		30	U	30	U	30	U	10	U	ND		2	J	6	J	3	J	ND		ND		ND		2	J	ND		ND	
trans-1,3-Dichloropropene	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Trichloroethylene	ug/L	9.5	U	1.9	U	9.5	U	9.5	U	9.5	U	10	U	--		--		--		--		--		--		--		--		--		--	
Trichlorofluoromethane	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Vinyl chloride	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Xylene (total)	ug/L	--		--		--		--		--		10	U	ND		11	J	14	J	6	J	ND		ND		ND		10	J	ND		ND	
Semivolatile Organics																																	
1,1'-Biphenyl	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
1,2,4-Trichlorobenzene	ug/L	2	U	78.5		49.3		51		30.2		34	J	2	J	16		82		33		1	J	ND		ND		6.7		ND		ND	
1,2-Dichlorobenzene	ug/L	171		224		542		2740		321		170		ND		90		150		68		2	J	2	J	3	J	58		ND		2	J
1,3-Dichlorobenzene	ug/L	269		85.5		432		2920		278		82		ND		52		65		29		3	J	5.8		6.9		12		6.4		4	J
1,4-Dichlorobenzene	ug/L	369		192		517		4680		385		240		ND		79		200		77		5.6		6		6.3		15		4	J	4	J
2,4,5-Trichlorophenol	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
2,4,6-Trichlorophenol	ug/L	--		--		--		--		--		--		ND		3	J	ND		ND		ND		ND		ND		ND		ND		ND	
2,4-Dichlorophenol	ug/L	2.8	U	2.8	U	3	U	19.8		3.1	U	57	U	ND		ND		5.9		2	J	ND		ND		ND		ND		ND		ND	
2,4-Dimethylphenol	ug/L	17.6		60.4		3	U	2.9	U	3.1	U	1000		ND		ND		81		43		2	J	ND		ND		ND		ND		ND	
2,4-Dinitrophenol	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
2,4-Dinitrotoluene	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	

TABLE B-12
HISTORICAL ANALYTICAL RESULTS
SURFACE WATER SAMPLES - SOUTH DITCH (1991 - 2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SSW-1 01/01/91 Primary		SSW-2 01/01/91 Primary		SSW-3 01/01/91 Primary		SSW-4 01/01/91 Primary		SSW-5 01/01/91 Primary		SSW-6 01/01/91 Primary		SC-SW-05 01/02/02 Primary		SC-SW-06 01/02/02 Primary		SC-SW-07 01/02/02 Primary		SC-SW-08 01/02/02 Primary		SC-SW-09 01/03/02 Primary		SC-SW-10 01/03/02 Primary		SC-SW-11 01/03/02 Primary		SC-SW-12 01/03/02 Primary		SC-SW-13 01/03/02 Primary		SC-SW-14 01/03/02 Primary	
2,6-Dinitrotoluene	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
2-Chloronaphthalene	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
2-Chlorophenol	ug/L	3.9		3.5	U	3.8		3.5	U	3.8	U	57	U	ND		ND		1	J	ND		ND		ND		ND		ND		ND		ND	
2-Methylnaphthalene	ug/L	--		--		--		--		--		41	J	ND		44		40		24		15		ND		ND		80		ND		1	J
2-Methylphenol	ug/L	--		--		--		--		--		340		ND		17		39		24		6.6		ND		ND		8.5		ND		ND	
2-Nitroaniline	ug/L	--		--		--		--		--		-		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
2-Nitrophenol	ug/L	--		--		--		--		--		-		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
3-Nitroaniline	ug/L	--		--		--		--		--		-		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
4,6-Dinitro-2-methylphenol	ug/L	--		--		--		--		--		-		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
4-Bromophenylphenyl ether	ug/L	--		--		--		--		--		-		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
4-Chloroaniline	ug/L	--		--		--		--		--		-		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
4-Chlorophenyl phenyl ether	ug/L	--		--		--		--		--		-		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
4-Chloro-3-methylphenol	ug/L	--		--		--		--		--		-		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
4-Methylphenol	ug/L	--		--		--		--		--		-		ND		45		37		29		17		ND		1	J	39		ND		ND	
4-Nitroaniline	ug/L	--		--		--		--		--		-		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
4-Nitrophenol	ug/L	--		--		--		--		--		-		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Acenaphthene	ug/L	2	U	12.3		2.1	U	2	U	2.2	U	93		ND		13		38		30		3	J	ND		ND		9.3		ND		ND	
Acenaphthylene	ug/L	3.6	U	3.7	U	3.8	U	3.7	U	4	U	57	U	ND		ND		1	J	ND		ND		ND		ND		ND		ND		ND	
Anthracene	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Azobenzene	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Benzo(a)anthracene	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Benzo(a)pyrene	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Benzo(b)fluoranthene	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Benzo(ghi)perylene	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Benzo(k)fluoranthene	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Benzyl alcohol	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Bis(2-chloroethoxy)methane	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Bis(2-chloroethyl)ether	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Bis(2-chloroisopropyl)ether	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Bis(2-ethylhexyl)phthalate	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		1	J	ND		ND		1	J
Bis(chloromethyl)ether	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Butyl benzyl phthalate	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chrysene	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dibenzo(a,h)anthracene	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dibenzofuran	ug/L	--		--		--		--		--		52	J	ND		5.9		18		10		3	J	ND		ND		15		ND		ND	
Diethyl phthalate	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dimethyl phthalate	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Di-n-butyl phthalate	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Di-n-octyl phthalate	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Fluoranthene	ug/L	--		--		--		--		--		--		1	J	ND		1	J	ND		ND		ND		ND		ND		ND		ND	
Fluorene	ug/L	2	U	2.8		2.1		2	U	2.2	U	26	J	ND		ND		9		4.9		ND		ND		ND		2	J	ND		ND	
Hexachlorobenzene	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Hexachlorobutadiene	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Hexachlorocyclopentadiene	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Hexachloroethane	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Indeno(1,2,3-cd)pyrene	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Isophorone	ug/L	2.3	U	2.3	U	2.4	U	2.3	U	5.2		57	U	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Naphthalene	ug/L	9.14		260		16.4		3.97		7.07		81		ND		77		270		100		33		ND		ND		240		ND		2	J
Nitrobenzene	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
N-Nitrosodiphenylamine	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
N-Nitrosodipropylamine	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Pentachlorophenol	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Phenanthrene	ug/L	5.6	U	5.7	U	5.9	U	5.7	U	6.1	U	9	J	ND		3	J	7.8		4	J	ND		ND		ND		4.9		ND		ND	
Phenol	ug/L	29		241		1.6	U	1.6	U	1.7	U	8	J	ND		15		ND		ND		12		ND		ND		31		ND		ND	
Pyrene	ug/L	--		--		--		--		--		--		1	J	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Metals																																	
Aluminum	ug/L	--		--		--		--		--		--		8400		760		ND		ND		ND		ND		410		1500		250		ND	

TABLE B-12
HISTORICAL ANALYTICAL RESULTS
SURFACE WATER SAMPLES - SOUTH DITCH (1991 - 2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SSW-1 01/01/91 Primary		SSW-2 01/01/91 Primary		SSW-3 01/01/91 Primary		SSW-4 01/01/91 Primary		SSW-5 01/01/91 Primary		SSW-6 01/01/91 Primary		SC-SW-05 01/02/02 Primary		SC-SW-06 01/02/02 Primary		SC-SW-07 01/02/02 Primary		SC-SW-08 01/02/02 Primary		SC-SW-09 01/03/02 Primary		SC-SW-10 01/03/02 Primary		SC-SW-11 01/03/02 Primary		SC-SW-12 01/03/02 Primary		SC-SW-13 01/03/02 Primary		SC-SW-14 01/03/02 Primary	
Antimony	ug/L	60	U	60	U	60	U	60	U	60	U	24000	U	ND		ND		ND		ND		ND		ND		ND		17		ND		ND	
Arsenic	ug/L	10	U	10	U	10	U	10		10	U	5000	U	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Barium	ug/L	--		--		--		--		--		--		260		620		98		69		160		46		140		250		50		18	
Beryllium	ug/L	1	U	1	U	1	U	2		1	U	200	U	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Cadmium	ug/L	2	U	2	U	2		17		3		3000	U	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Calcium	ug/L	--		--		--		--		--		--		290		810		92		50		89		35		150		390		31		21	
Chromium (Dissolved)	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Chromium (Total)	ug/L	6290		320		480		8640		160		1240000		1300		1900		1400		1100		710		230		450		3300		250		150	
Chromium (Hexavalent, dissolved)	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Chromium (Hexavalent)	ug/L	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Cobalt	ug/L	--		--		--		--		--		--		11		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Copper	ug/L	23		10	U	10	U	200		10	U	173000		21		11		ND		ND		ND		ND		ND		ND		ND		ND	
Cyanide	ug/L	25	U	25	U	25	U	25	U	25	U	1000	U	--		--		--		--		--		--		--		--		--		--	
Iron	ug/L	--		--		--		--		--		--		39000		980		240		200		580		870		2200		1200		1700		880	
Lead	ug/L	75	U	75	U	75	U	1000		75	U	136000		65		25		ND	U	26		200		80		330		210		420		76	
Magnesium	ug/L	--		--		--		--		--		--		500		12		11		6		6.4		8.3		11		7.1		12		10	
Manganese	ug/L	--		--		--		--		--		--		1300		60		11		13		42		81		220		200		72		56	
Mercury	ug/L	ND	U	ND	U	ND	U	ND	U	ND	U	19400		0.31		0.62		0.086		0.49		8.3		ND		ND		ND		0.11		ND	
Nickel	ug/L	20	U	20	U	20	U	350		37		982000		39		14		8.2		8.6		7		5.1		7		ND		7.3		ND	
Potassium	ug/L	--		--		--		--		--		--		150		8.2		16		13		6.3		6.1		6.2		4.3		6.9		6.5	
Selenium	ug/L	5	U	5	U	5	U	5		5	U	2000	U	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Silver	ug/L	13		10	U	10	U	10	U	10	U	2000	U	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Sodium	ug/L	--		--		--		--		--		--		3900		110		220		180		57		51		50		69		53		47	
Thallium	ug/L	10	U	10	U	10	U	10	U	10	U	2000	U	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Vanadium	ug/L	--		--		--		--		--		--		74		33		120		81		ND		ND		10		ND		12		ND	
Zinc	ug/L	360		230		58		1600		580		487000		220		40		ND		9.6		ND		8.6		40		22		29		ND	
PCBs																																	
Aroclor 1016	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Aroclor 1221	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Aroclor 1232	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Aroclor 1242	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Aroclor 1248	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Aroclor 1254	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Aroclor 1260	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Pesticides																																	
4,4'-DDD	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
4,4'-DDE	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
4,4'-DDT	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Aldrin	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
alpha-BHC	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
alpha-Chlordane	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
beta-BHC	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chlordane	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
delta-BHC	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dieldrin	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Endosulfan I	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Endosulfan II	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Endosulfan sulfate	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Endrin	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Endrin aldehyde	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Endrin ketone	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
gamma-Chlordane	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Heptachlor	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Heptachlor epoxide	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Lindane	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Methoxychlor	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Toxaphene	ug/L	--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	

TABLE B-12
HISTORICAL ANALYTICAL RESULTS
SURFACE WATER SAMPLES - SOUTH DITCH (1991 - 2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SC-SW-15 01/03/02 Primary		SC-SW-16 01/03/02 Primary		SC-SW-17 01/03/02 Primary		SC-SW-18 01/03/02 Primary		SC-SW-19 01/03/02 Primary		SC-SW-20 01/03/02 Primary		SC-SW-21 01/03/02 Primary	
Volatile Organics															
1,1,1-Trichloroethane	ug/L	ND		ND		ND		ND		ND		ND		ND	
1,1,2,2-Tetrachloroethane	ug/L	ND		ND		ND		ND		ND		ND		ND	
1,1,2-Trichloroethane	ug/L	ND		ND		ND		ND		ND		ND		ND	
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	ND		ND		ND		ND		ND		ND		ND	
1,1-Dichloroethane	ug/L	ND		ND		ND		ND		ND		ND		ND	
1,1-Dichloroethene	ug/L	ND		ND		ND		ND		ND		ND		ND	
1-Methylethyl-benzene	ug/L	ND		ND		ND		ND		ND		ND		ND	
1,2-Dibromoethane	ug/L	ND		ND		ND		ND		ND		ND		ND	
1,2-Dichloroethane	ug/L	ND		ND		ND		ND		ND		ND		ND	
1,2-Dichloroethene	ug/L	ND		ND		ND		ND		ND		ND		ND	
1,2-Dichloropropane	ug/L	ND		ND		ND		ND		ND		ND		ND	
2-Butanone	ug/L	ND		ND		ND		ND		ND		2	J	ND	
2-Hexanone	ug/L	ND		ND		ND		ND		ND		ND		ND	
4-Methyl-2-pentanone	ug/L	ND		ND		ND		ND		ND		ND		ND	
Acetone	ug/L	5	J	6	J	4	J	5	J	5	J	11	J	3	J
Benzene	ug/L	ND		ND		ND		ND		15		29		23	
Bromodichloromethane	ug/L	ND		ND		ND		ND		ND		ND		ND	
Bromoform	ug/L	ND		ND		ND		ND		ND		ND		ND	
Bromomethane	ug/L	ND		ND		ND		ND		ND		ND		ND	
Carbon disulfide	ug/L	ND		ND		ND		ND		ND		3	J	37	
Carbon tetrachloride	ug/L	ND		ND		ND		ND		ND		ND		ND	
Chlorobenzene	ug/L	ND		ND		ND		9	J	250	J	600		760	
Chloroethane	ug/L	ND		ND		ND		ND		ND		ND		ND	
Chloroform	ug/L	ND		ND		ND		ND		ND		ND		ND	
Chloromethane	ug/L	ND		ND		ND		ND		ND		ND		ND	
cis-1,2-Dichloroethene	ug/L	ND		ND		ND		ND		ND		ND		ND	
cis-1,3-Dichloropropene	ug/L	ND		ND		ND		ND		ND		ND		ND	
Cyclohexane	ug/L	ND		ND		ND		ND		ND		ND		ND	
Dibromochloropropane	ug/L	ND		ND		ND		ND		ND		ND		ND	
Dibromochloromethane	ug/L	ND		ND		ND		ND		ND		ND		ND	
Dichlorodifluoromethane	ug/L	ND		ND		ND		ND		ND		3	J	ND	
Ethylbenzene	ug/L	ND		ND		ND		ND		ND		2	J	ND	
Methyl Acetate	ug/L	ND		ND		ND		ND		ND		ND		ND	
Methylcyclohexane	ug/L	ND		ND		ND		ND		ND		ND		ND	
Methylene chloride	ug/L	ND		ND		ND		ND		ND		ND		ND	
Methyltert-butylether	ug/L	ND		ND		ND		ND		ND		ND		ND	
Styrene	ug/L	ND		ND		ND		ND		ND		ND		ND	
Tetrachloroethylene	ug/L	ND		ND		ND		ND		ND		ND		ND	
Toluene	ug/L	ND		ND		ND		ND		ND		ND		ND	
trans-1,3-Dichloropropene	ug/L	ND		ND		ND		ND		ND		ND		ND	
Trichloroethylene	ug/L	--		--		--		--		--		--		--	
Trichlorofluoromethane	ug/L	ND		ND		ND		ND		ND		ND		ND	
Vinyl chloride	ug/L	ND		ND		ND		ND		ND		ND		ND	
Xylene (total)	ug/L	ND		ND		ND		ND		ND		7	J	ND	
Semivolatile Organics															
1,1'-Biphenyl	ug/L	--		--		--		--		--		--		--	
1,2,4-Trichlorobenzene	ug/L	ND		ND		ND		2	J	4	J	45		200	
1,2-Dichlorobenzene	ug/L	ND		ND		ND		ND		35		450		190	
1,3-Dichlorobenzene	ug/L	3	J	4	J	13		30		85		390		430	
1,4-Dichlorobenzene	ug/L	3	J	4.2		3	J	11		46		420		610	
2,4,5-Trichlorophenol	ug/L	ND		ND		ND		ND		ND		ND		ND	
2,4,6-Trichlorophenol	ug/L	ND		ND		ND		ND		ND		ND		ND	
2,4-Dichlorophenol	ug/L	ND		ND		ND		ND		4	J	5.7		34	
2,4-Dimethylphenol	ug/L	ND		ND		ND		ND		ND		ND		ND	U
2,4-Dinitrophenol	ug/L	ND		ND		ND		ND		ND		ND		ND	U
2,4-Dinitrotoluene	ug/L	ND		ND		ND		ND		ND		ND		ND	U

TABLE B-12
HISTORICAL ANALYTICAL RESULTS
SURFACE WATER SAMPLES - SOUTH DITCH (1991 - 2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SC-SW-15 01/03/02 Primary		SC-SW-16 01/03/02 Primary		SC-SW-17 01/03/02 Primary		SC-SW-18 01/03/02 Primary		SC-SW-19 01/03/02 Primary		SC-SW-20 01/03/02 Primary		SC-SW-21 01/03/02 Primary	
2,6-Dinitrotoluene	ug/L	ND		ND		ND		ND		ND		ND		ND	U
2-Chloronaphthalene	ug/L	ND		ND		ND		ND		ND		ND		ND	U
2-Chlorophenol	ug/L	ND		ND		ND		ND		1	J	4.4		4	J
2-Methylnaphthalene	ug/L	ND		ND		ND		ND		ND		2	J	ND	
2-Methylphenol	ug/L	ND		ND		ND		ND		ND		ND		ND	
2-Nitroaniline	ug/L	ND		ND		ND		ND		ND		ND		ND	
2-Nitrophenol	ug/L	ND		ND		ND		ND		ND		ND		ND	
3-Nitroaniline	ug/L	ND		ND		ND		ND		ND		ND		ND	
4,6-Dinitro-2-methylphenol	ug/L	ND		ND		ND		ND		ND		ND		ND	
4-Bromophenylphenyl ether	ug/L	ND		ND		ND		ND		ND		ND		ND	
4-Chloroaniline	ug/L	ND		ND		ND		ND		ND		ND		ND	
4-Chlorophenyl phenyl ether	ug/L	ND		ND		ND		ND		ND		ND		ND	
4-Chloro-3-methylphenol	ug/L	ND		ND		ND		ND		ND		ND		ND	
4-Methylphenol	ug/L	ND		ND		ND		ND		ND		4	J	3	J
4-Nitroaniline	ug/L	ND		ND		ND		ND		ND		ND		ND	
4-Nitrophenol	ug/L	ND		ND		ND		ND		ND		ND		ND	
Acenaphthene	ug/L	ND		ND		ND		ND		ND		ND		ND	
Acenaphthylene	ug/L	ND		ND		ND		ND		ND		ND		ND	
Anthracene	ug/L	ND		ND		ND		ND		ND		ND		ND	
Azobenzene	ug/L	ND		ND		ND		ND		ND		ND		ND	
Benzo(a)anthracene	ug/L	ND		ND		ND		ND		ND		ND		ND	
Benzo(a)pyrene	ug/L	ND		ND		ND		ND		ND		ND		ND	
Benzo(b)fluoranthene	ug/L	ND		ND		ND		ND		ND		ND		ND	
Benzo(ghi)perylene	ug/L	ND		ND		ND		ND		ND		ND		ND	
Benzo(k)fluoranthene	ug/L	ND		ND		ND		ND		ND		ND		ND	
Benzyl alcohol	ug/L	ND		ND		ND		ND		ND		ND		ND	
Bis(2-chloroethoxy)methane	ug/L	ND		ND		ND		ND		ND		ND		ND	
Bis(2-chloroethyl)ether	ug/L	ND		ND		ND		ND		ND		ND		ND	
Bis(2-chloroisopropyl)ether	ug/L	ND		ND		ND		ND		ND		ND		ND	
Bis(2-ethylhexyl)phthalate	ug/L	ND		ND		ND		ND		ND		ND		ND	
Bis(chloromethyl)ether	ug/L	--		--		--		--		--		--		--	
Butyl benzyl phthalate	ug/L	ND		ND		ND		ND		ND		ND		ND	
Chrysene	ug/L	ND		ND		ND		ND		ND		ND		ND	
Dibenzo(a,h)anthracene	ug/L	ND		ND		ND		ND		ND		ND		ND	
Dibenzofuran	ug/L	ND		ND		ND		ND		ND		ND		ND	
Diethyl phthalate	ug/L	ND		ND		ND		ND		ND		ND		ND	
Dimethyl phthalate	ug/L	ND		ND		ND		ND		ND		ND		ND	
Di-n-butyl phthalate	ug/L	ND		ND		ND		ND		ND		ND		ND	
Di-n-octyl phthalate	ug/L	ND		ND		ND		ND		ND		ND		ND	
Fluoranthene	ug/L	ND		ND		ND		ND		ND		ND		ND	
Fluorene	ug/L	ND		ND		ND		ND		ND		ND		ND	
Hexachlorobenzene	ug/L	ND		ND		ND		ND		ND		ND		ND	
Hexachlorobutadiene	ug/L	ND		ND		ND		ND		ND		ND		ND	
Hexachlorocyclopentadiene	ug/L	ND		ND		ND		ND		ND		ND		ND	
Hexachloroethane	ug/L	ND		ND		ND		ND		ND		ND		ND	
Indeno(1,2,3-cd)pyrene	ug/L	ND		ND		ND		ND		ND		ND		ND	
Isophorone	ug/L	ND		ND		ND		ND		ND		ND		ND	
Naphthalene	ug/L	ND		ND		ND		ND		3	J	23		5.6	
Nitrobenzene	ug/L	ND		ND		ND		ND		ND		ND		ND	
N-Nitrosodiphenylamine	ug/L	ND		ND		ND		ND		ND		ND		ND	
N-Nitrosodipropylamine	ug/L	ND		ND		ND		ND		ND		ND		ND	
Pentachlorophenol	ug/L	ND		ND		ND		ND		ND		ND		ND	
Phenanthrene	ug/L	ND		ND		ND		ND		ND		ND		ND	
Phenol	ug/L	ND		ND		ND		ND		1	J	5.5		4.5	
Pyrene	ug/L	ND		ND		ND		ND		ND		ND		ND	
Metals															
Aluminum	ug/L	330		2500		ND		ND		ND	U	690		1900	

TABLE B-12
HISTORICAL ANALYTICAL RESULTS
SURFACE WATER SAMPLES - SOUTH DITCH (1991 - 2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SC-SW-15 01/03/02 Primary		SC-SW-16 01/03/02 Primary		SC-SW-17 01/03/02 Primary		SC-SW-18 01/03/02 Primary		SC-SW-19 01/03/02 Primary		SC-SW-20 01/03/02 Primary		SC-SW-21 01/03/02 Primary	
Antimony	ug/L	ND		59		ND		ND		ND	U	ND		16	
Arsenic	ug/L	ND		ND		ND		ND		ND	U	ND		16	
Barium	ug/L	68		550		83		70		70		91		200	
Beryllium	ug/L	ND		ND		ND		ND		ND	U	ND		ND	
Cadmium	ug/L	ND		ND		ND		ND		ND	U	ND		ND	
Calcium	ug/L	25		63		34		35		46		110		92	
Chromium (Dissolved)	ug/L	--		--		--		--		--		--		--	
Chromium (Total)	ug/L	240		810		270		260		250		720		350	
Chromium (Hexavalent, dissolved)	ug/L	--		--		--		--		--		--		--	
Chromium (Hexavalent)	ug/L	--		--		--		--		--		--		--	
Cobalt	ug/L	ND		ND		ND		ND		ND		ND		ND	
Copper	ug/L	10		56		ND		ND		ND		ND		48	
Cyanide	ug/L	--		--		--		--		--		--		--	
Iron	ug/L	3000		29000		1100		430		1400		4600		31000	
Lead	ug/L	240		12000		380		140		310		ND		490	
Magnesium	ug/L	11		14		17		18		22		26		15	
Manganese	ug/L	110		540		57		45		120		280		380	
Mercury	ug/L	0.056		0.2		ND		ND		ND		ND		0.16	
Nickel	ug/L	6.3		20		10		10		11		9.4		9.9	
Potassium	ug/L	6.7		8.9		8		8.3		9		12		9.5	
Selenium	ug/L	ND		ND		ND		ND		ND		ND		ND	
Silver	ug/L	ND		ND		ND		ND		ND		ND		ND	
Sodium	ug/L	46		44		69		70		69		97		28	
Thallium	ug/L	ND		ND		ND		ND		ND		ND		ND	
Vanadium	ug/L	14		56		ND		ND		ND		21		30	
Zinc	ug/L	29		400		59		13		13		ND		150	
PCBs															
Aroclor 1016	ug/L	ND		ND		ND		ND		ND		ND		ND	
Aroclor 1221	ug/L	ND		ND		ND		ND		ND		ND		ND	
Aroclor 1232	ug/L	ND		ND		ND		ND		ND		ND		ND	
Aroclor 1242	ug/L	ND		ND		ND		ND		ND		ND		ND	
Aroclor 1248	ug/L	ND		ND		ND		ND		ND		ND		ND	
Aroclor 1254	ug/L	ND		ND		ND		ND		ND		ND		ND	
Aroclor 1260	ug/L	ND		ND		ND		ND		ND		ND		ND	
Pesticides															
4,4'-DDD	ug/L	ND		ND		ND		ND		ND		ND		ND	
4,4'-DDE	ug/L	ND		ND		ND		ND		ND		ND		ND	
4,4'-DDT	ug/L	ND		ND		ND		ND		ND		ND		ND	
Aldrin	ug/L	ND		ND		ND		ND		ND		ND		ND	
alpha-BHC	ug/L	ND		ND		ND		ND		ND		ND		ND	
alpha-Chlordane	ug/L	ND		ND		ND		ND		ND		ND		ND	
beta-BHC	ug/L	ND		ND		ND		ND		ND		ND		ND	
Chlordane	ug/L	ND		ND		ND		ND		ND		ND		ND	
delta-BHC	ug/L	ND		ND		ND		ND		ND		ND		ND	
Dieldrin	ug/L	ND		ND		ND		ND		ND		ND		ND	
Endosulfan I	ug/L	ND		ND		ND		ND		ND		ND		ND	
Endosulfan II	ug/L	ND		ND		ND		ND		ND		ND		ND	
Endosulfan sulfate	ug/L	ND		ND		ND		ND		ND		ND		ND	
Endrin	ug/L	ND		ND		ND		ND		ND		ND		ND	
Endrin aldehyde	ug/L	ND		ND		ND		ND		ND		ND		ND	
Endrin ketone	ug/L	ND		ND		ND		ND		ND		ND		ND	
gamma-Chlordane	ug/L	ND		ND		ND		ND		ND		ND		ND	
Heptachlor	ug/L	ND		ND		ND		ND		ND		ND		ND	
Heptachlor epoxide	ug/L	ND		ND		ND		ND		ND		ND		ND	
Lindane	ug/L	ND		ND		ND		ND		ND		ND		ND	
Methoxychlor	ug/L	ND		ND		ND		ND		ND		ND		ND	
Toxaphene	ug/L	ND		ND		ND		ND		ND		ND		ND	

TABLE B-13
HISTORICAL ANALYTICAL RESULTS
SURFACE WATER SAMPLES - HACKENSACK RIVER (1996-2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SW-1 08/28/96 Primary		SW-2 08/28/96 Primary		SW-3 08/28/96 Primary		SW-4 08/28/96 Primary		SC-SW-01 01/02/02 Primary		SC-SW-02 01/02/02 Primary		SC-SW-03 01/02/02 Primary		SC-SW-04 01/02/02 Primary	
Volatile Organics																	
1,1,1-Trichloroethane	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
1,1,1,2-Tetrachloroethane	ug/L	5	U	5	U	5	U	5	U	--		--		--		--	
1,1,2,2-Tetrachloroethane	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
1,1,2-Trichloroethane	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	--		--		--		--		ND		ND		ND		ND	
1,1-Dichloro-1-propene	ug/L	5	U	5	U	5	U	5	U	--		--		--		--	
1,1-Dichloroethane	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
1,1-Dichloroethene	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
1-Methylethyl-benzene	ug/L	--		--		--		--		ND		ND		ND		ND	
1,2-Dibromoethane	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
1,2-Dibromo-3-chloropropane	ug/L	5	U	5	U	5	U	5	U	--		--		--		--	
1,2-Dichloroethane	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
1,2-Dichloroethene	ug/L	--		--		--		--		ND		ND		ND		ND	
1,2-Dichloropropane	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
1,2,4-Trimethylbenzene	ug/L	5	U	5	U	5	U	5	U	--		--		--		--	
1,3-Dichloropropane	ug/L	5	U	5	U	5	U	5	U	--		--		--		--	
1,3,5-Trimethylbenzene	ug/L	5	U	5	U	5	U	5	U	--		--		--		--	
2-Butanone	ug/L	--		--		--		--		ND		3	J	3	J	ND	
2-Hexanone	ug/L	--		--		--		--		ND		ND		ND		ND	
2,2-Dichlororopane	ug/L	5	U	5	U	5	U	5	U	--		--		--		--	
4-Methyl-2-pentanone	ug/L	--		--		--		--		ND		ND		ND		ND	
Acetone	ug/L	--		--		--		--		3	J	12	J	3	J	2	J
Benzene	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
Bromobenzene	ug/L	5	U	5	U	5	U	5	U	--		--		--		--	
Bromochloromethane	ug/L	5	U	5	U	5	U	5	U	--		--		--		--	
Bromodichloromethane	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
Bromoform	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
Bromomethane	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
Butylbenzene	ug/L	5	U	5	U	5	U	5	U	--		--		--		--	
Carbon disulfide	ug/L	--		--		--		--		ND		ND		ND		ND	
Carbon tetrachloride	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
Chlorobenzene	ug/L	5	U	5	U	2.52	J	5	U	ND		5	J	4	J	ND	
Chloroethane	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
Chloroform	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
Chloromethane	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
cis-1,2-Dichloroethene	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
cis-1,3-Dichloropropene	ug/L	--		--		--		--		ND		ND		ND		ND	
Cumene	ug/L	5	U	5	U	5	U	5	U	--		--		--		--	
Cyclohexane	ug/L	--		--		--		--		ND		ND		ND		ND	
Dibromochloropropane	ug/L	--		--		--		--		ND		ND		ND		ND	
Dibromochloromethane	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
Dichlorodifluoromethane	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
Dibromomethane	ug/L	5	U	5	U	5	U	5	U	--		--		--		--	
Ethylbenzene	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
m - and p-Xylenes	ug/L	5	U	5	U	5	U	5	U								
Methyl Acetate	ug/L	--		--		--		--		ND		ND		ND		ND	
Methylcyclohexane	ug/L	--		--		--		--		ND		ND		ND		ND	
Methylene chloride	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
Methyltert-butylether	ug/L	--		--		--		--		ND		ND		ND		ND	
n-Propylbenzene	ug/L	5	U	5	U	5	U	5	U	--		--		--		--	
o-Chlorotoluene	ug/L	5	U	5	U	5	U	5	U	--		--		--		--	
o-Xylene	ug/L	5	U	5	U	5	U	5	U	--		--		--		--	
p_Chlorotoluene	ug/L	5	U	5	U	5	U	5	U	--		--		--		--	
p_Cymene	ug/L	5	U	5	U	5	U	5	U	--		--		--		--	
sec-Butylbenzne	ug/L	5	U	5	U	5	U	5	U	--		--		--		--	

TABLE B-13
HISTORICAL ANALYTICAL RESULTS
SURFACE WATER SAMPLES - HACKENSACK RIVER (1996-2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SW-1 08/28/96 Primary		SW-2 08/28/96 Primary		SW-3 08/28/96 Primary		SW-4 08/28/96 Primary		SC-SW-01 01/02/02 Primary		SC-SW-02 01/02/02 Primary		SC-SW-03 01/02/02 Primary		SC-SW-04 01/02/02 Primary	
Styrene	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
tert-Butylbenzene	ug/L	5	U	5	U	5	U	5	U	--		--		--		--	
Tetrachloroethene	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
Toluene	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
trans-1,2-Dichloroethene	ug/L	5	U	5	U	5	U	5	U	--		--		--		--	
trans-1,3-Dichloropropene	ug/L	--		--		--		--		ND		ND		ND		ND	
Trichloroethylene	ug/L	5	U	5	U	5	U	5	U	--		--		--		--	
Trichlorofluoromethane	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
Vinyl chloride	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
Xylene (total)	ug/L	--		--		--		--		ND		ND		ND		ND	
Semivolatile Organics																	
1,2,3-Trichlorobenzene	ug/L	5	U	5	U	5	U	5	U	--		--		--		--	
1,2,4-Trichlorobenzene	ug/L	5	U	ND		ND		1.63	J	ND		12		11		--	
1,2-Dichlorobenzene	ug/L	1.57	J	1.43	J	6.13		3.14	J	ND		3	J	3	J	ND	
1,3-Dichlorobenzene	ug/L	5	U	ND		4.56	J	ND		ND		1	J	1	J	ND	
1,4-Dichlorobenzene	ug/L	1.47	J	1.21	J	6.37		1.8	J	2	J	4	J	4	J	ND	
2,4,5-Trichlorophenol	ug/L	--		--		--		--		ND		ND		ND		ND	
2,4,6-Trichlorophenol	ug/L	--		--		--		--		ND		ND		ND		ND	
2,4-Dichlorophenol	ug/L	--		--		--		--		ND		ND		ND		ND	
2,4-Dimethylphenol	ug/L	--		--		--		--		ND		ND		ND		ND	
2,4-Dinitrophenol	ug/L	--		--		--		--		ND		ND		ND		ND	
2,4-Dinitrotoluene	ug/L	--		--		--		--		ND		ND		ND		ND	
2,6-Dinitrotoluene	ug/L	--		--		--		--		ND		ND		ND		ND	
2-Chloronaphthalene	ug/L	--		--		--		--		ND		ND		ND		ND	
2-Chlorophenol	ug/L	--		--		--		--		ND		ND		ND		ND	
2-Methylnaphthalene	ug/L	--		--		--		--		ND		10		9.7		ND	
2-Methylphenol	ug/L	--		--		--		--		ND		6.2		ND		ND	
2-Nitroaniline	ug/L	--		--		--		--		ND		ND		ND		ND	
2-Nitrophenol	ug/L	--		--		--		--		ND		ND		ND		ND	
3-Nitroaniline	ug/L	--		--		--		--		ND		ND		ND		ND	
4,6-Dinitro-2-methylphenol	ug/L	--		--		--		--		ND		ND		ND		ND	
4-Bromophenylphenyl ether	ug/L	--		--		--		--		ND		ND		ND		ND	
4-Chloroaniline	ug/L	--		--		--		--		ND		ND		ND		ND	
4-Chlorophenyl phenyl ether	ug/L	--		--		--		--		ND		ND		ND		ND	
4-Chloro-3-methylphenol	ug/L	--		--		--		--		ND		ND		ND		ND	
4-Methylphenol	ug/L	--		--		--		--		ND		ND		ND		ND	
4-Nitroaniline	ug/L	--		--		--		--		ND		ND		ND		ND	
4-Nitrophenol	ug/L	--		--		--		--		ND		ND		ND		ND	
Acenaphthene	ug/L	--		--		--		--		1	J	2	J	2	J	ND	
Acenaphthylene	ug/L	--		--		--		--		3	J	ND		ND		ND	
Anthracene	ug/L	--		--		--		--		4	J	ND		ND		ND	
Azobenzene	ug/L	--		--		--		--		ND		ND		ND		ND	
Benzo(a)anthracene	ug/L	--		--		--		--		7.6		ND		ND		ND	
Benzo(a)pyrene	ug/L	--		--		--		--		9.1		ND		ND		ND	
Benzo(b)fluoranthene	ug/L	--		--		--		--		12		ND		ND		ND	
Benzo(ghi)perylene	ug/L	--		--		--		--		6.3		ND		ND		ND	
Benzo(k)fluoranthene	ug/L	--		--		--		--		4.3		ND		ND		ND	
Benzyl alcohol	ug/L	--		--		--		--		ND		ND		ND		ND	
Bis(2-chloroethoxy)methane	ug/L	--		--		--		--		ND		ND		ND		ND	
Bis(2-chloroethyl)ether	ug/L	--		--		--		--		ND		ND		ND		ND	
Bis(2-chloroisopropyl)ether	ug/L	--		--		--		--		ND		ND		ND		ND	
Bis(2-ethylhexyl)phthalate	ug/L	--		--		--		--		11		ND		ND		ND	
Bis(chloromethyl)ether	ug/L	--		--		--		--		ND		ND		ND		ND	
Butyl benzyl phthalate	ug/L	--		--		--		--		ND		ND		ND		ND	
Chrysene	ug/L	--		--		--		--		8.6		ND		ND		ND	
Dibenzo(a,h)anthracene	ug/L	--		--		--		--		ND		ND		ND		ND	

TABLE B-13
HISTORICAL ANALYTICAL RESULTS
SURFACE WATER SAMPLES - HACKENSACK RIVER (1996-2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SW-1 08/28/96 Primary		SW-2 08/28/96 Primary		SW-3 08/28/96 Primary		SW-4 08/28/96 Primary		SC-SW-01 01/02/02 Primary		SC-SW-02 01/02/02 Primary		SC-SW-03 01/02/02 Primary		SC-SW-04 01/02/02 Primary	
Dibenzofuran	ug/L	--		--		--		--		ND		2	J	2	J	ND	
Diethyl phthalate	ug/L	--		--		--		--		ND		ND		ND		ND	
Dimethyl phthalate	ug/L	--		--		--		--		ND		1	J	ND		ND	
Di-n-butyl phthalate	ug/L	--		--		--		--		ND		ND		ND		ND	
Di-n-octyl phthalate	ug/L	--		--		--		--		ND		ND		ND		ND	
Fluoranthene	ug/L	--		--		--		--		16		ND		ND		ND	
Fluorene	ug/L	--		--		--		--		ND		ND		ND		ND	
Hexachlorobenzene	ug/L	--		--		--		--		ND		ND		ND		ND	
Hexachlorobutadiene	ug/L	5	U	5	U	5	U	5	U	ND		ND		ND		ND	
Hexachlorocyclopentadiene	ug/L	--		--		--		--		ND		ND		ND		ND	
Hexachloroethane	ug/L	--		--		--		--		ND		ND		ND		ND	
Indeno(1,2,3-cd)pyrene	ug/L	--		--		--		--		6.5		ND		ND		ND	
Isophorone	ug/L	--		--		--		--		ND		ND		ND		ND	
Naphthalene	ug/L	5	U	5	U	5	U	3.15	J	ND		45		42		ND	
Nitrobenzene	ug/L	--		--		--		--		ND		ND		ND		ND	
N-Nitrosodiphenylamine	ug/L	--		--		--		--		ND		ND		ND		ND	
N-Nitrosodipropylamine	ug/L	--		--		--		--		ND		ND		ND		ND	
Pentachlorophenol	ug/L	--		--		--		--		ND		ND		ND		ND	
Phenanthrene	ug/L	--		--		--		--		5.1		ND		ND		ND	
Phenol	ug/L	--		--		--		--		ND		ND		ND		ND	
Pyrene	ug/L	--		--		--		--		19		ND		ND		ND	
Metals																	
Aluminum	ug/L	--		--		--		--		67000		5500		10000		1200	
Antimony	ug/L	--		--		--		--		15		ND		ND		ND	
Arsenic	ug/L	--		--		--		--		73		ND		ND		ND	
Barium	ug/L	--		--		--		--		390		120		150		58	
Beryllium	ug/L	--		--		--		--		ND		ND		ND		ND	
Cadmium	ug/L	--		--		--		--		9.3		ND		ND		ND	
Calcium	ug/L	--		--		--		--		200		180		190		160	
Chromium (Dissolved)	ug/L	--		--		--		--		--		--		--		--	
Chromium (Total)	ug/L	--		--		--		--		3000		280		390		24	
Chromium (Hexavalent, dissolved)	ug/L	--		--		--		--		--		--		--		--	
Cobalt	ug/L	--		--		--		--		62		ND		8.7		--	
Copper	ug/L	--		--		--		--		460		ND		31		ND	
Iron	ug/L	--		--		--		--		16000		18000		29000		2400	
Lead	ug/L	--		--		--		--		540		ND		29		ND	
Magnesium	ug/L	--		--		--		--		600		250		270		490	
Manganese	ug/L	--		--		--		--		3300		920		1100		310	
Mercury	ug/L	--		--		--		--		8.8		ND		0.49		0.066	
Nickel	ug/L	--		--		--		--		200		17		24		5.7	
Potassium	ug/L	--		--		--		--		180		100		100		150	
Selenium	ug/L	--		--		--		--		ND		ND		ND		ND	
Silver	ug/L	--		--		--		--		8.1		ND		ND		ND	
Sodium	ug/L	--		--		--		--		5000		2100		2300		4000	
Thallium	ug/L	--		--		--		--		ND		ND		ND		ND	
Vanadium	ug/L	--		--		--		--		250		ND		22		ND	
Zinc	ug/L	--		--		--		--		1100		ND		86		ND	
PCBs/Pesticides																	
Aroclor 1016	ug/L	--		--		--		--		ND		ND		ND		ND	
Aroclor 1221	ug/L	--		--		--		--		ND		ND		ND		ND	
Aroclor 1232	ug/L	--		--		--		--		ND		ND		ND		ND	
Aroclor 1242	ug/L	--		--		--		--		ND		ND		ND		ND	
Aroclor 1248	ug/L	--		--		--		--		ND		ND		ND		ND	
Aroclor 1254	ug/L	--		--		--		--		ND		ND		ND		ND	
Aroclor 1260	ug/L	--		--		--		--		ND		ND		ND		ND	
4,4'-DDD	ug/L	--		--		--		--		ND		ND		ND		ND	

TABLE B-13
HISTORICAL ANALYTICAL RESULTS
SURFACE WATER SAMPLES - HACKENSACK RIVER (1996-2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SW-1 08/28/96 Primary		SW-2 08/28/96 Primary		SW-3 08/28/96 Primary		SW-4 08/28/96 Primary		SC-SW-01 01/02/02 Primary		SC-SW-02 01/02/02 Primary		SC-SW-03 01/02/02 Primary		SC-SW-04 01/02/02 Primary	
4,4'-DDE	ug/L	--		--		--		--		ND		ND		ND		ND	
4,4'-DDT	ug/L	--		--		--		--		ND		ND		ND		ND	
Aldrin	ug/L	--		--		--		--		ND		ND		ND		ND	
alpha-BHC	ug/L	--		--		--		--		ND		ND		ND		ND	
alpha-Chlordane	ug/L	--		--		--		--		ND		ND		ND		ND	
beta-BHC	ug/L	--		--		--		--		ND		ND		ND		ND	
Chlordane	ug/L	--		--		--		--		ND		ND		ND		ND	
delta-BHC	ug/L	--		--		--		--		ND		ND		ND		ND	
Dieldrin	ug/L	--		--		--		--		ND		ND		ND		ND	
Endosulfan I	ug/L	--		--		--		--		ND		ND		ND		ND	
Endosulfan II	ug/L	--		--		--		--		ND		ND		ND		ND	
Endosulfan sulfate	ug/L	--		--		--		--		ND		ND		ND		ND	
Endrin	ug/L	--		--		--		--		ND		ND		ND		ND	
Endrin aldehyde	ug/L	--		--		--		--		ND		ND		ND		ND	
Endrin ketone	ug/L	--		--		--		--		ND		ND		ND		ND	
gamma-Chlordane	ug/L	--		--		--		--		ND		ND		ND		ND	
Heptachlor	ug/L	--		--		--		--		ND		ND		ND		ND	
Heptachlor epoxide	ug/L	--		--		--		--		ND		ND		ND		ND	
Lindane	ug/L	--		--		--		--		ND		ND		ND		ND	
Methoxychlor	ug/L	--		--		--		--		ND		ND		ND		ND	
Toxaphene	ug/L	--		--		--		--		ND		ND		ND		ND	

TABLE B-14
HISTORICAL ANALYTICAL RESULTS
LAGOON SOLIDS SAMPLES AND PERIMETER BORING SOIL SAMPLES (1985-1987)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Lagoon Solids Samples

Constituent of Interest	Units	A-1 03/10/87 0.5-1.5 Primary		A-2-SS 03/10/87 1.8-2.2 Primary		B-1 03/10/87 0.4-1.2 Primary		B-2-SS 03/10/87 3.5-4.8 Primary		C-1 02/27/87 0-0.8 Primary		C-1 02/27/87 0-0.8 Duplicate		C-2H-SS 02/27/87 1.2-2.1 Primary		C-2H-SS 02/27/87 1.2-2.1 Duplicate		D-1 02/26/87 0.1-0.9 Primary		D-2-SS 02/26/87 2-2.5 Primary		E-1 02/26/87 0-0.5 Primary		E-2-SS 02/26/87 0.8-1.3 Primary		E-3-SS 02/26/87 1.6-1.9 Primary	
Polychlorinated Dioxins and Furans																											
2,3,7,8-TCDD	ug/Kg	2.6		1.5	U	8.2		0.11	U	19.5		16.3		0.23		0.45	U	0.9	U	0.053	U	0.85		31.9		2.9	

Constituent of Interest	Units	E-4-SS 02/26/87 2-2.3 Primary		EL-1 08/01/85 0-0.5 Primary		EL-1 08/01/85 0-0.5 Duplicate		EL-3 08/01/85 0-0.5 Primary		F-1 02/26/87 0-0.6 Primary		F-4-SS 02/26/87 5-5.5 Primary		G-1 02/26/87 0-0.8 Primary		G-2-SS 02/26/87 1.5-2.5 Primary		H-1 02/26/87 0.2-1.2 Primary		H-2-SS 02/26/87 1.7-2.1 Primary		I-1 02/27/87 0-0.8 Primary		I-1H-NS 02/27/87 0-0.8 Primary		I-2-SS 02/27/87 1.3-1.8 Primary	
Polychlorinated Dioxins and Furans																											
2,3,7,8-TCDD	ug/Kg	1.2		0.1	U	0.1	U	62.1		2.3		4.3		2.8		0.12	U	0.73	U	0.13	U	1.1	U	1.3		3.2	

Constituent of Interest	Units	I-3-SS 02/27/87 2.5-3.5 Primary		I-4-SS 02/27/87 4.5-5.5 Primary		J-1 02/27/87 0.1-1.1 Primary		J-3-SS 02/27/87 2.9-3.9 Primary		J-4-SS 02/27/87 5-5.8 Primary		K-1H 03/12/87 0.1-1.1 Primary		K-2-SS 03/12/87 1.7-2.2 Primary		K-3-SS 03/12/87 2.4-3.1 Primary		K-4-SS 03/12/87 4.6-5.6 Primary		L-1H 03/11/87 0.2-1.2 Primary		LD-1 08/01/85 0-0.5 Primary		M-1 03/12/87 0-0.8 Primary		M-2-SS 03/12/87 1.8-2.4 Primary	
Polychlorinated Dioxins and Furans																											
2,3,7,8-TCDD	ug/Kg	38.4		6.2		11.2		237		148		69.6		2.7		6.1		3.7		0.71		3.1		0.36	U	0.084	U

Constituent of Interest	Units	N-1 03/12/87 0-0.8 Primary		N-1 03/12/87 0-0.8 Duplicate		N-2-SS 03/12/87 1.7-2.0 Primary		O-1 03/13/87 0-1.0 Primary		O-2-SS 03/13/87 1.6-2.3 Primary		P-1 03/13/87 0-0.8 Primary		P-2-SS 03/13/87 1.3-1.8 Primary		Q-1SS-NS 03/11/87 0.3-0.8 Primary		Q-1 03/11/87 0.3-0.8 Primary		Q-1D-SS 03/11/87 0.3-0.8 Primary		Q-2D-SS 03/11/87 2.2-2.6 Primary		R-1 03/17/87 0-0.8 Primary		R-2-SS 03/17/87 2.5-3.2 Primary	
Polychlorinated Dioxins and Furans																											
2,3,7,8-TCDD	ug/Kg	0.62	U	0.49	U	0.18	U	0.33	U	0.028	U	0.6	U	0.11	U	8.2		0.56	U	0.26	U	0.089	U	15.3		62.1	

Constituent of Interest	Units	R-3-SS 03/17/87 4.2-5.0 Primary		R-4-SS 03/17/87 6-6.7 Primary		R-4-SS 03/17/87 6-6.7 Duplicate		S-1-SS 03/16/87 0.3-0.8 Primary		S-2-SS 03/16/87 1.8-2.6 Primary		T-1-SS 03/13/87 0.5-1.5 Primary		T-2-SS 03/13/87 2.5-3.2 Primary		WL-2 08/01/85 0-0.5 Primary		WL-2D 08/01/85 0-0.5 Primary	
Polychlorinated Dioxins and Furans																			
2,3,7,8-TCDD	ug/Kg	190		46		43		0.41	U	0.076	U	0.23	U	0.21	U	55.6		45.2	

Lagoon Perimeter Boring Soil Samples

Constituent of Interest	Units	LP-1A 08/01/85 0-0.5 Primary		LP-1B 08/01/85 1.5-1.7 Primary		LP-2 08/01/85 0.5-WT Primary		LP-3A 08/01/85 0-0.5 Primary		LP-3C 08/01/85 3.5-4 Primary		LP-4A 08/01/85 0-0.5 Primary		LP-4B 08/01/85 6-6.5 Primary		LP-5A 08/01/85 0-0.5 Primary		LP-5D 08/01/85 3.6-4.1 Primary		LP-6A 08/01/85 0-0.5 Primary		LP-6B 08/01/85 0.5-WT Primary		LP-7A 08/01/85 0-0.5 Primary		LP-7B 08/01/85 1.7-2.1 Primary	
Polychlorinated Dioxins and Furans																											
2,3,7,8-TCDD	ug/Kg	0.05	U	0.12	U	0.67	U	0.02	U	0.17	U	0.16	U	0.15	U	0.1	U	0.01	U	0.03	U	0.05	U	0.09	U	0.38	U

TABLE B-15
HISTORICAL ANALYTICAL RESULTS
LAGOON SOLIDS SAMPLES (1991)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	ELS-1 01/01/91 top Primary		ELS-2 01/01/91 bottom Primary		WLS-1 01/01/91 top Primary		WLS-2 01/01/91 bottom Primary	
Volatile Organics									
Benzene	mg/Kg	0.896		23.4		15	U	4.1	U
Chlorobenzene	mg/Kg	0.91	U	9.1	U	20	U	5.6	U
Ethylbenzene	mg/Kg	2.58		43.3		39.6		15.2	
Methylene chloride	mg/Kg	0.438		5.33		21.5		6.09	
Toluene	mg/Kg	3.05		63.1		33.8		15.3	
Semivolatile Organics									
1,2,4-Trichlorobenzene	mg/Kg	5.8	U	290	U	130	U	170	U
1,2-Dichlorobenzene	mg/Kg	22.1		290	U	130	U	170	U
1,3-Dichlorobenzene	mg/Kg	5.8	U	290	U	130	U	170	U
1,4-Dichlorobenzene	mg/Kg	40		660	U	290	U	400	U
2,4-Dimethylphenol	mg/Kg	17600		3490		21900		2770	
Acenaphthene	mg/Kg	529		3650		6070		2090	
Anthracene	mg/Kg	180		290	U	1700		190	
Benzo(a)anthracene	mg/Kg	24	U	1200	U	520	U	720	U
Benzo(b)fluoranthene	mg/Kg	15	U	730	U	320	U	440	U
Fluoranthene	mg/Kg	115		330	U	903		200	U
Fluorene	mg/Kg	587		604		5150		717	
Hexachlorobenzene	mg/Kg	93.5		290	U	130	U	170	U
Naphthalene[1]	mg/Kg	815000		25200000		2040000		300000	
Phenanthrene	mg/Kg	715		820	U	5320		628	
Phenol	mg/Kg	4220		14100		1210		12100	
Pyrene	mg/Kg	32.2		290	U	663		170	U
Metals									
Antimony	mg/Kg	19	U	19		39	U	11	U
Arsenic	mg/Kg	3.1	U	5.1		33	U	9.5	U
Beryllium	mg/Kg	0.31	U	0.3	U	0.66	U	0.19	U
Cadmium	mg/Kg	0.62	U	0.61	U	1.3	U	0.39	
Chromium	mg/Kg	767		2080		200		521	
Copper	mg/Kg	200		64		480		66	
Lead	mg/Kg	570		4270		970		1200	
Mercury	mg/Kg	4.5		3.1		16		0.15	U
Nickel	mg/Kg	91		150		130		41	
Selenium	mg/Kg	7.5	U	7.5	U	3.3	U	0.94	U
Silver	mg/Kg	3.1	U	3	U	6.6	U	1.9	U
Thallium	mg/Kg	16	U	3	U	6.6	U	1.9	U
Zinc	mg/Kg	20		39		13	U	20	
RCRA Characteristics and Indicators									
Cyanide (Reactivity)	mg/Kg	12.58		14.3		58.7		98.7	

1. Naphthalene results as reported by Weston exceed pure product concentration.
   Likely as quantitated by the laboratory by instruments outside linear calibration range.

TABLE B-16
HISTORICAL ANALYTICAL RESULTS
SEDIMENT SAMPLES - SOUTH DITCH (1991 - 2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SC-SED-04 01/02/02 Primary	SC-SED-05 01/02/02 Primary	SC-SED-06 01/02/02 Primary	SC-SED-07 01/02/02 Primary	SC-SED-08 01/02/02 Primary	SC-SED-09 01/02/02 Primary	SC-SED-10 01/03/02 Primary	SC-SED-11 01/03/02 Primary	SC-SED-12 01/03/02 Primary	SC-SED-13 01/03/02 Primary	SC-SED-14 01/03/02 Primary	SC-SED-15 01/03/02 Primary	SC-SED-16 01/03/02 Primary	SC-SED-17 01/03/02 Primary	SC-SED-18 01/03/02 Primary	SC-SED-19 01/03/02 Primary	SC-SED-20 01/03/02 Primary
Volatile Organics																		
1,1,1-Trichloroethane	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1-Methylethyl-benzene	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	mg/Kg	ND	ND	ND	0.86	ND	ND	ND	ND	ND	14	ND	ND	2.2	2	2	250	43
Chloroethane	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloropropane	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Acetate	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylcyclohexane	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyltert-butylether	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene (total)	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Semivolatile Organics																		
1,2,4-Trichlorobenzene	mg/Kg	ND	ND	ND	0.43	1.4	0.32	ND	ND	0.59	2.5	1.3	ND	1.6	ND	0.51	2900	1.7
1,2-Dichlorobenzene	mg/Kg	ND	ND	0.4	0.4	0.93	0.23	ND	ND	1	6.4	3.3	1.6	4.7	0.76	0.87	5300	4.6
1,3-Dichlorobenzene	mg/Kg	ND	ND	0.22	0.2	0.84	0.3	ND	0.32	ND	12	5.5	2.9	9.6	1.2	0.83	3900	9.3
1,4-Dichlorobenzene	mg/Kg	ND	0.38	0.35	0.48	3	0.64	0.24	0.4	0.31	18	8.9	5.1	13	2.2	1.4	6000	21
2,4,5-Trichlorophenol	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dichlorophenol	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrophenol	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorophenol	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

TABLE B-16
HISTORICAL ANALYTICAL RESULTS
SEDIMENT SAMPLES - SOUTH DITCH (1991 - 2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SC-SED-04 01/02/02 Primary		SC-SED-05 01/02/02 Primary	SC-SED-06 01/02/02 Primary	SC-SED-07 01/02/02 Primary	SC-SED-08 01/02/02 Primary	SC-SED-09 01/02/02 Primary	SC-SED-10 01/03/02 Primary	SC-SED-11 01/03/02 Primary	SC-SED-12 01/03/02 Primary	SC-SED-13 01/03/02 Primary	SC-SED-14 01/03/02 Primary	SC-SED-15 01/03/02 Primary	SC-SED-16 01/03/02 Primary	SC-SED-17 01/03/02 Primary	SC-SED-18 01/03/02 Primary	SC-SED-19 01/03/02 Primary	SC-SED-20 01/03/02 Primary
2-Methylnaphthalene	mg/Kg	ND		ND	0.43	ND	1.4	2.2	ND	ND	3.9	0.66	ND	ND	ND	ND	ND	31	ND
2-Methylphenol	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Nitroaniline	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Nitrophenol	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3-Nitroaniline	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,6-Dinitro-2-methylphenol	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Bromophenylphenyl ether	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chloroaniline	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chloro-3-methylphenol	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	mg/Kg	ND		ND	ND	ND	ND	0.29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Nitroaniline	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Nitrophenol	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	mg/Kg	ND		ND	0.23	0.15	2.4	0.7	ND	0.23	0.6	11	1.2	1.3	0.88	ND	ND	ND	ND
Acenaphthylene	mg/Kg	ND		ND	ND	ND	0.52	0.61	ND	ND	ND	1.4	0.87	1.3	0.71	ND	ND	ND	ND
Anthracene	mg/Kg	0.14	J	ND	ND	ND	0.63	1.1	ND	0.33	ND	2.2	1.6	1.7	1.8	ND	ND	ND	ND
Azobenzene	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	mg/Kg	0.49	J	ND	0.5	ND	2	2.5	0.57	0.83	ND	6.4	6.1	4.7	7.6	0.068	1	6.8	0.52
Benzo(a)pyrene	mg/Kg	0.46	J	ND	0.57	ND	2.2	3.2	0.73	0.86	ND	7.6	8.1	5.8	9.3	0.85	1.2	6.4	0.59
Benzo(b)fluoranthene	mg/Kg	0.64		0.45	0.85	0.18	3.2	4.5	0.92	1.1	0.35	11	11	7.8	12	1.2	1.7	11	0.87
Benzo(ghi)perylene	mg/Kg	0.25	J	ND	0.4	ND	1.6	2.3	0.58	0.63	ND	4.5	4.8	3.3	4.7	0.66	0.83	5.3	0.5
Benzo(k)fluoranthene	mg/Kg	0.26	J	ND	0.32	ND	1.2	1.8	0.36	ND	ND	3.2	3.9	3.1	4.5	0.44	0.62	3.7	ND
Benzoic acid	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzyl alcohol	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-chloroethoxy)methane	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-chloroethyl)ether	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-chloroisopropyl)ether	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl)phthalate	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4	2	21	1.3
Butyl benzyl phthalate	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.39	ND	ND	ND
Carbazole	mg/Kg	--		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	mg/Kg	0.64		0.42	0.68	0.14	2.5	3.8	0.8	ND	ND	ND	7.6	6.7	9.6	0.91	1.3	9.2	0.8
Dibenzo(a,h)anthracene	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	8.2	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	mg/Kg	ND		ND	ND	ND	1.6	0.71	ND	ND	ND	3	0.8	ND	0.83	ND	ND	3.3	ND
Diethyl phthalate	mg/Kg	0.34	J	1.3	0.49	0.2	0.21	0.31	0.34	0.31	ND	2.6	2.7	2.8	2.6	ND	ND	ND	ND
Dimethyl phthalate	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-butyl phthalate	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-octyl phthalate	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.77	0.25	ND	0.88
Fluoranthene	mg/Kg	0.87		0.95	0.83	0.18	2.9	3.4	0.82	1.4	0.75	9.8	10	8.8	12	1.9	2	12	1.6
Fluorene	mg/Kg	ND		ND	ND	ND	1	0.29	ND	ND	ND	ND	ND	ND	0.62	ND	ND	ND	ND
Hexachlorobenzene	mg/Kg	ND		ND	ND	ND	0.33	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachloroethane	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	mg/Kg	0.27	J	ND	0.43	ND	1.8	2.5	0.58	0.62	ND	4.8	5.3	3.6	5.5	0.69	0.9	5.1	0.46
Isophorone	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	mg/Kg	ND		1.9	0.52	0.41	4.5	6.3	ND	0.84	3.7	3.4	4.9	2.7	5.7	ND	0.97	23	ND
Nitrobenzene	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodipropylamine	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	mg/Kg	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	mg/Kg	0.23	J	0.66	0.73	0.14	2	1.7	0.33	0.79	1.2	3.3	4.5	4.3	4.9	0.71	0.82	9.6	0.76
Phenol	mg/Kg	ND		ND	ND	ND	ND	0.45	ND	0.31	0.37	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	mg/Kg	0.69		0.94	0.7	0.16	2.8	3.4	0.79	1.5	0.55	9.3	9.8	8.5	11	1.8	1.8	10	1.4
Polychlorinated Dioxins and Furans																			
1,2,3,4,6,7,8-HpCDD	ug/Kg	0.0236		0.206	0.252	0.133	0.231	0.799	0.0461	0.0472	0.0637	0.917	0.902	0.733	0.976	0.201	0.139	0.829	0.0838
1,2,3,4,6,7,8-HpCDF	ug/Kg	0.318		34.1	16.1	24.3	31.4	13.4	3.33	1.9	4.66	52.4	51.4	38.2	20.2	9.51	4.36	27.2	0.568
1,2,3,4,7,8,9-HpCDF	ug/Kg	0.01	J	1	0.486	0.737	0.859	0.378	0.0843	0.0504	0.12	1.54	1.69	1.05	0.548	0.246	0.104	0.617	0.0138

TABLE B-16
HISTORICAL ANALYTICAL RESULTS
SEDIMENT SAMPLES - SOUTH DITCH (1991 - 2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SC-SED-04 01/02/02 Primary		SC-SED-05 01/02/02 Primary		SC-SED-06 01/02/02 Primary		SC-SED-07 01/02/02 Primary		SC-SED-08 01/02/02 Primary		SC-SED-09 01/02/02 Primary		SC-SED-10 01/03/02 Primary		SC-SED-11 01/03/02 Primary		SC-SED-12 01/03/02 Primary		SC-SED-13 01/03/02 Primary		SC-SED-14 01/03/02 Primary		SC-SED-15 01/03/02 Primary		SC-SED-16 01/03/02 Primary		SC-SED-17 01/03/02 Primary		SC-SED-18 01/03/02 Primary		SC-SED-19 01/03/02 Primary		SC-SED-20 01/03/02 Primary	
1,2,3,4,7,8-HxCDD	ug/Kg	0.00107		0.0246		0.0121		0.0144		0.0191		0.0143		0.00308		0.00193		0.00328		0.0701		0.0573		0.0462		0.0413		0.012		0.00766		0.0435		0.00459	
1,2,3,4,7,8-HxCDF	ug/Kg	0.0997		9.85		4.88		7.65		9.09		4.33		0.952		0.587		1.35		18.5		17.8		12.1		5.11		2.43		1.19		7.24		0.178	
1,2,3,6,7,8-HxCDD	ug/Kg	0.00274		0.0498		0.0413		0.0483		0.0555		0.0396		0.00722		0.00443		0.00822		0.152		0.157		0.119		0.11		0.0285		0.016		0.107		0.00506	
1,2,3,6,7,8-HxCDF	ug/Kg	0.0143		1.45		0.634		0.993		1.08		0.604		0.13		0.102		0.206		2.67		2.67		1.98		0.947		0.392		0.191		1.34		0.0311	
1,2,3,7,8,9-HxCDD	ug/Kg	0.0018		0.0238		0.0195		0.02		0.0252		0.0203		0.00242		0.00479		0.00505		0.0583		0.0989		0.0722		0.0973		0.0283		0.014		0.084		0.00496	
1,2,3,7,8-PCDD	ug/Kg	0.000848		0.0237		0.0183		0.0103		0.0155		0.00986		0.00198		0.00193		0.00171		0.0589		0.0552		0.0434		0.0589		0.0158		0.00696		0.0467		ND	U
1,2,3,7,8-PCDF	ug/Kg	0.0024		0.104		0.0768		0.0953		0.116		0.0848		0.0165		0.0189		0.0269		0.397		0.525		0.334		0.234		0.0948		0.0391		0.186		0.00743	
2,3,4,6,7,8-HxCDF	ug/Kg	0.00521	J	0.605		0.291		0.505		0.613		0.283		0.0633		0.0578		0.101		1.26		0.859		0.748		0.537		0.188		0.0805		0.73		0.0185	
2,3,4,7,8-PCDF	ug/Kg	0.00989	J	0.647		0.46		0.557		0.641		0.364		0.0817		0.0627		0.108		1.43		1.43		1.01		0.668		0.221		0.116		0.582		0.0161	
2,3,7,8-TCDD	ug/Kg	0.00786		0.0146		0.00633		0.00499		ND		0.0051		0.00695		0.00153		0.00201		0.0964		0.081		0.0917		0.05		0.00883		0.00612		0.0851		ND	
2,3,7,8-TCDF	ug/Kg	0.0138		0.307		0.361		0.377		0.389		0.2		0.0492		0.0413		0.0474		1.14		1.42		0.911		0.668		0.153		0.0726		0.594		0.0152	
OCDD	ug/Kg	0.257		1.63		2.17		1.38		2.3		13.7		0.517		0.395		0.394		9.55		9.75		0.96		10		1.81		1.25		9.55		1.08	
OCDF	ug/Kg	0.487		65.3		24.3		38.1		47.9		21		5.68		2.91		6.17		74.5		79.7		66.6		26		13.3		5.33		28		0.825	
Total HpCDD	ug/Kg	0.057		ND		ND		ND		ND		ND		ND		ND		ND		ND		0.0512		0.0431		0.0252		0.00982		0.00466		0.0183		ND	
Total HpCDF	ug/Kg	0.357		38.6		18.5		28.1		35.7		15.3		3.67		2.27		5.37		59.4		58.5		42.8		22.9		10.7		4.82		30.5		0.634	
Total HxCDD	ug/Kg	0.0132		0.178		0.26		0.16		0.385		0.148		0.038		0.0317		0.037		1.2		1.27		0.757		0.952		0.207		0.0956		1.02		0.0653	
Total HxCDF	ug/Kg	0.204		18		9.74		15.6		17.9		8.81		2.01		1.15		2.87		37.9		36.9		24.7		11.8		5.16		2.52		17.3		0.383	
Total PeCDD	ug/Kg	0.0116		0.156		0.161		0.0749		0.193		0.1		0.0103		0.00581		0.0118		0.576		0.525		0.45		0.621		0.135		ND		0.508		0.0181	
Total PeCDF	ug/Kg	0.0864		5.06		3.99		5.63		6.14		3.19		0.733		0.48		1		17.3		19.3		11.5		8.53		2.29		1.18		8.27		0.16	
Polychlorinated Biphenyls (Aroclors)																																			
Aroclor 1016	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Aroclor 1221	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Aroclor 1232	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Aroclor 1242	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Aroclor 1248	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Aroclor 1254	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		1.9		ND		ND		0.24		ND		ND		0.71		ND	
Aroclor 1260	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Total PCBs	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		1.9		ND		ND		0.24		ND		ND		0.71		ND	
Pesticides/Herbicides																																			
4,4'-DDD	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
4,4'-DDE	mg/Kg	ND		ND		ND		ND		0.006		0.008		ND		ND		ND		0.03		ND		ND		ND		ND		ND		ND		ND	
4,4'-DDT	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		0.04		ND		ND		ND		ND		ND	
Aldrin	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
alpha-BHC	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
alpha-Chlordane	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
beta-BHC	mg/Kg	ND		0.021		ND		ND		ND		ND		ND		ND		ND		0.073		ND		ND		ND		0.031		0.015		ND		0.013	
Chlordane	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
delta-BHC	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dieldrin	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		0.067		0.064		ND		ND		ND		ND		ND	
Endosulfan I	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Endosulfan II	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Endosulfan sulfate	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Endrin	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		0.089		ND		ND		ND		ND		ND	
Endrin aldehyde	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Endrin ketone	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		0.037		ND	
gamma-Chlordane	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Heptachlor	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Heptachlor epoxide	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		0.022		ND		ND		ND		ND		ND		ND	
Lindane	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Methoxychlor	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Toxaphene	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Metals																																			
Aluminum	mg/Kg	12000		4700		1000		11000		4100		5300		19000		1500		1600		12000		12000		12000		13000		2800		2500		19000		8300	
Antimony	mg/Kg	20		4.4		4.2		4.6		9.5		11		57		8.6		8.9		38		37		45		170		18		12		55		18	
Arsenic	mg/Kg	21		9.3		4.4		2.7		6.2		2.5		2.4		1.6		1.1		17		20		18		24		4.7		3.2		24		3	
Barium	mg/Kg	58		190		160		62		210		260		110		300		180		15		18		35		13		130		380		63		200	
Beryllium	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		0.6		0.72		0.61		0.76		ND		ND		0.68		ND	U

TABLE B-16
HISTORICAL ANALYTICAL RESULTS
SEDIMENT SAMPLES - SOUTH DITCH (1991 - 2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SC-SED-04 01/02/02 Primary	SC-SED-05 01/02/02 Primary	SC-SED-06 01/02/02 Primary	SC-SED-07 01/02/02 Primary	SC-SED-08 01/02/02 Primary	SC-SED-09 01/02/02 Primary	SC-SED-10 01/03/02 Primary	SC-SED-11 01/03/02 Primary	SC-SED-12 01/03/02 Primary	SC-SED-13 01/03/02 Primary	SC-SED-14 01/03/02 Primary	SC-SED-15 01/03/02 Primary	SC-SED-16 01/03/02 Primary	SC-SED-17 01/03/02 Primary	SC-SED-18 01/03/02 Primary	SC-SED-19 01/03/02 Primary	SC-SED-20 01/03/02 Primary
Cadmium	mg/Kg	0.65	0.83	ND	0.46	0.43	ND	0.47	ND	ND	5	4.5	4.5	5.5	2.2	1.3	3.3	0.79
Calcium	mg/Kg	29000	210000	280000	59000	240000	220000	210000	310000	63000	53000	14000	20000	14000	260000	280000	7500	260000
Chromium	mg/Kg	3800	790	740	790	1600	2000	11000	1400	1500	5300	5100	7400	3800	1900	1600	5100	3700
Cobalt	mg/Kg	71	4.9	2.9	26	22	32	64	3.9	1.7	19	18	17	15	8	4.4	22	3.3
Copper	mg/Kg	17	26	9.3	130	73	74	12	16	11	170	250	250	320	54	34	210	25
Iron	mg/Kg	52000	42000	2400	23000	14000	22000	35000	5400	4100	57000	81000	65000	62000	24000	12000	77000	30000
Lead	mg/Kg	48	38	59	26	200	540	110	880	430	10000	3700	5200	30000	4400	3600	13000	330
Magnesium	mg/Kg	21000	18000	20000	13000	10000	25000	40000	12000	15000	6000	3800	4700	3400	7200	7400	4600	9500
Manganese	mg/Kg	740	1300	180	240	370	600	570	780	660	520	590	450	420	1900	1500	220	930
Mercury	mg/Kg	0.25	0.46	0.51	5.1	4.3	24	0.22	0.14	0.088	0.016	0.022	0.091	0.023	0.21	0.21	0.028	0.067
Nickel	mg/Kg	260	17	30	650	310	170	360	24	7.2	99	91	81	76	29	14	100	11
Potassium	mg/Kg	470	990	ND	520	210	300	ND	110	ND	750	1100	1200	840	240	180	780	270
Selenium	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.8	2.3	2.2	2.3	ND	ND	1.1	ND
Silver	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.5	2.2	2.7	2.2	ND	ND	1.4	ND
Sodium	mg/Kg	2300	13000	860	1700	1400	740	560	1600	1000	1500	960	990	850	1500	1300	350	2300
Thallium	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.4	2.2	2.4	3.2	ND	ND	ND	ND
Vanadium	mg/Kg	720	37	30	100	150	310	280	21	15	200	200	240	210	76	41	320	86
Zinc	mg/Kg	210	92	56	160	140	120	110	71	71	1500	900	830	1600	1200	870	1000	100
RCRA Characteristics and Indicators																		
Corrosivity (pH)	SU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide (Reactivity)	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Organic Carbon	mg/Kg	5500	29000	15000	25000	27000	18000	11000	14000	12000	130000	120000	170000	120000	28000	16000	100000	14000

TABLE B-16
HISTORICAL ANALYTICAL RESULTS
SEDIMENT SAMPLES - SOUTH DITCH (1991 - 2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SC-SED-21 01/03/02 Primary		SSW-SED-1 01/01/91 Primary		SSW-SED-2 01/01/91 Primary		SSW-SED-3 01/01/91 Primary		SSW-SED-4 01/01/91 Primary		SSW-SED-5 01/01/91 Primary		SSW-SED-6 01/01/91 Primary	
Volatile Organics															
1,1,1-Trichloroethane	mg/Kg	ND		--		--		--		--		--		--	
1,1,2,2-Tetrachloroethane	mg/Kg	ND		--		--		--		--		--		--	
1,1,2-Trichloroethane	mg/Kg	ND		--		--		--		--		--		--	
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg	ND		--		--		--		--		--		--	
1,1-Dichloroethane	mg/Kg	ND		--		--		--		--		--		--	
1,1-Dichloroethene	mg/Kg	ND		--		--		--		--		--		--	
1-Methylethyl-benzene	mg/Kg	ND		--		--		--		--		--		--	
1,2-Dibromoethane	mg/Kg	ND		--		--		--		--		--		--	
1,2-Dichloroethane	mg/Kg	ND		--		--		--		--		--		--	
1,2-Dichloroethene	mg/Kg	ND		--		--		--		--		--		--	
1,2-Dichloropropane	mg/Kg	ND		--		--		--		--		--		--	
2-Butanone	mg/Kg	ND		--		--		--		--		--		--	
2-Hexanone	mg/Kg	ND		--		--		--		--		--		--	
4-Methyl-2-pentanone	mg/Kg	ND		--		--		--		--		--		--	
Acetone	mg/Kg	ND		--		--		--		--		--		--	
Benzene	mg/Kg	ND		0.0149		0.016	U	8.1	U	18	U	1.5	U	0.005	
Bromodichloromethane	mg/Kg	ND		--		--		--		--		--		--	
Bromoform	mg/Kg	ND		--		--		--		--		--		--	
Bromomethane	mg/Kg	ND		--		--		--		--		--		--	
Carbon disulfide	mg/Kg	ND		--		--		--		--		--		--	
Carbon tetrachloride	mg/Kg	ND		--		--		--		--		--		--	
Chlorobenzene	mg/Kg	41		1.484		0.0385		42.1		140		9.64		0.87	
Chloroethane	mg/Kg	ND		--		--		--		--		--		--	
Chloroform	mg/Kg	ND		--		--		--		--		--		--	
Chloromethane	mg/Kg	ND		--		--		--		--		--		--	
cis-1,2-Dichloroethene	mg/Kg	ND		--		--		--		--		--		--	
cis-1,3-Dichloropropene	mg/Kg	ND		--		--		--		--		--		--	
Cyclohexane	mg/Kg	ND		--		--		--		--		--		--	
Dibromochloropropane	mg/Kg	ND		--		--		--		--		--		--	
Dibromochloromethane	mg/Kg	ND		--		--		--		--		--		--	
Dichlorodifluoromethane	mg/Kg	ND		--		--		--		--		--		--	
Ethylbenzene	mg/Kg	ND		0.021	U	0.026	U	13	U	29	U	2.4	U	0.045	
Methyl Acetate	mg/Kg	ND		--		--		--		--		--		--	
Methylcyclohexane	mg/Kg	ND		--		--		--		--		--		--	
Methylene chloride	mg/Kg	ND		0.0136		0.01	U	5.2	U	15		1.36		0.023	
Methyltert-butylether	mg/Kg	ND		--		--		--		--		--		--	
Styrene	mg/Kg	ND		--		--		--		--		--		--	
Tetrachloroethene	mg/Kg	ND		--		--		--		--		--		--	
Toluene	mg/Kg	ND		0.018	U	0.021	U	11	U	24	U	2	U	0.011	
Trichlorofluoromethane	mg/Kg	ND		--		--		--		--		--		--	
Vinyl chloride	mg/Kg	ND		--		--		--		--		--		--	
Xylene (total)	mg/Kg	ND		--		--		--		--		--		0.049	
Semivolatile Organics															
1,2,4-Trichlorobenzene	mg/Kg	25		5.6	U	0.68	U	190		257		13	U	0.59	
1,2-Dichlorobenzene	mg/Kg	32		5.6	U	0.68	U	723		1070		13.3		1.1	
1,3-Dichlorobenzene	mg/Kg	64		5.6	U	0.68	U	593		1010		35.2		0.8	
1,4-Dichlorobenzene	mg/Kg	240		13	U	1.6	U	637		1170		48.5		1.9	
2,4,5-Trichlorophenol	mg/Kg	ND		--		--		--		--		--		--	
2,4,6-Trichlorophenol	mg/Kg	ND		--		--		--		--		--		--	
2,4-Dichlorophenol	mg/Kg	ND		--		--		--		--		--		--	
2,4-Dimethylphenol	mg/Kg	ND		7.9	U	0.96	U	10	U	11	U	18	U	0.43	U
2,4-Dinitrophenol	mg/Kg	ND		--		--		--		--		--		--	
2,4-Dinitrotoluene	mg/Kg	ND		--		--		--		--		--		--	
2,6-Dinitrotoluene	mg/Kg	ND		--		--		--		--		--		--	
2-Chloronaphthalene	mg/Kg	ND		--		--		--		--		--		--	
2-Chlorophenol	mg/Kg	ND		--		--		--		--		--		--	

TABLE B-16
HISTORICAL ANALYTICAL RESULTS
SEDIMENT SAMPLES - SOUTH DITCH (1991 - 2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SC-SED-21 01/03/02 Primary		SSW-SED-1 01/01/91 Primary		SSW-SED-2 01/01/91 Primary		SSW-SED-3 01/01/91 Primary		SSW-SED-4 01/01/91 Primary		SSW-SED-5 01/01/91 Primary		SSW-SED-6 01/01/91 Primary	
2-Methylnaphthalene	mg/Kg	ND		--		--		--		--		--		1.6	
2-Methylphenol	mg/Kg	ND		--		--		--		--		--		0.43	U
2-Nitroaniline	mg/Kg	ND		--		--		--		--		--		--	
2-Nitrophenol	mg/Kg	ND		--		--		--		--		--		--	
3-Nitroaniline	mg/Kg	ND		--		--		--		--		--		--	
4,6-Dinitro-2-methylphenol	mg/Kg	ND		--		--		--		--		--		--	
4-Bromophenylphenyl ether	mg/Kg	ND		--		--		--		--		--		--	
4-Chloroaniline	mg/Kg	ND		--		--		--		--		--		--	
4-Chlorophenyl phenyl ether	mg/Kg	ND		--		--		--		--		--		--	
4-Chloro-3-methylphenol	mg/Kg	ND		--		--		--		--		--		--	
4-Methylphenol	mg/Kg	ND		--		--		--		--		--		--	
4-Nitroaniline	mg/Kg	ND		--		--		--		--		--		--	
4-Nitrophenol	mg/Kg	ND		--		--		--		--		--		--	
Acenaphthene	mg/Kg	ND		5.6	U	0.68	U	7.86		7.6	U	13	U	2.3	
Acenaphthylene	mg/Kg	ND		--		--				--		--		--	
Anthracene	mg/Kg	1.8		5.6	U	0.68	U	7	U	7.6	U	13	U	0.5	
Azobenzene	mg/Kg	ND		--		--		--		--		--		--	
Benzo(a)anthracene	mg/Kg	9.7		23	U	2.8	U	29	U	31	U	52	U	1.1	
Benzo(a)pyrene	mg/Kg	6.7		7.3	U	0.89	U	37.7		27.9		17	U	1.2	
Benzo(b)fluoranthene	mg/Kg	ND		14	U	1.7	U	37.7		44.6		32	U	2.4	
Benzo(ghi)perylene	mg/Kg	ND		12	U	1.5	U	36.2		23.9		27	U	1.2	
Benzo(k)fluoranthene	mg/Kg	4.3		--		--		--		--		--		--	
Benzoic acid	mg/Kg	ND		--		--		--		--		--		--	
Benzyl alcohol	mg/Kg	ND		--		--		--		--		--		--	
Bis(2-chloroethoxy)methane	mg/Kg	ND		--		--		--		--		--		--	
Bis(2-chloroethyl)ether	mg/Kg	ND		--		--		--		--		--		--	
Bis(2-chloroisopropyl)ether	mg/Kg	ND		--		--		--		--		--		--	
Bis(2-ethylhexyl)phthalate	mg/Kg	1.5		29	U	3.6	U	37	U	65.5		188		0.43	U
Butyl benzyl phthalate	mg/Kg	ND		--		--		--		--		--		--	
Carbazole	mg/Kg	--		--		--		--		--		--		0.22	
Chrysene	mg/Kg	11		7.3	U	1.1		28		33.6		17	U	1.2	
Dibenzo(a,h)anthracene	mg/Kg	ND		--		--		--		--				--	
Dibenzofuran	mg/Kg	ND		--		--		--		--				1	
Diethyl phthalate	mg/Kg	ND		--		--		--		--				--	
Dimethyl phthalate	mg/Kg	ND		--		--		--		--				--	
Di-n-butyl phthalate	mg/Kg	ND		29	U	3.6	U	37	U	40	U	67	U	0.17	
Di-n-octyl phthalate	mg/Kg	ND		--		--		--		--		--		--	
Fluoranthene	mg/Kg	12		6.4	U	3.95		31.5		487		15	U	2.1	
Fluorene	mg/Kg	ND		5.6	U	0.68	U	7	U	7.6	U	13	U	1	
Hexachlorobenzene	mg/Kg	ND		--		--		--		--		--		--	
Hexachlorobutadiene	mg/Kg	ND		--		--		--		--		--		--	
Hexachlorocyclopentadiene	mg/Kg	ND		--		--		--		--		--		--	
Hexachloroethane	mg/Kg	ND		--		--		--		--		--		--	
Indeno(1,2,3-cd)pyrene	mg/Kg	ND		11	U	1.3	U	48.3		27.8		25	U	1.5	
Isophorone	mg/Kg	ND		--		--		--		--		--		--	
Naphthalene	mg/Kg	1.1		4.7	U	0.879		234		8.8		11	U	3.4	
Nitrobenzene	mg/Kg	ND		--		--		--		--		--		--	
N-Nitrosodiphenylamine	mg/Kg	ND		--		--		--		--		--		--	
N-Nitrosodipropylamine	mg/Kg	ND		--		--		--		--		--		--	
Pentachlorophenol	mg/Kg	ND		--		--		--		--		--		--	
Phenanthrene	mg/Kg	4.5		16	U	4.88		23.5		47.4		36	U	1.8	
Phenol	mg/Kg	ND		4.4	U	0.53	U	5	U	6	U	10	U	0.43	U
Pyrene	mg/Kg	11		5.6	U	3.35		28.5		41.8		13	U	1.7	
Polychlorinated Dioxins and Furans															
1,2,3,4,6,7,8-HpCDD	ug/Kg	0.459		--		--		--		--		--		--	
1,2,3,4,6,7,8-HpCDF	ug/Kg	28.8		--		--		--		--		--		--	
1,2,3,4,7,8,9-HpCDF	ug/Kg	0.79		--		--		--		--		--		--	

TABLE B-16
HISTORICAL ANALYTICAL RESULTS
SEDIMENT SAMPLES - SOUTH DITCH (1991 - 2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SC-SED-21 01/03/02 Primary		SSW-SED-1 01/01/91 Primary		SSW-SED-2 01/01/91 Primary		SSW-SED-3 01/01/91 Primary		SSW-SED-4 01/01/91 Primary		SSW-SED-5 01/01/91 Primary		SSW-SED-6 01/01/91 Primary	
1,2,3,4,7,8-HxCDD	ug/Kg	0.0298		--		--		--		--		--		--	
1,2,3,4,7,8-HxCDF	ug/Kg	6.7		--		--		--		--		--		--	
1,2,3,6,7,8-HxCDD	ug/Kg	0.0724		--		--		--		--		--		--	
1,2,3,6,7,8-HxCDF	ug/Kg	1.17		--		--		--		--		--		--	
1,2,3,7,8,9-HxCDD	ug/Kg	0.0469		--		--		--		--		--		--	
1,2,3,7,8-PCDD	ug/Kg	0.0319		--		--		--		--		--		--	
1,2,3,7,8-PCDF	ug/Kg	0.154		--		--		--		--		--		--	
2,3,4,6,7,8-HxCDF	ug/Kg	0.64		--		--		--		--		--		--	
2,3,4,7,8-PCDF	ug/Kg	0.517		--		--		--		--		--		--	
2,3,7,8-TCDD	ug/Kg	0.0217		--		--		--		--		--		--	
2,3,7,8-TCDF	ug/Kg	0.414		--		--		--		--		--		--	
OCDD	ug/Kg	4.47		--		--		--		--		--		--	
OCDF	ug/Kg	44		--		--		--		--		--		--	
Total HpCDD	ug/Kg	ND		--		--		--		--		--		--	
Total HpCDF	ug/Kg	32.9		--		--		--		--		--		--	
Total HxCDD	ug/Kg	0.647		--		--		--		--		--		--	
Total HxCDF	ug/Kg	16.2		--		--		--		--		--		--	
Total PeCDD	ug/Kg	0.455		--		--		--		--		--		--	
Total PeCDF	ug/Kg	5.33		--		--		--		--		--		--	
Polychlorinated Biphenyls (Aroclors)															
Aroclor 1016	mg/Kg	ND		--		--		--		--		--		--	
Aroclor 1221	mg/Kg	ND		--		--		--		--		--		--	
Aroclor 1232	mg/Kg	ND		--		--		--		--		--		--	
Aroclor 1242	mg/Kg	ND		--		--		--		--		--		--	
Aroclor 1248	mg/Kg	ND		--		--		--		--		--		--	
Aroclor 1254	mg/Kg	ND		--		--		--		--		--		--	
Aroclor 1260	mg/Kg	ND		--		--		--		--		--		--	
Total PCBs	mg/Kg	ND		--		--		--		--		--		--	
Pesticides/Herbicides															
4,4'-DDD	mg/Kg	ND		--		--		--		--		--		--	
4,4'-DDE	mg/Kg	0.028		--		--		--		--		--		--	
4,4'-DDT	mg/Kg	ND		--		--		--		--		--		--	
Aldrin	mg/Kg	ND		--		--		--		--		--		--	
alpha-BHC	mg/Kg	ND		--		--		--		--		--		--	
alpha-Chlordane	mg/Kg	ND		--		--		--		--		--		--	
beta-BHC	mg/Kg	ND		--		--		--		--		--		--	
Chlordane	mg/Kg	ND		--		--		--		--		--		--	
delta-BHC	mg/Kg	ND		--		--		--		--		--		--	
Dieldrin	mg/Kg	ND		--		--		--		--		--		--	
Endosulfan I	mg/Kg	ND		--		--		--		--		--		--	
Endosulfan II	mg/Kg	ND		--		--		--		--		--		--	
Endosulfan sulfate	mg/Kg	ND		--		--		--		--		--		--	
Endrin	mg/Kg	ND		--		--		--		--		--		--	
Endrin aldehyde	mg/Kg	ND		--		--		--		--		--		--	
Endrin ketone	mg/Kg	ND		--		--		--		--		--		--	
gamma-Chlordane	mg/Kg	ND		--		--		--		--		--		--	
Heptachlor	mg/Kg	ND		--		--		--		--		--		--	
Heptachlor epoxide	mg/Kg	ND		--		--		--		--		--		--	
Lindane	mg/Kg	ND		--		--		--		--		--		--	
Methoxychlor	mg/Kg	ND		--		--		--		--		--		--	
Toxaphene	mg/Kg	ND		--		--		--		--		--		--	
Metals															
Aluminum	mg/Kg	11000		--		--		--		--		--		--	
Antimony	mg/Kg	68		0.1		0.04		0.13		0.091		0.12		0.0207	
Arsenic	mg/Kg	25		0.011		0.0036	U	0.014		0.02		0.021		0.0296	
Barium	mg/Kg	320		--		--		--		--		--		--	
Beryllium	mg/Kg	0.55		0.00078		0.00051		0.0014		0.0004	U	0.0015		0.0004	U

TABLE B-16
HISTORICAL ANALYTICAL RESULTS
SEDIMENT SAMPLES - SOUTH DITCH (1991 - 2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SC-SED-21 01/03/02 Primary		SSW-SED-1 01/01/91 Primary		SSW-SED-2 01/01/91 Primary		SSW-SED-3 01/01/91 Primary		SSW-SED-4 01/01/91 Primary		SSW-SED-5 01/01/91 Primary		SSW-SED-6 01/01/91 Primary	
Cadmium	mg/Kg	2.6		0.0048		0.0045		0.0081		0.00081	U	0.012		0.00682	
Calcium	mg/Kg	6800		--		--		--		--		--		--	
Chromium	mg/Kg	2100		12.7		5.56		16.4		0.93		12.6		1.09	
Cobalt	mg/Kg	8.9		--		--		--		--		--		--	
Copper	mg/Kg	320		0.073		0.025		0.17		0.22		0.25		0.401	
Iron	mg/Kg	42000		--		--		--		--		--		--	
Lead	mg/Kg	3500		0.14		0.07		1.2		15.5		5.3		0.156	
Magnesium	mg/Kg	4800		--		--		--		--		--		--	
Manganese	mg/Kg	120		--		--		--		--		--		--	
Mercury	mg/Kg	0.47		0.0013		0.0012		0.0012		0.00098		0.0036		0.0245	
Nickel	mg/Kg	37		0.099		0.065		0.19		0.049		0.11		0.718	
Potassium	mg/Kg	820		--		--		--		--		--		--	
Selenium	mg/Kg	2.4		0.0015	U	0.0018	U	0.0059	U	0.002	U	0.0034	U	0.002	U
Silver	mg/Kg	0.9		0.0042		0.0051		0.006		0.004	U	0.0069	U	0.004	U
Sodium	mg/Kg	570		--		--		--		--		--		--	
Thallium	mg/Kg	ND		0.0029	U	0.0036	U	0.0037	U	0.004	U	0.0069	U	0.004	U
Vanadium	mg/Kg	140		--		--		--		--		--		--	
Zinc	mg/Kg	570		0.29		0.17		0.64		0.12		1.85		0.298	
RCRA Characteristics and Indicators															
Corrosivity (pH)	SU	--		--		--		--		--		--		--	
Cyanide (Reactivity)	mg/Kg	--		0.0015	U	0.00386		0.00548		0.002	U	0.01033		0.0015	
Total Organic Carbon	mg/Kg	160000				--		--		--		--			

TABLE B-17
HISTORICAL ANALYTICAL RESULTS - SEDIMENT SAMPLES (1991)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	S-1 01/01/910 Primary		S-2 01/01/910 Primary	
Volatile Organics					
Benzene	mg/Kg	0.016	U	0.0584	
Chlorobenzene	mg/Kg	0.021	U	1.95	
Ethylbenzene	mg/Kg	0.026	U	0.095	U
Methylene chloride	mg/Kg	0.01	U	0.0611	
Toluene	mg/Kg	0.021	U	0.079	U
Semivolatile Organics					
1,2,4-Trichlorobenzene	mg/Kg	0.776		60.2	
1,2-Dichlorobenzene	mg/Kg	0.68	U	125	
1,3-Dichlorobenzene	mg/Kg	1.47		109	
1,4-Dichlorobenzene	mg/Kg	2.09		202	
2,4-Dimethylphenol	mg/Kg	0.96	U	3.5	U
Acenaphthene	mg/Kg	0.68	U	2.5	U
Anthracene	mg/Kg	0.68	U	2.5	U
Benzo(a)anthracene	mg/Kg	2.8	U	10	U
Benzo(a)pyrene	mg/Kg	0.89	U	3.3	U
Benzo(b)fluoranthene	mg/Kg	1.7	U	6.3	U
Benzo(ghi)perylene	mg/Kg	1.5	U	5.3	U
Bis(2-ethylhexyl)phthalate	mg/Kg	17.8		13	U
Chrysene	mg/Kg	0.89	U	3.3	U
Di-n-butyl phthalate	mg/Kg	8.6	U	13	U
Fluoranthene	mg/Kg	0.78	U	2.9	U
Fluorene	mg/Kg	0.68	U	2.5	U
Indeno(1,2,3-cd)pyrene	mg/Kg	1.3	U	4.8	U
Naphthalene	mg/Kg	0.57	U	2.1	U
Phenanthrene	mg/Kg	1.9	U	7	U
Phenol	mg/Kg	0.53	U	2	U
Pyrene	mg/Kg	0.68	U	2.5	U
Metals					
Antimony	mg/Kg	0.026		0.0079	U
Arsenic	mg/Kg	0.0052		0.0084	
Beryllium	mg/Kg	0.00036	U	0.00025	
Cadmium	mg/Kg	0.0021		0.0018	
Chromium	mg/Kg	3.44		0.1	
Copper	mg/Kg	0.04		0.066	
Lead	mg/Kg	0.051		0.39	
Mercury	mg/Kg	0.00083		0.00019	
Nickel	mg/Kg	0.014		0.024	
Selenium	mg/Kg	0.0018	U	0.00066	U
Silver	mg/Kg	0.0036	U	0.0013	U
Thallium	mg/Kg	0.0036	U	0.0013	U
Zinc	mg/Kg	0.098		0.738	
RCRA Characteristics and Indicators					
Cyanide (Reactivity)	mg/Kg	0.0018	U	0.00066	U

TABLE B-18
HISTORICAL ANALYTICAL RESULTS
SEDIMENT SAMPLES - HACKENSACK RIVER (1996-2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SED-A1 08/29/96 0-1 Primary		SED-A2 08/29/96 0-1 Primary		SED-A3 08/29/96 0-1 Primary		SED-A4 08/29/96 0-1 Primary		SED-B1 08/29/96 0-1 Primary		SED-B2 08/29/96 0-1 Primary		SED-B3 08/29/96 0-1 Primary		SED-C1 08/29/96 0-1 Primary		TPS-A1-1 01/17/00 1 Primary		TPS-A1-5 01/19/00 5 Primary		TPS-A1-10 01/19/00 10 Primary		TPS-A2-1 01/17/00 1 Primary		TPS-A2-5 01/17/00 5 Primary		TPS-A2-10 01/19/00 10 Primary		TPS-A3-1 01/17/00 1 Primary	
Volatile Organics																															
1,1,1-Trichloroethane	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
1,1,1,2-Tetrachloroethane	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
1,1,2,2-Tetrachloroethane	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
1,1,2-Trichloroethane	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
1,1-Dichloro-1-propene	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
1,1-Dichloroethane	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
1,1-Dichloroethene	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
1-Methylethyl-benzene	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
1,2-Dibromoethane	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
1,2-Dibromoethane	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
1,2-Dibromo-3-chloropropane	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
1,2-Dichloroethane	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
1,2-Dichloroethene	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
1,2-Dichloropropane	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
1,2,4-Trimethylbenzene	mg/Kg	0.0094	U	0.00451	J	0.0404		0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
1,3-Dichloropropane	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
1,3,5-Trimethylbenzene	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
2-Butanone	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
2-Hexanone	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
2,2-Dichlororopane	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
4-Methyl-2-pentanone	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Acetone	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Benzene	mg/Kg	0.0094	U	0.012	U	0.00468	J	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	ND		ND		0.741		ND		ND		ND		ND	
Bromobenzene	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
Bromochloromethane	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
Bromodichloromethane	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
Bromoform	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
Bromomethane	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
Butylbenzne	mg/Kg	0.0094	U	6.52	J	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
Carbon disulfide	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Carbon tetrachloride	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
Chlorobenzene	mg/Kg	0.0094	U	0.0336		0.0112	J	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	ND		ND		5.71		ND		ND		ND		6.26	
Chloroethane	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
Chloroform	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
Chloromethane	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
cis-1,2-Dichloroethene	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
cis-1,3-Dichloropropene	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Cumene	mg/Kg	0.0094	U	0.00552	J	0.0173		0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
Cyclohexane	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Dibromochloropropane	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Dibromochloromethane	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
Dichlorodifluoromethane	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
Dibromomethane	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
Ethylbenzene	mg/Kg	0.0094	U	0.012	U	0.0157		0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	ND		--		--		ND		--		--		ND	
m - and p-Xylenes	mg/Kg	0.0094	U	0.012	U	0.00779	J	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
Methyl Acetate	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Methylcyclohexane	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Methylene chloride	mg/Kg	0.0683	J	0.0093	J	0.0099	J	0.0091	U	0.011	U	0.0076	U	0.007	U	0.00871		--		--		--		--		--		--		--	
Methyltert-butylether	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
n-Propylbenzene	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
o-Chlorotoluene	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
o-Xylene	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
p_Chlorotoluene	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	

TABLE B-18
HISTORICAL ANALYTICAL RESULTS
SEDIMENT SAMPLES - HACKENSACK RIVER (1996-2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SED-A1 08/29/96 0-1 Primary		SED-A2 08/29/96 0-1 Primary		SED-A3 08/29/96 0-1 Primary		SED-A4 08/29/96 0-1 Primary		SED-B1 08/29/96 0-1 Primary		SED-B2 08/29/96 0-1 Primary		SED-B3 08/29/96 0-1 Primary		SED-C1 08/29/96 0-1 Primary		TPS-A1-1 01/17/00 1 Primary		TPS-A1-5 01/19/00 5 Primary		TPS-A1-10 01/19/00 10 Primary		TPS-A2-1 01/17/00 1 Primary		TPS-A2-5 01/17/00 5 Primary		TPS-A2-10 01/19/00 10 Primary		TPS-A3-1 01/17/00 1 Primary	
p_Cymene	mg/Kg	0.0094	U	0.00791	J	0.0428		0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
sec-Butylbenzne	mg/Kg	0.0094	U	0.00184	J	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
Styrene	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
tert-Butylbenzene	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
Tetrachloroethene	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	ND		ND		1.98		ND		ND		ND		ND	
Toluene	mg/Kg	0.0094	U	0.012	U	0.00764	J	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	ND		--		--		ND		--		--		ND	
trans-1,2-Dichloroethene	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
trans-1,3-Dichloropropene	mg/Kg	--		--		--		--		--		--		--				--		--		--		--		--		--		--	
Trichloroethene	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
Trichlorofluoromethane	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
Vinyl chloride	mg/Kg	0.0094	U	0.012	U	0.014	U	0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
Xylene (total)	mg/Kg	--		--		--		--		--		--		--		--		ND		--		--		ND		--		--		ND	
Semivolatile Organics																															
1,2,3-Trichlorobenzene	mg/Kg	0.0094	U	0.0111	J	0.0187		0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	--		--		--		--		--		--		--	
1,2,4-Trichlorobenzene	mg/Kg	0.0094	U	0.0405		0.0611		0.0091	U	0.011	U	0.0076	U	0.007	U	0.0079	U	ND		1.1		0.183		ND		ND		43.2		ND	
1,2-Dichlorobenzene	mg/Kg	0.00419	J	0.16		0.164		0.00767	J	0.00478	J	0.00195	J	0.007	U	0.0079	U	ND		ND		13.4		ND		ND		766		0.64	
1,3-Dichlorobenzene	mg/Kg	0.0187		0.145		0.0696		0.0315		0.00445	J	0.00162	J	0.007	U	0.00911		ND		ND		29.7		ND		ND		103		0.38	
1,4-Dichlorobenzene	mg/Kg	0.0454		0.212		0.16		0.0791		0.0108	J	0.00373	J	0.00203	J	0.00617	J	ND		ND		26.4		ND		ND		759		0.42	
2,4,5-Trichlorophenol	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
2,4,6-Trichlorophenol	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
2,4-Dichlorophenol	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
2,4-Dimethylphenol	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
2,4-Dinitrophenol	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
2,4-Dinitrotoluene	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
2,6-Dinitrotoluene	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
2-Chloronaphthalene	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
2-Chlorophenol	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
2-Methylnaphthalene	mg/Kg	--		--		--		--		--		--		--		--		ND		ND		ND		ND		ND		0.58		ND	
2-Methylphenol	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
2-Nitroaniline	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
2-Nitrophenol	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
3-Nitroaniline	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
4,6-Dinitro-2-methylphenol	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
4-Bromophenylphenyl ether	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
4-Chloroaniline	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
4-Chlorophenyl phenyl ether	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
4-Chloro-3-methylphenol	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
4-Methylphenol	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
4-Nitroaniline	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
4-Nitrophenol	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Acenaphthene	mg/Kg	--		--		--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		0.25	J
Acenaphthylene	mg/Kg	--		--		--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		2.22	
Anthracene	mg/Kg	--		--		--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND	
Azobenzene	mg/Kg	--		--		--		--		--		--		--		--		ND		ND		ND		0.16	J	ND		ND		4.85	
Benzo(a)anthracene	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Benzo(a)pyrene	mg/Kg	--		--		--		--		--		--		--		--		ND		ND		ND		0.66		ND		ND		15	
Benzo(b)fluoranthene	mg/Kg	--		--		--		--		--		--		--		--		0.77	J	ND		ND		0.54		ND		ND		13.2	
Benzo(ghi)perylene	mg/Kg	--		--		--		--		--		--		--		--		ND		ND		ND		0.72		ND		ND		16.3	
Benzo(k)fluoranthene	mg/Kg	--		--		--		--		--		--		--		--		ND		ND		ND		0.4		ND		ND		4.5	
Benzoic acid	mg/Kg	--		--		--		--		--		--		--		--		ND		ND		ND		0.28		ND		ND		6.65	
Benzyl alcohol	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Bis(2-chloroethoxy)methane	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Bis(2-chloroethyl)ether	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Bis(2-chloroisopropyl)ether	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Bis(2-ethylhexyl)phthalate	mg/Kg	--		--		--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		5.01	

TABLE B-18
HISTORICAL ANALYTICAL RESULTS
SEDIMENT SAMPLES - HACKENSACK RIVER (1996-2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SED-A1 08/29/96 0-1 Primary		SED-A2 08/29/96 0-1 Primary		SED-A3 08/29/96 0-1 Primary		SED-A4 08/29/96 0-1 Primary		SED-B1 08/29/96 0-1 Primary		SED-B2 08/29/96 0-1 Primary		SED-B3 08/29/96 0-1 Primary		SED-C1 08/29/96 0-1 Primary		TPS-A1-1 01/17/00 1 Primary		TPS-A1-5 01/19/00 5 Primary		TPS-A1-10 01/19/00 10 Primary		TPS-A2-1 01/17/00 1 Primary		TPS-A2-5 01/17/00 5 Primary		TPS-A2-10 01/19/00 10 Primary		TPS-A3-1 01/17/00 1 Primary	
Butyl benzyl phthalate	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Carbazole	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Chrysene	mg/Kg	--		--		--		--		--		--		--		--		ND		ND		ND		0.53		ND		ND		11.2	
Dibenzo(a,h)anthracene	mg/Kg	--		--		--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		1.77	
Dibenzofuran	mg/Kg	--		--		--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND	
Diethyl phthalate	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Dimethyl phthalate	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Di-n-butyl phthalate	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Di-n-octyl phthalate	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Fluoranthene	mg/Kg	--		--		--		--		--		--		--		--		1.01		ND		ND		1.14		ND		ND		41.2	
Fluorene	mg/Kg	--		--		--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		0.61	
Hexachlorobenzene	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Hexachlorobutadiene	mg/Kg	0.0094	U	--		--		0.0091	U	0.011	U	0.0076	U	0.007	U	--		--		--		--		--		--		--		--	
Hexachlorocyclopentadiene	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Hexachloroethane	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Indeno(1,2,3-cd)pyrene	mg/Kg	--		--		--		--		--		--		--		--		ND		ND		ND		0.36		ND		ND		4.91	
Isophorone	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Naphthalene	mg/Kg	0.00258	J	0.0335		0.367		0.00462	J	0.00357	J	0.00688	J	0.00744	J	ND		200		0.323		ND		0.48		ND		40.9		0.64	
Nitrobenzene	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
N-Nitrosodiphenylamine	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
N-Nitrosodipropylamine	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Pentachlorophenol	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Phenanthrene	mg/Kg	--		--		--		--		--		--		--		--		ND		ND		ND		0.44		ND		ND		4.32	
Phenol	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Pyrene	mg/Kg	--		--		--		--		--		--		--		--		1.01		ND		ND		0.97		ND		ND		26.9	
Polychlorinated Dioxins and Furans																															
1,2,3,4,6,7,8-HpCDD	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
1,2,3,4,6,7,8-HpCDF	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
1,2,3,4,7,8,9-HpCDF	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
1,2,3,4,7,8-HxCDD	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
1,2,3,4,7,8-HxCDF	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
1,2,3,6,7,8-HxCDD	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
1,2,3,6,7,8-HxCDF	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
1,2,3,7,8,9-HxCDD	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
1,2,3,7,8-PCDD	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
1,2,3,7,8-PCDF	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
2,3,4,6,7,8-HxCDF	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
2,3,4,7,8-PCDF	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
2,3,7,8-TCDD	mg/Kg	--		--		--		--		--		--		--		--		ND		ND		ND		ND		ND		ND		ND	
2,3,7,8-TCDF	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
OCDD	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
OCDF	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Total HpCDD	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Total HpCDF	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Total HxCDD	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Total HxCDF	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Total PeCDD	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Total PeCDF	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
PCBs																															
Aroclor 1016	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Aroclor 1221	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Aroclor 1232	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Aroclor 1242	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Aroclor 1248	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Aroclor 1254	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	

TABLE B-18
HISTORICAL ANALYTICAL RESULTS
SEDIMENT SAMPLES - HACKENSACK RIVER (1996-2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	SED-A1 08/29/96 0-1 Primary	SED-A2 08/29/96 0-1 Primary	SED-A3 08/29/96 0-1 Primary	SED-A4 08/29/96 0-1 Primary	SED-B1 08/29/96 0-1 Primary	SED-B2 08/29/96 0-1 Primary	SED-B3 08/29/96 0-1 Primary	SED-C1 08/29/96 0-1 Primary	TPS-A1-1 01/17/00 1 Primary	TPS-A1-5 01/19/00 5 Primary	TPS-A1-10 01/19/00 10 Primary	TPS-A2-1 01/17/00 1 Primary	TPS-A2-5 01/17/00 5 Primary	TPS-A2-10 01/19/00 10 Primary	TPS-A3-1 01/17/00 1 Primary
Aroclor 1260	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pesticides																
4,4'-DDD	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4'-DDE	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4'-DDT	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aldrin	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
alpha-BHC	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
alpha-Chlordane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
beta-BHC	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chlordane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
delta-BHC	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dieldrin	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endosulfan I	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endosulfan II	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endosulfan sulfate	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endrin	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endrin aldehyde	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endrin ketone	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
gamma-Chlordane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Heptachlor	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Heptachlor epoxide	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lindane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methoxychlor	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toxaphene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals																
Aluminum	mg/Kg	--	--		--	--	--	--	--	--	--	--	--	--	--	--
Antimony	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	mg/Kg	--	--	--	--	--	--	--	--	19.5	0.443	1.97	8.8	76.4	1.9	31.4
Barium	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	mg/Kg	--	--	--	--	--	--	--	--	0.3	ND	ND	ND	ND	ND	0.6
Cadmium	mg/Kg	--	--	--	--	--	--	--	--	0.9	ND	ND	0.6	1.6	ND	2.4
Calcium	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	mg/Kg	--	--	--	--	--	--	--	--	3207	9.5	24.7	3197	930	38.7	1280
Chromium (Hexavalent)	mg/Kg	--	--	--	--	--	--	--	--	ND	ND	ND	ND	73.1	3.81	ND
Cobalt	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	mg/Kg	--	--	--	--	--	--	--	--	45.4	29.9	6.48	17.4	199	10.7	150
Iron	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	mg/Kg	--	--	--	--	--	--	--	--	131	2.84	ND	81.4	236	3.9	178
Magnesium	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	mg/Kg	--	--	--	--	--	--	--	--	0.4	ND	ND	0.2	1.3	ND	4.4
Nickel	mg/Kg	--	--	--	--	--	--	--	--	208	2.68	5.34	173	107	8.8	68.4
Potassium	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	mg/Kg	--	--	--	--	--	--	--	--	ND	ND	ND	ND	ND	ND	1.7
Sodium	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	mg/Kg	--	--	--	--	--	--	--	--	ND	ND	0.091	ND	ND	0.2	ND
Vanadium	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	mg/Kg	--	--	--	--	--	--	--	--	288	15.8	10	193	411	21.1	362
RCRA Characteristics and Indicators																
Corrosivity (pH)	S.U.	6.88	6.63	6.2	7	7.52	7.5	7.59	4.46	--	--	--	--	--	--	--
Total Organic Carbon	mg/Kg	33600	56650	59750	29850	33450	24550	22050	48050	20000	61000	1800	25000	4900	4300	22000

TABLE B-18
HISTORICAL ANALYTICAL RESULTS
SEDIMENT SAMPLES - HACKENSACK RIVER (1996-2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	TPS-A3-5 01/17/00 5 Primary	TPS-A3-10 01/19/00 10 Primary	TPS-B1-1 01/17/00 1 Primary	TPS-B1-5 01/17/00 5 Primary	TPS-B1-10 01/18/00 10 Primary	TPS-B2-1 01/18/00 1 Primary	TPS-B2-5 01/18/00 5 Primary	TPS-B2-10 01/18/00 10 Primary	TPS-B3-1 01/17/00 1 Primary	TPS-B3-5 01/17/00 5 Primary	TPS-B3-10 01/19/00 10 Primary	TPS-C1-1 01/17/00 1 Primary	TPS-C1-5 01/17/00 5 Primary	TPS-C1-10 01/19/00 10 Primary	TPS-C2-1 01/18/00 1 Primary
Volatile Organics																
1,1,1-Trichloroethane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,1,2-Tetrachloroethane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloro-1-propene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1-Methylethyl-benzene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dibromoethane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dibromoethane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichloropropane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Hexanone	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,2-Dichlororopane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Methyl-2-pentanone	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	mg/Kg	ND	ND	ND	--	--	ND	--	--	ND	--	--	ND	--	--	ND
Bromobenzene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromochloromethane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromodichloromethane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromoform	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromomethane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Butylbenzne	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon disulfide	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chlorobenzene	mg/Kg	ND	ND	ND	ND	ND	ND	ND	ND	0.69 J	ND	ND	--	--	--	--
Chloroethane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cumene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyclohexane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibromochloropropane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichlorodifluoromethane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibromomethane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	mg/Kg	--	--	ND	--	--	ND	--	--	ND	--	--	ND	--	--	ND
m - and p-Xylenes	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl Acetate	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methylcyclohexane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methylene chloride	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyltert-butylether	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
n-Propylbenzene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Chlorotoluene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
p_Chlorotoluene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE B-18
HISTORICAL ANALYTICAL RESULTS
SEDIMENT SAMPLES - HACKENSACK RIVER (1996-2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	TPS-A3-5 01/17/00 5 Primary	TPS-A3-10 01/19/00 10 Primary	TPS-B1-1 01/17/00 1 Primary	TPS-B1-5 01/17/00 5 Primary	TPS-B1-10 01/18/00 10 Primary	TPS-B2-1 01/18/00 1 Primary	TPS-B2-5 01/18/00 5 Primary	TPS-B2-10 01/18/00 10 Primary	TPS-B3-1 01/17/00 1 Primary	TPS-B3-5 01/17/00 5 Primary	TPS-B3-10 01/19/00 10 Primary	TPS-C1-1 01/17/00 1 Primary	TPS-C1-5 01/17/00 5 Primary	TPS-C1-10 01/19/00 10 Primary	TPS-C2-1 01/18/00 1 Primary
p_Cymene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
sec-Butylbenzne	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Styrene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
tert-Butylbenzene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethene	mg/Kg	ND	ND	ND	--	--	ND	--	--	ND	--	--	ND	--	--	ND
Toluene	mg/Kg	--	--	ND	ND	0.22 J	ND	ND	ND	0.38 J	ND	ND	ND	--	--	ND
trans-1,2-Dichloroethene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Trichloroethene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Trichlorofluoromethane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vinyl chloride	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylene (total)	mg/Kg	--	--	ND	--	--	ND	--	--	ND	--	--	ND	--	--	ND
Semivolatile Organics																
1,2,3-Trichlorobenzene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	mg/Kg	ND	2.97	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	mg/Kg	ND	2.23	ND	ND	ND	ND	ND	0.29	ND	ND	ND	--	--	--	--
1,3-Dichlorobenzene	mg/Kg	ND	0.84	ND	ND	ND	ND	ND	0.22 J	ND	ND	ND	--	--	--	--
1,4-Dichlorobenzene	mg/Kg	ND	0.86	ND	ND	ND	ND	ND	0.47	ND	ND	ND	--	--	--	--
2,4,5-Trichlorophenol	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chloronaphthalene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	mg/Kg	ND	ND	ND	ND	ND	ND	ND	4.8	0.35 J	ND	ND	4.4 J	ND	ND	7 J
2-Methylphenol	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Nitroaniline	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Nitrophenol	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3-Nitroaniline	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,6-Dinitro-2-methylphenol	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Bromophenylphenyl ether	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloro-3-methylphenol	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Methylphenol	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Nitroaniline	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Nitrophenol	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	mg/Kg	ND	ND	ND	ND	ND	ND	ND	1.1	0.75	ND	ND	11.7	ND	ND	15.4
Acenaphthylene	mg/Kg	0.33 J	ND	ND	ND	ND	ND	ND	ND	0.82	ND	ND	50.4	0.4	ND	39.8
Anthracene	mg/Kg	ND	ND	ND	ND	ND	ND	ND	0.32	ND	ND	ND	--	--	--	--
Azobenzene	mg/Kg	0.3	ND	ND	ND	ND	ND	ND	ND	1.98	ND	ND	75.2	0.4	ND	127
Benzo(a)anthracene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	mg/Kg	1.06	ND	0.76	ND	ND	0.66	ND	ND	4.31	ND	ND	304	1.4	ND	260
Benzo(b)fluoranthene	mg/Kg	1.1	ND	1.07	ND	ND	0.61	ND	ND	2.79	ND	ND	281	2	ND	217
Benzo(ghi)perylene	mg/Kg	1.07	ND	2.67	ND	ND	1.14	ND	ND	2.76	ND	ND	391	2.3	ND	310
Benzo(k)fluoranthene	mg/Kg	0.67	ND	0.63	ND	ND	0.22 J	ND	ND	1.36	ND	ND	219	1.5	ND	99.4
Benzoic acid	mg/Kg	0.33 J	ND	1.93	ND	ND	0.63	ND	ND	1.13	ND	ND	130	0.9	ND	114
Benzyl alcohol	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis(2-chloroethoxy)methane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis(2-chloroethyl)ether	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis(2-chloroisopropyl)ether	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis(2-ethylhexyl)phthalate	mg/Kg	ND	ND	0.33 J	ND	0.51	0.96	ND	ND	0.78	ND	ND	ND	0.4	ND	5.8

TABLE B-18
HISTORICAL ANALYTICAL RESULTS
SEDIMENT SAMPLES - HACKENSACK RIVER (1996-2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	TPS-A3-5 01/17/00 5 Primary		TPS-A3-10 01/19/00 10 Primary		TPS-B1-1 01/17/00 1 Primary		TPS-B1-5 01/17/00 5 Primary		TPS-B1-10 01/18/00 10 Primary		TPS-B2-1 01/18/00 1 Primary		TPS-B2-5 01/18/00 5 Primary		TPS-B2-10 01/18/00 10 Primary		TPS-B3-1 01/17/00 1 Primary		TPS-B3-5 01/17/00 5 Primary		TPS-B3-10 01/19/00 10 Primary		TPS-C1-1 01/17/00 1 Primary		TPS-C1-5 01/17/00 5 Primary		TPS-C1-10 01/19/00 10 Primary		TPS-C2-1 01/18/00 1 Primary	
Butyl benzyl phthalate	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Carbazole	mg/Kg	--		--		--		--		--		--		--		--								27.1		ND		ND		32.9	
Chrysene	mg/Kg	0.56		ND		0.6		ND		ND		0.34		ND		ND		2.97		ND		ND		259		0.8		ND		200	
Dibenzo(a,h)anthracene	mg/Kg	ND		ND		ND	U	ND		ND		ND		ND		ND		0.88		ND		ND		61.2		0.5		ND		37.8	
Dibenzofuran	mg/Kg	ND		ND		ND	U	ND		ND		ND		ND		0.68		ND		ND		ND		18.7		ND		ND		20.8	
Diethyl phthalate	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Dimethyl phthalate	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Di-n-butyl phthalate	mg/Kg	--		--		--		--		--		--		--		--								ND		0.2	J	ND		ND	
Di-n-octyl phthalate	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Fluoranthene	mg/Kg	1.29		ND		1.28	J	ND		ND		0.79		ND		ND		4.41		ND		ND		740		2.2		ND		733	
Fluorene	mg/Kg	ND		ND		ND		ND		ND		ND		ND		0.28		0.51		ND		ND		37.5		ND		ND		45.7	
Hexachlorobenzene	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Hexachlorobutadiene	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Hexachlorocyclopentadiene	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Hexachloroethane	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Indeno(1,2,3-cd)pyrene	mg/Kg	0.55		ND		0.44	J	ND		ND		0.21	J	ND		ND		1.38		ND		ND		190		1.3		ND		94.4	
Isophorone	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Naphthalene	mg/Kg	0.34	J	0.29		4570		26.3		ND		0.73		ND		2.57		3.94		0.13		ND		28.3		0.4		ND		21.1	
Nitrobenzene	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
N-Nitrosodiphenylamine	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
N-Nitrosodipropylamine	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Pentachlorophenol	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Phenanthrene	mg/Kg	0.85		ND		0.49	J	ND		ND		ND		ND		0.19	J	2.25		ND		ND		414		1		ND		521	
Phenol	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Pyrene	mg/Kg	1.81		ND		0.89		ND		ND		0.56		ND		ND		5.26		ND		ND		581		2.8		ND		503	
Polychlorinated Dioxins and Furans																															
1,2,3,4,6,7,8-HpCDD	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
1,2,3,4,6,7,8-HpCDF	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
1,2,3,4,7,8,9-HpCDF	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
1,2,3,4,7,8-HxCDD	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
1,2,3,4,7,8-HxCDF	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
1,2,3,6,7,8-HxCDD	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
1,2,3,6,7,8-HxCDF	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
1,2,3,7,8,9-HxCDD	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
1,2,3,7,8-PCDD	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
1,2,3,7,8-PCDF	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
2,3,4,6,7,8-HxCDF	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
2,3,4,7,8-PCDF	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
2,3,7,8-TCDD	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
2,3,7,8-TCDF	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
OCDD	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
OCDF	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Total HpCDD	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Total HpCDF	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Total HxCDD	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Total HxCDF	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Total PeCDD	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Total PeCDF	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
PCBs																															
Aroclor 1016	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Aroclor 1221	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Aroclor 1232	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Aroclor 1242	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Aroclor 1248	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	
Aroclor 1254	mg/Kg	--		--		--		--		--		--		--		--		--		--		--		--		--		--		--	

TABLE B-18
HISTORICAL ANALYTICAL RESULTS
SEDIMENT SAMPLES - HACKENSACK RIVER (1996-2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	TPS-A3-5 01/17/00 5 Primary	TPS-A3-10 01/19/00 10 Primary	TPS-B1-1 01/17/00 1 Primary	TPS-B1-5 01/17/00 5 Primary	TPS-B1-10 01/18/00 10 Primary	TPS-B2-1 01/18/00 1 Primary	TPS-B2-5 01/18/00 5 Primary	TPS-B2-10 01/18/00 10 Primary	TPS-B3-1 01/17/00 1 Primary	TPS-B3-5 01/17/00 5 Primary	TPS-B3-10 01/19/00 10 Primary	TPS-C1-1 01/17/00 1 Primary	TPS-C1-5 01/17/00 5 Primary	TPS-C1-10 01/19/00 10 Primary	TPS-C2-1 01/18/00 1 Primary
Aroclor 1260	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pesticides																
4,4'-DDD	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4'-DDE	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4'-DDT	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aldrin	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
alpha-BHC	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
alpha-Chlordane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
beta-BHC	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chlordane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
delta-BHC	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dieldrin	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endosulfan I	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endosulfan II	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endosulfan sulfate	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endrin	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endrin aldehyde	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endrin ketone	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
gamma-Chlordane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Heptachlor	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Heptachlor epoxide	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lindane	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methoxychlor	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toxaphene	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals																
Aluminum	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	mg/Kg	112	2.03	7.91	6.21	0.28	38.9	0.78	1.38	105	2.06	2.6	15.1	14.6	0.75	10.5
Barium	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	mg/Kg	0.8	0.404	2	ND	ND	0.62	0.43	ND	0.869	ND	0.609	ND	ND	0.32	0.5
Cadmium	mg/Kg	1.5	ND	1.27	ND	ND	1.3	ND	ND	2.21	ND	0.259	1.3	ND	ND	3.3
Calcium	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	mg/Kg	257	14.3	1079	143	6.59	5240	34.2	12.8	376	27	43	11700	14400	14.8	2790
Chromium (Hexavalent)	mg/Kg	4.29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	22.1	ND	ND	ND
Cobalt	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	mg/Kg	317	13.8	37	ND	1.44	110	4.78	15	295	7.34	20.7	50.7	12.4	9.78	115
Iron	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	mg/Kg	339	11.7	51.6	ND	3.46	192	7.84	4.27	337	5.63	11.8	119	25.6	5.34	118
Magnesium	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	mg/Kg	6.4	ND	0.098	0.159	0.03	6.5	0.1	ND	2.47	0.032	ND	1.2	2.2	ND	2.9
Nickel	mg/Kg	62.3	22	50.6	8.07	2.49	308	7.3	2.06	64.5	7.72	39.8	241	138	12.2	72.1
Potassium	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	mg/Kg	2.2	ND	ND	ND	ND	0.86	ND	ND	2.31	ND	ND	ND	ND	ND	0.6
Sodium	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	mg/Kg	ND	0.104	ND	ND	ND	0.29	ND	ND	0.42	ND	0.093	ND	ND	ND	0.2
Vanadium	mg/Kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	mg/Kg	388	55	162	37.6	3.84	420	11.7	3.6	499	18.4	72.3	343	114	31.1	300
RCRA Characteristics and Indicators																
Corrosivity (pH)	S.U.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Organic Carbon	mg/Kg	19000	2300	58000	71000	45000	11000	18000	ND	18000	1400	3100	59000	49000	1000	40000

TABLE B-18
HISTORICAL ANALYTICAL RESULTS
SEDIMENT SAMPLES - HACKENSACK RIVER (1996-2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	TPS-C2-5 01/18/00 5 Primary	TPS-C2-10 01/19/00 10 Primary	TPS-C3-1 01/18/00 1 Primary	TPS-C3-5 01/18/00 5 Primary	TPS-C3-10 01/19/00 10 Primary	SC-SED-01 01/02/02 Primary	SC-SED-02 01/02/02 Primary	SC-SED-03 01/02/02 Primary
Volatile Organics									
1,1,1-Trichloroethane	mg/Kg	--	--	--	--	--	ND	ND	ND
1,1,1,2-Tetrachloroethane	mg/Kg	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	mg/Kg	--	--	--	--	--	ND	ND	ND
1,1,2-Trichloroethane	mg/Kg	--	--	--	--	--	ND	ND	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg	--	--	--	--	--	ND	ND	ND
1,1-Dichloro-1-propene	mg/Kg	--	--	--	--	--	--	--	--
1,1-Dichloroethane	mg/Kg	--	--	--	--	--	ND	ND	ND
1,1-Dichloroethene	mg/Kg	--	--	--	--	--	ND	ND	ND
1-Methylethyl-benzene	mg/Kg	--	--	--	--	--	ND	ND	ND
1,2-Dibromoethane	mg/Kg	--	--	--	--	--	ND	ND	ND
1,2-Dibromoethane	mg/Kg	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	mg/Kg	--	--	--	--	--	--	--	--
1,2-Dichloroethane	mg/Kg	--	--	--	--	--	ND	ND	ND
1,2-Dichloroethene	mg/Kg	--	--	--	--	--	ND	ND	ND
1,2-Dichloropropane	mg/Kg	--	--	--	--	--	ND	ND	ND
1,2,4-Trimethylbenzene	mg/Kg	--	--	--	--	--	--	--	--
1,3-Dichloropropane	mg/Kg	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	mg/Kg	--	--	--	--	--	--	--	--
2-Butanone	mg/Kg	--	--	--	--	--	ND	ND	ND
2-Hexanone	mg/Kg	--	--	--	--	--	ND	ND	ND
2,2-Dichlororopane	mg/Kg	--	--	--	--	--	--	--	--
4-Methyl-2-pentanone	mg/Kg	--	--	--	--	--	ND	ND	ND
Acetone	mg/Kg	--	--	--	--	--	ND	ND	ND
Benzene	mg/Kg	--	--	ND	--	--	ND	ND	ND
Bromobenzene	mg/Kg	--	--	--	--	--	--	--	--
Bromochloromethane	mg/Kg	--	--	--	--	--	--	--	--
Bromodichloromethane	mg/Kg	--	--	--	--	--	ND	ND	ND
Bromoform	mg/Kg	--	--	--	--	--	ND	ND	ND
Bromomethane	mg/Kg	--	--	--	--	--	ND	ND	ND
Butylbenzne	mg/Kg	--	--	--	--	--	--	--	--
Carbon disulfide	mg/Kg	--	--	--	--	--	ND	ND	ND
Carbon tetrachloride	mg/Kg	--	--	--	--	--	ND	ND	ND
Chlorobenzene	mg/Kg	--	--	--	--	--	ND	ND	ND
Chloroethane	mg/Kg	--	--	--	--	--	ND	ND	ND
Chloroform	mg/Kg	--	--	--	--	--	ND	ND	ND
Chloromethane	mg/Kg	--	--	--	--	--	ND	ND	ND
cis-1,2-Dichloroethene	mg/Kg	--	--	--	--	--	ND	ND	ND
cis-1,3-Dichloropropene	mg/Kg	--	--	--	--	--	ND	ND	ND
Cumene	mg/Kg	--	--	--	--	--	--	--	--
Cyclohexane	mg/Kg	--	--	--	--	--	ND	ND	ND
Dibromochloropropane	mg/Kg	--	--	--	--	--	ND	ND	ND
Dibromochloromethane	mg/Kg	--	--	--	--	--	ND	ND	ND
Dichlorodifluoromethane	mg/Kg	--	--	--	--	--	ND	ND	ND
Dibromomethane	mg/Kg	--	--	--	--	--	--	--	--
Ethylbenzene	mg/Kg	--	--	ND	--	--	ND	ND	ND
m - and p-Xylenes	mg/Kg	--	--	--	--	--	--	--	--
Methyl Acetate	mg/Kg	--	--	--	--	--	ND	ND	ND
Methylcyclohexane	mg/Kg	--	--	--	--	--	ND	ND	ND
Methylene chloride	mg/Kg	--	--	--	--	--	ND	ND	ND
Methyltert-butylether	mg/Kg	--	--	--	--	--	ND	ND	ND
n-Propylbenzene	mg/Kg	--	--	--	--	--	--	--	--
o-Chlorotoluene	mg/Kg	--	--	--	--	--	--	--	--
o-Xylene	mg/Kg	--	--	--	--	--	--	--	--
p_Chlorotoluene	mg/Kg	--	--	--	--	--	--	--	--

TABLE B-18
HISTORICAL ANALYTICAL RESULTS
SEDIMENT SAMPLES - HACKENSACK RIVER (1996-2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	TPS-C2-5 01/18/00 5 Primary		TPS-C2-10 01/19/00 10 Primary		TPS-C3-1 01/18/00 1 Primary		TPS-C3-5 01/18/00 5 Primary		TPS-C3-10 01/19/00 10 Primary		SC-SED-01 01/02/02 Primary		SC-SED-02 01/02/02 Primary		SC-SED-03 01/02/02 Primary	
p_Cymene	mg/Kg	--		--		--		--		--		--		--		--	
sec-Butylbenzne	mg/Kg	--		--		--		--		--		--		--		--	
Styrene	mg/Kg	--		--		--		--		--		ND		ND		ND	
tert-Butylbenzene	mg/Kg	--		--		--		--		--		--		--		--	
Tetrachloroethene	mg/Kg	--		--		ND		--		--		ND		ND		ND	
Toluene	mg/Kg	--		--		ND		--		--		ND		ND		ND	
trans-1,2-Dichloroethene	mg/Kg	--		--		--		--		--		--		--		--	
trans-1,3-Dichloropropene	mg/Kg	--		--		--		--		--		ND		ND		ND	
Trichloroethene	mg/Kg	--		--		--		--		--		--		--		--	
Trichlorofluoromethane	mg/Kg	--		--		--		--		--		ND		ND		ND	
Vinyl chloride	mg/Kg	--		--		--		--		--		ND		ND		ND	
Xylene (total)	mg/Kg	--		--		ND		--		--		ND		ND		ND	
Semivolatile Organics																	
1,2,3-Trichlorobenzene	mg/Kg	--		--		--		--		--		--		--		--	
1,2,4-Trichlorobenzene	mg/Kg	--		--		--		--		--		ND		ND		ND	
1,2-Dichlorobenzene	mg/Kg	--		--		--		--		--		ND		ND		ND	
1,3-Dichlorobenzene	mg/Kg	--		--		--		--		--		ND		ND		ND	
1,4-Dichlorobenzene	mg/Kg	--		--		--		--		--		0.19	J	0.56	J	0.59	J
2,4,5-Trichlorophenol	mg/Kg	--		--		--		--		--		ND		ND		ND	
2,4,6-Trichlorophenol	mg/Kg	--		--		--		--		--		ND		ND		ND	
2,4-Dichlorophenol	mg/Kg	--		--		--		--		--		ND		ND		ND	
2,4-Dimethylphenol	mg/Kg	--		--		--		--		--		ND		ND		ND	
2,4-Dinitrophenol	mg/Kg	--		--		--		--		--		ND		ND		ND	
2,4-Dinitrotoluene	mg/Kg	--		--		--		--		--		ND		ND		ND	
2,6-Dinitrotoluene	mg/Kg	--		--		--		--		--		ND		ND		ND	
2-Chloronaphthalene	mg/Kg	--		--		--		--		--		ND		ND		ND	
2-Chlorophenol	mg/Kg	--		--		--		--		--		ND		ND		ND	
2-Methylnaphthalene	mg/Kg	ND		ND		ND		ND		ND		1.9		0.49	J	0.55	J
2-Methylphenol	mg/Kg	--		--		--		--		--		ND		ND		ND	
2-Nitroaniline	mg/Kg	--		--		--		--		--		ND		ND		ND	
2-Nitrophenol	mg/Kg	--		--		--		--		--		ND		ND		ND	
3-Nitroaniline	mg/Kg	--		--		--		--		--		ND		ND		ND	
4,6-Dinitro-2-methylphenol	mg/Kg	--		--		--		--		--		ND		ND		ND	
4-Bromophenylphenyl ether	mg/Kg	--		--		--		--		--		ND		ND		ND	
4-Chloroaniline	mg/Kg	--		--		--		--		--		ND		ND		ND	
4-Chlorophenyl phenyl ether	mg/Kg	--		--		--		--		--		ND		ND		ND	
4-Chloro-3-methylphenol	mg/Kg	--		--		--		--		--		ND		ND		ND	
4-Methylphenol	mg/Kg	--		--		--		--		--		0.27	J	ND		ND	
4-Nitroaniline	mg/Kg	--		--		--		--		--		ND		ND		ND	
4-Nitrophenol	mg/Kg	--		--		--		--		--		ND		ND		ND	
Acenaphthene	mg/Kg	ND		ND		ND		ND		ND		5.6		1.2	J	2.3	
Acenaphthylene	mg/Kg	ND		ND		ND		ND		ND		10		2.5		5.7	
Anthracene	mg/Kg	--		--		--		--				--		--		--	
Azobenzene	mg/Kg	0.2		ND		0.35		ND		ND		23		4.6		7.4	
Benzo(a)anthracene	mg/Kg	--		--		--		--		--		ND		ND		ND	
Benzo(a)pyrene	mg/Kg	0.9		ND		1.66		0.2		ND		61		11		17	
Benzo(b)fluoranthene	mg/Kg	0.5		ND		1.76		0.1		ND		63		10		15	
Benzo(ghi)perylene	mg/Kg	0.8		ND		2.56		0.2		ND		74		13		20	
Benzo(k)fluoranthene	mg/Kg	0.3		ND		0.75		ND		ND		41		6.6		7.7	
Benzoic acid	mg/Kg	0.4		ND		1.08		ND		ND		27		5.2		5.7	
Benzyl alcohol	mg/Kg	--		--		--		--		--		ND		ND		ND	
Bis(2-chloroethoxy)methane	mg/Kg	--		--		--		--		--		ND		ND		ND	
Bis(2-chloroethyl)ether	mg/Kg	--		--		--		--		--		ND		ND		ND	
Bis(2-chloroisopropyl)ether	mg/Kg	--		--		--		--		--		ND		ND		ND	
Bis(2-ethylhexyl)phthalate	mg/Kg	ND		ND		7.04		ND		ND		4.7		ND		ND	

TABLE B-18
HISTORICAL ANALYTICAL RESULTS
SEDIMENT SAMPLES - HACKENSACK RIVER (1996-2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	TPS-C2-5 01/18/00 5 Primary		TPS-C2-10 01/19/00 10 Primary		TPS-C3-1 01/18/00 1 Primary		TPS-C3-5 01/18/00 5 Primary		TPS-C3-10 01/19/00 10 Primary		SC-SED-01 01/02/02 Primary		SC-SED-02 01/02/02 Primary		SC-SED-03 01/02/02 Primary	
Butyl benzyl phthalate	mg/Kg	--		--		--		--		--		ND		ND		ND	
Carbazole	mg/Kg	ND		ND		ND		ND		ND		--		--		--	
Chrysene	mg/Kg	0.4		ND		1.61		0.1		ND		60		11		15	
Dibenzo(a,h)anthracene	mg/Kg	ND		ND		0.23		ND		ND		2.3		0.71	J	0.92	J
Dibenzofuran	mg/Kg	ND		ND		ND		ND		ND		6		1.1	J	1.6	
Diethyl phthalate	mg/Kg	--		--		--		--		--		0.21		ND		1	
Dimethyl phthalate	mg/Kg	--		--		--		--		--		ND		ND		ND	
Di-n-butyl phthalate	mg/Kg	ND		ND		ND		ND		ND		ND		ND		ND	
Di-n-octyl phthalate	mg/Kg	--		--		--		--		--		ND		ND		ND	
Fluoranthene	mg/Kg	1.4		ND		3.61		ND		ND		97		20		31	
Fluorene	mg/Kg	ND		ND		ND		ND		ND		8.3		1.6		2.5	
Hexachlorobenzene	mg/Kg	--		--		--		--		--		ND		ND		ND	
Hexachlorobutadiene	mg/Kg	--		--		--		--		--		ND		ND		ND	
Hexachlorocyclopentadiene	mg/Kg	--		--		--		--		--		ND		ND		ND	
Hexachloroethane	mg/Kg	--		--		--		--		--		ND		ND		ND	
Indeno(1,2,3-cd)pyrene	mg/Kg	0.3		ND		0.75		ND		ND		43		7.2		9	
Isophorone	mg/Kg	--		--		--		--		--		ND		ND		ND	
Naphthalene	mg/Kg	ND		ND		ND		ND		ND		7.1		2.8		3.6	
Nitrobenzene	mg/Kg	--		--		--		--		--		ND		ND		ND	
N-Nitrosodiphenylamine	mg/Kg	--		--		--		--		--		ND		ND		ND	
N-Nitrosodipropylamine	mg/Kg	--		--		--		--		--		ND		ND		ND	
Pentachlorophenol	mg/Kg	--		--		--		--		--		ND		ND		ND	
Phenanthrene	mg/Kg	0.4		ND		1.02		ND		ND		63		11		15	
Phenol	mg/Kg	--		--		--		--		--		0.35	J	ND		ND	
Pyrene	mg/Kg	1.4		ND		2.96		0.4		ND		83		17		24	
Polychlorinated Dioxins and Furans																	
1,2,3,4,6,7,8-HpCDD	mg/Kg	--		--		--		--		--		0.102		0.218		0.244	
1,2,3,4,6,7,8-HpCDF	mg/Kg	--		--		--		--		--		0.881		1.86		1.6	
1,2,3,4,7,8,9-HpCDF	mg/Kg	--		--		--		--		--		0.0243		0.0621		0.052	
1,2,3,4,7,8-HxCDD	mg/Kg	--		--		--		--		--		0.00468		0.00462		0.00871	
1,2,3,4,7,8-HxCDF	mg/Kg	--		--		--		--		--		0.236		0.525		0.548	
1,2,3,6,7,8-HxCDD	mg/Kg	--		--		--		--		--		0.00984		0.0185		0.0249	
1,2,3,6,7,8-HxCDF	mg/Kg	--		--		--		--		--		0.042		0.0762		0.08	
1,2,3,7,8,9-HxCDD	mg/Kg	--		--		--		--		--		0.00827		0.0139		0.0153	
1,2,3,7,8-PCDD	mg/Kg	--		--		--		--		--		0.00631		0.00802		0.00958	
1,2,3,7,8-PCDF	mg/Kg	--		--		--		--		--		0.0101		0.013		0.0144	
2,3,4,6,7,8-HxCDF	mg/Kg	--		--		--		--		--		0.0173		0.0446		0.0413	
2,3,4,7,8-PCDF	mg/Kg	--		--		--		--		--		0.0284		0.0602		0.06	
2,3,7,8-TCDD	mg/Kg	ND		ND		ND		ND		ND		0.0398		0.0961		0.0898	
2,3,7,8-TCDF	mg/Kg	--		--		--		--		--		0.0559		0.0937		0.101	
OCDD	mg/Kg	--		--		--		--		--		1.43		2.82		2.7	
OCDF	mg/Kg	--		--		--		--		--		1.06		2.95		2.67	
Total HpCDD	mg/Kg	--		--		--		--		--		0.0243		0.59		0.612	
Total HpCDF	mg/Kg	--		--		--		--		--		1.03		2.14		1.98	
Total HxCDD	mg/Kg	--		--		--		--		--		0.107		0.152		0.22	
Total HxCDF	mg/Kg	--		--		--		--		--		0.623		1.03		1.16	
Total PeCDD	mg/Kg	--		--		--		--		--		0.0255		0.0482		0.0533	
Total PeCDF	mg/Kg	--		--		--		--		--		0.233		0.544		0.575	
PCBs																	
Aroclor 1016	mg/Kg	--		--		--		--		--		ND		ND		ND	
Aroclor 1221	mg/Kg	--		--		--		--		--		ND		ND		ND	
Aroclor 1232	mg/Kg	--		--		--		--		--		ND		ND		ND	
Aroclor 1242	mg/Kg	--		--		--		--		--		ND		ND		ND	
Aroclor 1248	mg/Kg	--		--		--		--		--		ND		ND		ND	
Aroclor 1254	mg/Kg	--		--		--		--		--		ND		ND		ND	

TABLE B-18
HISTORICAL ANALYTICAL RESULTS
SEDIMENT SAMPLES - HACKENSACK RIVER (1996-2002)
STANDARD CHLORINE SITE
KEARNY, NEW JERSEY

Constituent of Interest	Units	TPS-C2-5 01/18/00 5 Primary	TPS-C2-10 01/19/00 10 Primary	TPS-C3-1 01/18/00 1 Primary	TPS-C3-5 01/18/00 5 Primary	TPS-C3-10 01/19/00 10 Primary	SC-SED-01 01/02/02 Primary	SC-SED-02 01/02/02 Primary	SC-SED-03 01/02/02 Primary
Aroclor 1260	mg/Kg	--	--	--	--	--	ND	ND	ND
Total PCBs	mg/Kg	--	--	--	--	--	--	--	--
Pesticides									
4,4'-DDD	mg/Kg	--	--	--	--	--	ND	ND	ND
4,4'-DDE	mg/Kg	--	--	--	--	--	ND	ND	ND
4,4'-DDT	mg/Kg	--	--	--	--	--	ND	ND	ND
Aldrin	mg/Kg	--	--	--	--	--	ND	ND	ND
alpha-BHC	mg/Kg	--	--	--	--	--	ND	ND	ND
alpha-Chlordane	mg/Kg	--	--	--	--	--	ND	ND	ND
beta-BHC	mg/Kg	--	--	--	--	--	ND	ND	ND
Chlordane	mg/Kg	--	--	--	--	--	ND	ND	ND
delta-BHC	mg/Kg	--	--	--	--	--	ND	ND	ND
Dieldrin	mg/Kg	--	--	--	--	--	ND	ND	ND
Endosulfan I	mg/Kg	--	--	--	--	--	ND	ND	ND
Endosulfan II	mg/Kg	--	--	--	--	--	ND	ND	ND
Endosulfan sulfate	mg/Kg	--	--	--	--	--	ND	ND	ND
Endrin	mg/Kg	--	--	--	--	--	ND	ND	ND
Endrin aldehyde	mg/Kg	--	--	--	--	--	ND	ND	ND
Endrin ketone	mg/Kg	--	--	--	--	--	ND	ND	ND
gamma-Chlordane	mg/Kg	--	--	--	--	--	ND	ND	ND
Heptachlor	mg/Kg	--	--	--	--	--	ND	ND	ND
Heptachlor epoxide	mg/Kg	--	--	--	--	--	ND	ND	ND
Lindane	mg/Kg	--	--	--	--	--	ND	ND	ND
Methoxychlor	mg/Kg	--	--	--	--	--	ND	ND	ND
Toxaphene	mg/Kg	--	--	--	--	--	ND	ND	ND
Metals									
Aluminum	mg/Kg	--	--	--	--	--	8900	12000	11000
Antimony	mg/Kg	--	--	--	--	--	3.8	3.3	2.7
Arsenic	mg/Kg	0.6	2.36	13.5	0.5	0.75	20	12	12
Barium	mg/Kg	--	--	--	--	--	93	78	77
Beryllium	mg/Kg	ND	0.4	0.3	ND	0.32	0.59	0.77	0.73
Cadmium	mg/Kg	ND	ND	1.9	ND	ND	1.7	1.4	1.1
Calcium	mg/Kg	--	--	--	--	--	3400	6400	5800
Chromium	mg/Kg	51.3	25.5	4580	53	14.8	570	510	410
Chromium (Hexavalent)	mg/Kg	ND	ND	ND	ND	ND	--	--	--
Cobalt	mg/Kg	--	--	--	--	--	9.4	62	11
Copper	mg/Kg	5.2	20.9	67.2	11.5	9.79	100	460	89
Iron	mg/Kg	--	--	--	--	--	21000	160000	29000
Lead	mg/Kg	3.1	7.52	100	2.7	5.34	160	540	97
Magnesium	mg/Kg	--	--	--	--	--	5100	600	7800
Manganese	mg/Kg	--	--	--	--	--	260	3300	440
Mercury	mg/Kg	0.1	ND	1.7	0.3	ND	1.7	200	0.59
Nickel	mg/Kg	2.2	15.3	94.1	2.1	12.2	31	8.8	34
Potassium	mg/Kg	--	--	--	--	--	1600	180	2100
Selenium	mg/Kg	--	--	--	--	--	0.77	ND	0.74
Silver	mg/Kg	ND	ND	0.6	ND	ND	1.3	8.1	1.7
Sodium	mg/Kg	--	--	--	--	--	4300	5000	8200
Thallium	mg/Kg	ND	ND	0.2	ND	ND	ND	ND	ND
Vanadium	mg/Kg	--	--	--	--	--	36	250	36
Zinc	mg/Kg	8.3	39	224	94.2	31.3	210	1100	190
RCRA Characteristics and Indicators									
Corrosivity (pH)	S.U.	--	--	--	--	--	--	--	--
Total Organic Carbon	mg/Kg	49000	890	17000	23000	450	39000	53000	39000